Testing the effect of timing of delivery of a cross-cultural training program

by

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Abstract

In this quasi-experimental field study I examined how timing of delivery impacted the effectiveness of a cross-cultural training program called "Realistic Orientation Programs for Entry Stress" (ROPES; Fan & Wanous, 2008). Participants were first-year international graduate teaching assistants (GTAs) in year 2012 and 2013 at Auburn University who were required to take INTL 1820 English class due to their limited English proficiency. There were two sections for INTL 1820 in both years' fall semester and the treatment was randomly assigned to class sections. Participants in one section of INTL 1820 received the ROPES training during the second week of the fall semester (the Early Group), whereas participants in another section of INTL 1820 received the same ROPES training two months after the fall semester started (the Delayed Group). I hypothesized that compared with participants in the Early Group, participants in the Delayed Group would report a higher level of utility perceptions of the ROPES training, have higher retention of knowledge of ROPES content, engaged in more coping behaviors taught in the ROPES program, felt less stress, and reported better cross-cultural adjustment over time. In addition, utility perceptions were hypothesized to mediate the above treatment effects. Results showed that participants in the Delayed Group reported higher level of utility perceptions of the ROPES training than the participants in the Early Group, but not for retention of knowledge, coping behaviors, stress, or adjustment. Moreover, there was a significant indirect effect of utility perceptions on the relationship between condition and adjustment.

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List of Abbreviations

ACCA	Academic Cross-cultural Adjustment
CCAC	Cross-Cultural Absorptive Capacity
CCT	Cross-Cultural Training
ICCA	Interaction Cross-cultural Adjustment
JIT	Just-in-time
SIT	Stress Inoculation Theory
SLT	Social Learning Theory
RJP	Realistic Job Preview
ROPES	Realistic Orientation Programs for new Employee Stress
VSC	Value Self-Confrontation

Introduction

"Cross-cultural training (CCT) is the educative process used to improve intercultural learning via the development of the cognitive, affective, and behavioral competencies needed for successful interactions in diverse cultures" (Landis & Brislin, 1996). The present study examined the effect of timing of CCT delivery on CCT effectiveness. Participants were international graduate students newly arrived in the U.S. (Auburn University). A newly developed CCT program, Realistic Orientation Programs for Entry Stress (ROPES; Fan & Wanous, 2008), was used. The literature review was divided into the following sections: (a) the importance of CCT, (b) a brief overview of various approaches to and methods of CCT, (c) a brief review of the ROPES training, (d) a discussion on time of CCT delivery as an important determinant of CCT effectiveness, particularly in the ROPES context. Afterwards, I proposed research hypotheses.

The Importance of Cross-Cultural Training

The globalization process provides increased opportunities for cross-cultural interactions, which accompany personnel exchange across country borders (Black, Mendenhall, & Oddou, 1991; Earley & Ang, 2003). Among different types of international movers, I focus on a specific group — sojourners. Characteristics of sojourners are that their stay in another country is "temporary", "voluntary", "for more than six months", and "task related" (Aycan & Kanungo, 1997, p. 246). Examples of sojourners include business expatriates, foreign guest workers, international students, and U.N. peacekeepers (Fan & Wanous, 2008). Take international students as an example. Number of international students studying in a foreign country has increased dramatically. According to the Open Doors Report (2013), published annually by the Institute of International Education, the total international student enrollment in the U.S.

increased 7% in the 2012-13 academic year compared to the previous year, which made a record high of 819,644 international students in the U.S.

For sojourners, maladjustment in the foreign country is a big issue (Caligiuri, Phillips, Lazarova, Tarique & Blirgi, 2001; Takeuchi, Tesluk, Yun, & Lepak 2005), and some sojourners terminate their overseas assignment prematurely because of their inability to adjust to the foreign environment. Maladjustment and premature return can lead to huge losses for different stakeholders. Bhaskar-Shrinivas, Harrison, Shaffer and Luk (2005) concluded based on a meta-analysis that maladjustment may have negative impacts on expatriates, their families, and the firms that send them. For instance, maladjustment may impair expatriates' self-esteem, self-confidence, performance, and even premature return (Church, 1982; Kraimer, Wayne, & Jaworski, 2001; Tackeuchi, Tesluk, Yun, & Lepak, 2005; Van Vianen, Kristof-Brown, & Johnson, 2004). Morris and Robie (2001) estimated that each early returned expatriate employee can cost the organization up to a quarter of a million dollars on average. International students face similar situations. The lack of adjustment for international students may lower their self-confidence (e.g., Mak & Tran, 2001) and prevent them from completing their education program (Zhao, 2010). Also, the families of these overseas students may be affected psychologically and financially because of high expectations placed on the students and the high expenses of tuition and living (Zhao, 2010). Therefore, the emphasis should be placed on colleges and universities to ensure the success of international students' adjustment to local cultures.

Then what can be done to minimize the adjustment failure of sojourners in the host country? Many researchers have suggested that cross-cultural training may provide an effective solution to the above problem (Black & Mendenhall, 1990; Landis & Brislin, 1983; Kealey & Protheroe, 1996). Accumulative empirical evidence suggested that well-designed cross-cultural

training programs seem effective in facilitating sojourner overall adjustment, reducing premature return rate from overseas assignment, and improving supervisor ratings of job performance (Black & Mendenhall, 1990; Deshpande & Viswesvaran, 1992; Littrell, Salas, Hess, Paley & Riedel, 2006; Morris & Robie, 2001; Selmer, Torbiorn, & de Leon, 1998).

An Overview of Cross-cultural Training (CCT) Methods and Approaches

According to Harrison and Hopkins' (1967) review, the most popular CCT method at the time was the lecture method or the so-called "University Model," which only involves trainees' passive learning, without evoking their emotions or emphasizing interactions between people. In response, Harrison and Hopkins recommended another training method called experiential training, with an emphasis on active learning (for examples of experiential exercises, see Shirts, 1973; Gochenour, 1977; Batchelder & Warner, 1977). With the emergence of more CCT methods and approaches, the original taxonomy has been expanded. Most contemporary taxonomies (e.g., Befus, 1988; Littrell, Salas, Hess, Paley & Riedel, 2006) are based on Brislin, Landis and Brandt's (1983) six categories—information training, attribution training, culture awareness training, cognitive-behavior modification training, experiential learning training, and interaction training.

However, one common weakness of these taxonomies is that they do not make a clear distinction of training focus and training method. Training focus refers to the contents that the training focuses on (e.g., attitude, expectation, stress); whereas training method refers to the method the CCT uses to deliver the training (e.g., lecture, discussion, role-play). To address this weakness, I propose a tentative, two-dimensional taxonomy to better organize CCT programs with a training focus dimension and a training method dimension (see Table 1). For each type of CCT, there might be multiple foci, but I will only discuss its main focus. Therefore, along the

training focus dimension, I divide CCT programs into one of the four categories: (a) affect-focused, (b) cognition-focused, (c) behavior-focused, and (d) stress-focused. Along the training method dimension, I divide CCT programs into one of the two categories: (a) information-focused methods and (b) active learning-focused methods.

Affect-focused CCT

Value self-confrontation (VSC) training is suggested to be a potential useful training for changing values and attitudes in cross-cultural contexts (Landis & Bhagat, 1996). Belief system provides a framework for understanding how attitudes, values, and behaviors are organized and the conditions under which they will remain stable or undergo change (Grube, Mayton & Rokeach, 1994). VSC is a training approach to initiating changes or enhancing stability in beliefs, attitudes, values, and behaviors that are based on belief system theory (Rokeach, 1980). In a VSC training, trainees evaluate their own values, attitudes, and behaviors on specific topics and are then provided feedbacks and interpretations of their significant others' values and attitudes. The feedbacks and interpretations may induce a state of self-dissatisfaction and make them aware that they are more or less chronically holding certain values and attitudes or behaving in ways that are counter to their own expectations of competence or morality (Grube et al., 1994). Although VSC has not yet been applied to cross-cultural training settings, Landis and Bhagat argued that VSC may be used for CCT. Regarding the delivery methods, reading, lecture, and discussion will be good options.

Cognition-focused CCTs

Cognition-focused CCTs target various cognitive variables such as expectations, attribution, and language. For instance, the traditional realistic job preview (RJP) is designed to lower new employees' expectations by presenting them realistic (both favorable and

unfavorable) information about the job and the organization (Wanous, 1992). Empirical studies have shown that the RJP is effective in reducing new employees' expectations, reducing turnover, and increasing job satisfaction and job performance (Buckley, Fedor, Veres, Wiese, & Carraher, 1998; Phillips, 1998; Buckley, Mobbs, Mendoza, Novicevic, Carraher, & Beu, 2002; Fan, Buckley & Litchfield, 2012).

Caligiuri and Philips (2003) attempted to apply the RJP intervention to the expatriate context. These authors developed a written version of RJP that contains realistic information about expatriate assignment with a self-assessment component. Caligiuri and Phillips conducted a field experiment with a group of expatriate candidates in a large multi-national firm. A random half of expatriate candidates received a work book and were asked to self-assess their personality characteristics, family situation and career issues relative to the demands of a global assignment and were provided feedback on their fit with these demands. Another random half did not receive such a work book. Results showed that this self-assessment RJP increased expatriate candidates' self-efficacy for success on a global assignment and their perceived ability to make an informed decision as to whether to accept a global assignment. Whereas a written RJP was used in Caligiuri and Phillips' study, we argue that other training methods such as lecture, video, and discussion should be considered in future RJP research in the cross-cultural context.

Another type of cognition-focused CCT targets sojourners' attributions. Scholars have suggested that one common difficulty sojourners tend to have in the new culture is that they tend to use their knowledge based on their own culture to interpret behaviors in the host country, which often results in misinterpretation, and in turn, felt adjustment difficulties (Befus, 1988; Brislin, Landis & Brandt, 1983). Attribution training tries to address this issue by training

sojourners on how to interpret behaviors from the perspective of the host country culture (Brislin et al., 1983; Befus, 1988; Brislin & Bhawuk, 1999; Bhawuk, 2001).

Cultural assimilator is the most commonly used method for attribution training. It was developed in the early 1960s in the Group Effectiveness Research Laboratory at the University of Illinois by Fiedler, Osgood, Stolurow, and Triandis. Cultural assimilator is a training tool that consists of a number of real-life scenarios describing intercultural interactions between a sojourner and a host country national that involves a misunderstanding because of cultural differences. At the end of each scenario, there are four alternative explanations for behaviors in the scenario. Trainees are asked to select the most plausible explanation based on his judgment. Afterwards trainees receive feedback. If an incorrect answer is chosen, explanations are offered why trainees' answer is incorrect in the host country culture. Then trainees make the second attempt, and the circle continues until the correct answer is identified. Most of the cultural assimilator trainings use some sort of written booklet and trainees go through the cultural assimilator booklet.

In the early development stage, culture assimilators were developed for specific cultural groups, for instance, to prepare North American teenagers about to work in health settings in Honduras (Symonds, O'Brien, Vidmar, & Hornik, 1967), and to train U.S. Air Force Advisors how to interact with Thai people (Worchel & Mitchell, 1970). The high degree of specificity made culture-specific assimilators' utility limited. In response, culture-general assimilators were developed (Brislin, Cushner, Cherrie, & Yang, 1986; Cushner, 1989). These culture-general assimilators have the same format as culture-specific assimilators, but attempt to address common cross-cultural experiences or difficulties (e.g. certain degree of ambiguity, myriad of emotional experiences, need to belong) regardless of the cultural groups with which they

interact, no matter what their particular roles within a new culture will be, and regardless of their final destination. Later on, theory-based assimilators were developed to address the lack of strong theories of previous culture assimilators. The notion was that if trainees are provided a cognitive framework based on a culture theory, their cognitive complexity can be more effectively enhanced through culture assimilators. For instance, Bhawuk (1995) developed a classic theory-based assimilator by emphasizing several major principles of individualism and collectivism.

Empirical studies have documented the beneficial effects of cultural assimilator on attribution or appropriate interpretation of behaviors of host country nationals (e.g., Weldon, Carlston, Rissman, Slobodin & Triandis, 1975; Landis, Day, McGrew, Thomas, & Miller, 1976; Landis, Brislin, Swanner, Tseng, & Thomas, 1985; Bhawuk, 1998; Cushner, 1989). Besides attribution, cultural assimilators also showed effects on affective outcomes such as trainee reactions (Worchel & Mitchell, 1972), intercultural sensitivity and stereotype (Weldon, Carlston, Rissman, Slobodin & Triandis, 1975; Bhawuk, 1998), and ethnic identity (Dela Cruz, Salzman, Brislin & Losch, 2006); behavioral and performance outcomes like problem solving (Cushner, 1989), Ethnocultural Identity Behavior (Dela Cruz, Salzman, Brislin & Losch, 2006), success in obtaining helpful responses to their requests for information (Sanchez-Burks, Lee, Nisbett & Ybarra, 2007), productivity (Worchel & Mitchell, 1972), adjustment (Worchel & Mitchell, 1972; Cushner, 1989), and interpersonal relations (Worchel & Mitchell, 1972). Besides written version of cultural assimilators, attribution training could also use other methods such as video.

Another type of cognition-based CCT is culture self-awareness training, which teaches sojourners to learn about their own culture and their possible reactions to other cultures (Brislin, Landis & Brandt, 1983; Bennett, 1986a, b; Befus, 1988; Brislin & Bhawuk, 1999; Litrell et al.,

2006). Gudykunst, Hammer and Wiseman (1977) argued that individuals know their culture so well that they do not think about it, and that those who have better understanding of their own cultures would be more effective in oversea assignments. Stewart (1966) trained Americans going abroad using culture self-awareness training (i.e. the Contrast-American technique). He used a model (an actor) to demonstrate behaviors that were completely opposite to the way that Americans normally did and asked the trainees to interact with the model, and videotaped the interaction processes. This training helps the trainees to recognize their own cultural values and analyze the contrasts with other cultures, which will then help them in intercultural interactions (Bennett, 1986a, b; Bhawuk & Brislin, 2000).

Simulation games such as BAFA BAFA (Shirts, 1973) and Albatross (Gochenour, 1977) could also be considered as culture awareness training in that the main purpose of these two simulation games is to foster culture awareness by having trainees interact with people in simulated, artificial cultures. For instance, in BAFA BAFA, trainees are randomly assigned into one of the two cultures—Alpha culture is a relationship oriented, strong in-group/out-group distinctions, and a non-competitive culture, whereas Beta culture is a highly competitive culture. Then people from two cultures interact with each other by playing card games using their own culture's rules. In Albatross, trainees visit a fake country Albatrs, a place with unique costumes, and two Albatrossians (actors) teach trainees their special ways to greeting, eating, etc., using body language instead of spoken language. After the simulation game, a discussion about trainees' experiences and feelings are conducted, during which trainees are made more aware of, and more appreciative about cultural differences. The aforementioned various culture self-awareness trainings could use videos, role-plays, lectures, and discussions as training methods.

Language training focused on language of the host country. It is necessary because language is the carrier of culture and is the basic precondition to better understand the host country's culture (Triandis, 1983; Gudykunst, Guzley, & Hammer, 1996). As for delivery method, language training commonly uses the lecture method. For future studies, language training could use more active learning-focused method such as role play and discussion.

Behavior-focused CCT

Some CCTs focus on changing sojourners' behaviors to make them more appropriate in the host country. I categorize behavior-focused CCTs into two types. The first type is experiential training, which models trainees' behaviors by having them actively experience the new culture, either actual or simulated. Note that unlike BAFA BAFA and Albatross, which use non-existent, artificial cultures, experiential trainings target some existing cultures. The common methods for experiential training are area simulation, field trips, and role plays. Area simulation, or so-called "cultural immersion," usually utilizes a natural setting to simulate the target culture (Brislin, Landis, & Brandt, 1983). For example, Trifonovitch (1977) used this approach to train Peace Corps personnel and government workers who were going to live in Micronesia. Trainees were brought to a rural part of Hawaii, which was very similar to the typical Micronesian village, and they had to solve living difficulties by themselves, such as digging their own latrines, arranging daily activities by the sun and tides instead of watches, rationing the limited amount of fresh water, etc. Trifonovith argued that this type of training emphasized doing instead of just talking about cultural differences.

Field trips have also been used to train soon-to-be sojourners to get familiar with the new culture in advance. For example, U.S. Navy training program used to arrange a field trip as part

of the orientation for new Navy personnel to be stationed in Japan (Brislin, Landis, & Brandt, 1983). I am not aware of any empirical studies that tested the effects of field trips.

Role-play is another classic method for experiential training. Trainees are assigned to different roles and they play out the roles in different contexts (Elms, 1967). Although role-play has often been used in CCT, I am not aware of empirical studies that tested its efficacy. However, a few studies examined role-play along with other CCT techniques. For instance, Eachus and King (1966) used role play with self-confrontation process to train cross-cultural communicative skills for United States Air Force military advisors. Trainees played the role of an Air Force Captain to interact with a "foreign counterpart," played by an actor. For self-confrontation group, the interaction processes were videotaped and being watched by the trainee immediately afterwards. Experimenter provided verbal critiques on trainees' performance on whether the behavior was appropriate or inappropriate. Compared with the other group of trainees who read the training manuals and did the role play without self-confrontation, the self-confrontation group trainees had better retention of knowledge and exhibited more appropriate behaviors during inter-cultural communications (Eachus & King, 1966). More recently, scholars have developed computer-based role-play exercises (e.g., Pepe & Santarelli, 2009), whose efficacy in improving cross-cultural adjustment and performance has yet to be established.

The second type of behavior-focused CCTs is interaction training. In interaction training, newly arrived sojourners are assigned to a few host country nationals or experienced sojourners and are encouraged to interact with these "old hands" in non-threatening contexts (Brislin, Landis, & Brandt, 1983; Befus, 1988). The rationale is that this kind of interactions may help newly arrived sojourners get ready for actual task-related overseas assignments. The most common delivery method for interaction training is the on-the-job training (or hand-on training)

(Brewster, 1995; Brislin, Landis, & Brandt, 1983). This type of training has not been systematically tested and fully discussed in the academic literature.

CCT with stress focus

Another type of CCT focuses on reducing sojourner stress. Stress is a complex concept and has affective, cognitive, and behavioral components; therefore, stress-reducing type of CCTs constitutes a stand-alone category. The prototypical example of stress-reduction CCT is stress inoculation training. For instance, Fan and Wanous (2008) developed a stress-coping cross-cultural orientation program, called "Realistic Orientation Program for Entry Stress" (ROPES), which entailed providing realistic information and recommending coping strategies. Given that I will use ROPES in the present study, I will now discuss this CCT approach in detail.

Realistic Orientation Programs for Entry Stress — a New CCT Approach

The present study used a newly developed CCT intervention called "*R*ealistic *O*rientation *P*rograms for *E*ntry *S*tress" (ROPES), developed by Fan and Wanous (2008) based on the Wanous and colleagues' (Wanous, 1992, 1993; Wanous & Reichers, 2000) conceptual model. The ROPES intervention subscribes to the stress inoculation training approach (Janice, 1958).

Background

Stress inoculation interventions were conducted to prepare patients about to undergo obnoxious medical procedures to alleviate their stress. The theoretical foundation of such interventions was Janis's (1958) theory of "work of worry". Janis hypothesized individuals who experience medium level of fear or worry before the medical procedure will develop more appropriate coping strategies than individuals who experience little or too much fear of worry before the medical procedure. His emotional inoculation intervention includes three steps: (1) patients obtain information about the upcoming stressful events; (2) their mental rehearsal of the

events leads to accurate expectations; (3) patient generates and applies coping techniques. There has been little empirical support for Janis' curvilinear model, but it provides a good theoretical foundation for subsequent inoculation intervention techniques (Webne, 1995).

A number of techniques have been used in medical stress inoculation interventions (for reviews, see Webne, 1995; Ludwick-Rosenthal & Neufeld, 1988). For example, a common technique focuses on providing information, which may consist of procedural information and sensory information. While procedural information refers to what the sequence of procedural events will occur during the medical procedure, sensory information refers to what the sensations the patients will likely feel during the medical procedure. Several reviews indicated that sensory information was more effective than no information, that combined sensory and procedural information was more effective than sensory or procedural information alone, and that sensory information seemed to be similarly effective as procedural information in reducing patients' stress (Ludwick-Rosenthal & Neufeld, 1988; Suls & Wan, 1989).

Other types of techniques used in medical inoculation interventions focus on teaching various coping strategies including relaxation, cognitive-behavior techniques, and modeling techniques (Ludwick-Rosenthal & Neufeld, 1988). Among these coping strategies, cognitive-behavioral and modeling techniques were shown to be most effective (Ludwick-Rosenthal & Neufeld, 1988). There is some evidence that prior experience plays a facilitative role for information provision and cognitive-behavioral management such that these interventions tend to have more beneficial effects among patients who had gone through similar medical procedures before than patients who had not (Padilla, Grant, Rains, Hansen, Bergstrom, Wong, Hanson, & Kubo, 1981; Kendall, Williams, Pechacek, Graham, Shisslak, & Herzoff, 1979).

ROPES in the domestic newcomer context

Wanous and colleagues (Wanous, 1993; Wanous & Reichers, 2000) applied the concept of stress inoculation intervention to the newcomer entry context, and suggested that newcomer orientation programs should provide realistic information about the job and organization and train how to cope with major entry stressors. Wanous and Reichers (2000) coined such type of newcomer orientation programs "Realistic Orientation Programs for new Employee Stress" (ROPES). Wanous and Reichers summarized several studies that tested ROPES-type interventions. For instance, Novaco, Cook, and Sarason (1983) developed, based on a thorough needs assessment, a coping-skills video called "Making It" for Marine recruits going through the military basic training. An evaluation study showed that "Making It" had a significant effect on increasing new recruits' self-efficacy expectations and reducing problems adjusting to drill instructors (Novaco et al., 1983).

In another study, Waung (1995) randomly assigned new employees at a fast-food restaurant (n = 61) into a comparison or a self-regulatory condition. The comparison group was given realistic information and was taught several coping behaviors, whereas the self-regulatory group received the same treatment as the comparison group plus information about common affective reactions (i.e., sensory information), training on cognitive restructuring, self-talk and statements to increase self-efficacy. The results showed that the self-regulatory group reported higher levels of job satisfaction and perceived organizational support than the comparison group.

In another field experimental study conducted in the U.S. Army, Meglino, DeNisi, Youngblood, and William (1988). A group of Army new recruits (n =533) were divided into four groups and received a different orientation program. In the enhancement preview condition, recruits watched a 27-minute video, which provided a detailed overview of basic training. In the

reduction preview condition, recruits watched a 24-minute video, which emphasized the emotional aspects of basic training. This orientation program informed new recruits of five specific adjustment problems and recommended various cognitive and behavioral coping strategies. In the combined condition, recruits watched both videos. Finally, in the control condition, recruits did not watch either video. Results showed that (a) recruits in the combined condition had lower turnover than recruits in the three other conditions, and recruits exposed only to the reduction preview had the highest turnovers, and (b) recruits in the combined condition reported higher perceptions of trust and honesty, were more committed to the Army and had higher job satisfaction than recruits in the three other conditions.

ROPES in the CCT context

Fan and Wanous (2008) applied the ROPES concept to the CCT context and developed a ROPES intervention for new international students studying in the U.S. These authors first conducted thorough interviews with international students and identified several major entry stressors. They then developed a ROPES intervention, which entailed a) warning new international students of major entry stressors or difficulties sojourners are likely to encounter in the new culture; and b) recommending various coping strategies that can be used to deal with these major entry stressors.

The warning component has two functions. First, the realistic information reduces sojourner stress through increasing their met expectations. Both the domestic newcomer adjustment literature and the cross-cultural adjustment literature showed that newcomers or new sojourners tend to develop unrealistically high initial expectations for the new environment; however, these inflated initial expectations are likely to be disconfirmed by the reality, which in turn leads to dissatisfaction (Wanous, Poland, Premack, & Davis, 1992) and poor adjustment

(Caligiuri, Phillips, Lazarova, Tarique & Blirgi, 2001; Templer, Tay, & Chandrasekar, 2006). The information on major stressors provides sojourners with a realistic picture of the real situation and increases their met expectations. Second, the realistic information may reduce sojourners' stress by motivating them to develop coping strategies on their own. According to Janis's (1958) work of worrying argument, if patients are made aware of possible impending negative experiences before the medical procedure, they will be motivated to develop coping strategies on their own, which will ultimately lower their stress during and after the procedure.

The coping training component primarily aims to reduce sojourner stress. Although realistic information may also generate coping strategies, the empirical evidence for this effect has been limited and mixed (Phillips, 1998). By contrast, coping training directly provides effective coping strategies, and thus should be more effective in lowering sojourner stress (Wanous & Reichers, 2000). Behavioral medicine research (Ludwick-Rosenthal & Neufeld, 1988; Webne, 1995) clearly indicated that, patients who were taught various cognitive and behavioral coping strategies tend to experience less stress and adjust better during and after exposure to medical procedures. Therefore, ROPES should reduce sojourner stress.

However, Fan and Wanous (2008) did not elaborate on how sojourners learn the coping strategies and then apply them in the real-world scenarios. I argue that Bandura's (1977) social learning theory (SLT) could nicely provide explanations of sojourner learning and transfer. Specifically, there are four central elements in Bandura's (1977) model: attention, retention, reproduction, and incentives. Attention refers to the fact that before the behavior can be modeled, the trainees must notice it. In the cross-cultural context, it might be the target behavior in the host country that is different from the behavior of the sojourners' own country. An example in the ROPES program is the "How are you" phenomenon. For Americans, "how are you" is just an

expression for basic politeness. For international students, especially Asian students, it is interesting or unexpected that Americans are not really interested in how they are, but just to say "hi". Thus, making sojourners aware of cultural differences promotes their learning and transfer. Several factors may influence the attention process, such as the similarity of the culture models, cognitive flexibility, individual's attributes, and the trainer's nationality (Black & Mendenhall, 1990).

Retention is the process of encoding the knowledge of modeled behavior as a memory. The similarity of the behavior, successive modeling of the behavior, and repeated cognitive rehearsal of the modeled behavior can help secure the retention process (Black & Mendenhall, 1990). For ROPES, the goal is to teach sojourners appropriate behaviors (i.e. coping strategies) in the new culture; therefore, memorizing the knowledge of the modeled behavior is requisite. Reproduction involves translating the knowledge of modeled behaviors or symbolic representations into the real action (Black & Mendenhall, 1990). Effective ROPES training would help international students learn about the knowledge and encourage them to use the coping knowledge, which will result in transferring the knowledge into the real behaviors that are appropriate in the new culture.

The last element of SLT, incentive and motivational process, refers to both the external (coming from environment) and internal (coming from individuals) motivators that help people observe, retain, and reproduce the learned behaviors (attention, retention, reproduction process; Black & Mendenhall, 1990). In the cross-cultural situation, incentives can affect which modeled behaviors are observed and how much attention is paid to them; it can also influence how much modeled behavior knowledge is retained and rehearsed into real actions. If the coping strategies could effectively reduce the stress, lowered stress will be a good incentive for international

students to keep using the coping strategies in the future. The four components facilitate the process of modeling sojourners' appropriate behaviors in the new culture. Overall, the SLT explains how sojourners learn the appropriate coping behaviors through learning the knowledge of behaviors.

Fan and Wanous' (2008) ROPES program used the combination of lecture, videos, discussion, and cognitive-behavior modification approaches. An example for cognitive modification approach was providing irrational thoughts that hold students back from practicing English, for instance, "if I ask stupid questions, I will look stupid". Next, sojourners were asked to generate more rational thoughts to replace via small group discussions.

Fan and Wanous (2008) provided empirical evidence for the efficacy of ROPES. Participants in their study were 72 newly arrived international graduate students in a large U.S. public university, and were randomly assigned to one of the two conditions—the traditional CCT and the ROPES intervention. The traditional CCT focused on students' immediate concerns but not on psychological adjustment issues, while the ROPES intervention included the components I have discussed above. Participants completed several surveys before, immediately after the orientations, and then 1, 3, 6, and 9 months post-entry. Results showed that ROPES participants had lower initial expectations, perceived lower stress, reported higher level of adjustment, and had slightly higher retention rate than traditional CCT participants. In addition to the above findings, Fan and Wanous also reported an interesting delayed treatment effect—the beneficial effects on stress and adjustment did not emerge until 6 months post-entry, which is a potential clue that the timing of delivery might matter, an important issue to which I now turn.

The Timing of Delivery Effect

Even that empirical studies support the effectiveness of CCT (e.g. ROPES training) for

enhancing sojourners success, researchers (e.g., Black & Mendenhall, 1990; Morris & Robie, 2001) have warned that the results from studies on the relationship between CCT and sojourners adjustment/performance should be viewed cautiously because many factors may influence the above relationships, for instance, timing of the training, family, job and organizational attributes, cultural toughness, and training duration (Littrell, Salas, Hess, Paley & Riedel, 2006). The present study focuses on the role of timing of delivery because it is not well studied and I believe it plays an important role in affecting CCT effectiveness.

Prior empirical studies in both the domestic training and CCT literatures provided potential clues for the timing of delivery effect. Several theories have also suggested a potential timing effect. I discuss both empirical evidence and relevant theories for such an effect below.

Empirical evidence

Fan and Wanous' (2008) study on the effectiveness of ROPES showed that the beneficial training effects (ROPES vs. control) emerged over time rather than occurred immediately. Specifically, treatment effects on sojourner stress, academic adjustment, and interaction adjustment were not significant at Month 1 and Month 3 post-entry, but became significant at Month 6 and Moth 9 post-entry favoring the ROPES group. Fan and Wanous suspected that international graduate students needed weeks or even months of experience to fully appreciate the information presented in the ROPES session. If this speculation stands, timing of delivery should be an important factor for ROPES effectiveness in particular, and CCT in general. That is, implementing CCT after sojourners have accumulated some meaningful initial experience in the host country should result in better sojourner adjustment/performance as compared with giving CCT upon or shortly after sojourners' arrival in the host country.

In a realistic job preview (RJP) intervention study, Meglino et al. (1988) reported that the

beneficial effect of a reduction preview and a reduction and enhancement combined preview (over the control and an enhancement preview) on organizational commitment and overall satisfaction became more evident over time. These authors argued that only after newcomers had some actual experience in the new organization could they have a better judgment and appreciation about the realistic information they had received. This increased treatment effect over time also implies a timing of delivery effect.

In another RJP study, Meglino, DeNisi, and Ravlin (1993) found that relative to control participants, RJP participants had a higher turnover rate during the probation period, but had a lower turnover rate after the probation period; however, the above effects were stronger among participants who had previous exposure to the same job than among participants who had no such previous exposure. One possible explanation, according to these authors, was that the former participants were able to process the RJP information deeper and more thorough than the latter participants because of their previous exposure to the same job, and thus were more likely to be influenced by the RJP. Meglino et al.'s (1993) findings, with some extrapolation, suggest that delivering CCT after sojourners have been in the new culture for a while (i.e., when they have some experience in the new culture) might lead to sojourners' deeper processing of CCT information, which in turn should result in better adjustment.

McNatt and Judge (2008) tested a self-efficacy boosting intervention among a group of accountants. They found that although main effects were not significant, job tenure (i.e., first-year accountants, *newcomers* vs. second-year accountants, *insiders*) moderated the effectiveness of the above intervention on job attitudes and turnover. Specifically, the treatment effect on increasing job attitudes and reducing turnover was stronger among the insiders than among the newcomers. These authors reasoned that newcomers normally had inflated expectations and

feelings when they begin employment with the organization, which makes it difficult for any kind of intervention to further boost their job attitudes. However, those who have experienced the organizational reality tend to have lower job satisfaction, greater intentions to leave their organization, and higher turnover; therefore, there should be more room for the intervention to boost these insiders' job attitudes and lower their turnovers. In sum, the intervention will be more effective for employees with some experience rather than brand new employees. The results of McNatt and Judge's study imply different effects of CCT on sojourners with different experiences, or with an extension, a timing effect.

Research on Just-in-time (JIT) training also indicates the timing of delivery effect. JIT training offers a wide array of training support tools that match the situation of individuals (Jones, 2001). Individuals could choose to receive the training for specific skills or situations when they perceive they need it. Most just-in-time training studies are qualitative studies using face-to-face interviews, telephone interviews, checklists, or other feedback results. Qualitative data showed beneficial benefits of JIT on different criteria: Student teams' satisfaction and performance (Bolton, 1999), volunteer tutors' retention and contact hours (Belzer, 2013), clinical performance (LPs; Kamdar, Kessler, Tilt, Srivastava, Khanna, Chang & Auerbach, 2013; Nishisaki, Donoghue, Colborn, Watson, Meyer, Brown & Nadkarni, 2010), in-company communication and job security (Treleven 1987; Oliver & Wilkinson, 1989), and inventory, productivity and quality of goods (Golhar & Stamm, 1991). The above empirical findings were consistent with the proposition that trainings provided to trainees at the right time (when they need them most) tend to yield stronger beneficial effects. This implies the importance of timing of delivery as a determinant of training effectiveness.

Theoretical evidence

Several CCT theories also suggest that CCT effectiveness depends on the timing of delivery. Specifically, sequential model theory argues that the implementation of CCT be based on sojourner psychological receptivity (Selmer, Torbion & Leon, 1998). Cross-cultural absorptive capacity theory (Tarique & Caligiuri, 2009) contends that CCT effectiveness depends on sojourners' absorptive capacity of cross-cultural knowledge. These theories have clear implications for the timing of delivery effects. I discuss these two theories in detail below.

Sequential model theory is proposed by Selmer, Torbiorn, and Leon (1998) with the core view that CCT should be designed and delivered to fit sojourner's psychological receptivity to the culture at the given stages to increase the effectiveness. Selmer et al. (1998) proposed four phases of cross-cultural adjustment: The ethnocentric phase, the culture-shock phase, the conformist phase, and the adjusted phase. Through different phases, sojourners' capacity for efficient learning ebbs and flows. Since the purpose of CCT is to make sojourners' learning more efficiently, Selmer et al. proposed specific, suitable content of CCT corresponding specific adjustment phases. For instance, for pre-departure training, because sojourners' psychological predisposition restricts the in-depth understanding of a particular culture not yet experienced, Selmer et al. suggested that CCT focus on essential information on local conditions and information about cross-cultural adjustment processes. For training in the ethnocentric phase, Selmer et al. recommended that CCT focus on increasing sojourners' cultural awareness. After sojourners begin to experience culture shock, CCT should focus on learning how to learn; at the conformist phase, learning by actual practice should be emphasized by CCT (Selmer et al., 1998).

Based on the sequential model, I argue that delivering the ROPES training a couple of months post-entry when sojourners begin to experience culture shock should result in better

training outcomes than delivering the ROPES training upon sojourners' arrival or shortly after, for three reasons. First, when sojourners transition from the ethnocentric phase to the culture-shock phase, sojourners experience increased cognitive inconsistency and ambiguity between their world view and the host culture norm, and decreased confidence in their cross-cultural capabilities. The ROPES training, if delivered at the latter stage vs. the former stage, through offering cross-cultural knowledge such as how friendship is defined in the U.S culture, different characteristics of Asian cultures and the U.S. culture, etc., should be more effective in helping sojourners rebuild cognitive schema and increase confidence, and in turn, better adjustment.

Second, when sojourners move from the ethnocentric phase to the culture-shock phase, sojourners should perceive more discrepancies in the appropriateness of the behaviors based on their own culture and the behaviors in the host culture. Sojourners are more eager to know how to interpret people's behaviors in the host culture, and how to behave appropriately in the host culture. The ROPES training teaches exactly that. For instance, ROPES training teaches international students how to take initiative in interacting with America friends and speak up in the classroom (Fan and Wanous, 2008). Therefore, if ROPES is delivered when sojourners perceive larger discrepancies, it will result in reduced incompatible behaviors and increased acceptable behaviors that are consist with the local culture.

Third, when transitioning from the ethnocentric phase to the culture-shock phase, sojourners experience more and more stress and anxiety. Selmer (2001) speculated that CCT may be more effective if it is delayed until the sojourners tries to cope with culture shock. The ROPES training emphasizes teaching how to cope with major entry stressors (Wanous & Reichers, 2000). If ROPES is offered when sojourners are struggling with stress and anxiety, sojourners should be better equipped with stress coping strategies, which in turn should lead to

stronger stress reduction effect.

In sum, the above argument is consistent with Grove and Torbiorn's (1985) view that if the training is given when the trainees most need it, the training should be most effective. Since the ROPES training teaches cross-cultural knowledge, coaches culturally appropriate behaviors, and instructs stress-coping strategies, it should work best when sojourners are aware of their needs and consider information conveyed in CCT more relevant and more useful. Therefore, I expect that the ROPES training should benefit sojourners more when delivered while sojourners start to experience culture shock than when delivered upon their arrival. Indeed, Selmer (2001) suggested that CCT should be offered a couple of months after sojourners' arrival in the host country instead of immediately after their arrival. (Landis, Bennett, Bennett, 2004).

Cross-cultural absorptive capacity (CCAC) theory (Tartique & Caligiuri, 2009) is another powerful theory to explain how timing of delivery may impact CCT effectiveness. CCAC borrows the notion of absorptive capacity proposed by Cohen and Levinthal (1990). Based on cognitive sciences (e.g., Bower & Hilgard, 1981), Cohen and Levinthal argued that the more prior knowledge stored in memory, the more readily individuals acquire new information in new settings. The above concept can be applied to the CCT context —delivering CCT after sojourners have lived in the new culture for a couple of months may bring out better training outcomes than delivering CCT upon sojourners' arrival (Tartique & Caligiuri, 2009). This is because during the initial couple of months in the new culture, sojourners may accumulate more experience in the host country, for instance, they may observe more differences in values, norms, and behaviors between their own culture and the host culture, and become more aware of adjustment difficulties. These experiences should increase their absorb capacity and readiness of learning the knowledge conveyed in the ROPES training. The more knowledge sojourners obtain

from the ROPES training can in turn benefit them in changing their behaviors, reducing their stress and anxiety, and ultimately increasing their adjustment level and performance. Therefore, I expect ROPES to be more effective when delivered a couple of months post-entry than when delivered upon sojourners' arrival in the new culture and I elaborate the hypotheses below.

The Present Study

There are some debates over whether CCT is best provided pre-departure or post-departure (Black, Gregersen, Mendenhall, & Stroh, 1999; Bennet, Aston & Colquhoun., 2000; Selmer et al., 1998). The only study that looked at this issue was a survey conducted by Selmer (2001), who found that expatriate managers surveyed preferred receiving CCT post-arrival to pre-departure. Further, there is no study examining whether timing of delivery affects CCT effectiveness in the post-arrival context. The present study aims to investigate how and why timing of delivery influences CCT effectiveness in a post-arrival context.

The proposed study was a quasi-experiment. Participants were newly arrived international graduate students enrolled in a public university in a Southeast U.S. These participants received the same CCT (ROPES) at different times, with the Early Group receiving the CCT in the beginning of the fall semester, while the Delayed Group receiving the CCT two months after the fall semester has started. These participants were assessed at several time points, for instance, immediately after the fall semester starts, immediately before and after CCT, 2-month post-CCT, and 8-months after the fall semester has started.

According to the theoretical evidence on timing of delivery effect discussed earlier, I hypothesize that the effect of ROPES should be more positive for the Delayed Group than for the Early Group. Based on the training evaluation literature (e.g., Kirkpatrick, 1967), I examine the following training criteria: Reaction, learning, behavior, and results. Specific variables to be

measured include utility perceptions, retention of the ROPES content, coping behaviors taught by the ROPES training, sojourner stress, and cross-cultural adjustment.

Utility Perceptions

Training reactions is the first level in Kirkpatrick's (1967) four-level training evaluation model. There are two types of trainee reactions: (a) affective reactions and (b) utility perceptions (Alliger, Tannenbaum, Bennett, Traver, & Shotland, 1997). Whereas affective reactions refer to liking of the training and a typical item is "I found this training program enjoyable"; utility perceptions refer to the perceived usefulness of the training and a typical item is "To what degree will this training influence your ability later to perform your job" (Alliger et al., 1997). In this study, I focus on utility perceptions, because Alliger et al.'s (1997) meta-analysis suggested that relative to affective reactions, utility perceptions are more strongly related to other training criteria such as learning and transfer.

Based on Selmer et al.'s (1998) sequential model of CCT, I expect that at the time of the ROPES training, participants in the Delayed Group (who received ROPES two months after the fall semester started) should experience more cognitive inconsistency and ambiguity, and more discrepancies in the appropriateness of the behaviors in the new culture than participants in the Early Group when they received the ROPES training at the beginning of the fall semester. Given that the ROPES training addresses many of these adjustment issues, I argue that participants in the Delayed Group should perceive ROPES content to be more relevant to their adjustment concerns and thus more useful than should participants in the Early Group. Thus, I propose the following hypothesis:

Hypothesis 1: Participants in the Delayed Group should report a higher level of utility perceptions than participants in the Early Group at the end of the ROPES training session.

Retention of ROPES Knowledge and Behavioral Changes

Retaining trained knowledge and applying trained knowledge in real-world contexts are the next two levels of the training criteria (Kirkpatrick, 1967). As discussed earlier, Selmer et al.'s (1998) sequential model of CCT predicts that CCT delivered at a later stage during the cultural entry period should be more effective than CCT delivered at an early stage, because sojourners need to have some meaningful experience in the new culture before they can appreciate the CCT content. In other words, when CCT is delivered at a later vs. an early stage, sojourners are more eager to learn from CCT, resulting in more learning and better retention of the ROPES knowledge. Further, according to Tartique and Caligiuri's (2009) CCAC theory, sojourners' capacity of learning cross-cultural knowledge should be higher after they have accumulated some experience in the new culture. As such, it seems reasonable to expect that at the time of the ROPES training participants in the Delayed Group should have higher learning capacity than participants in the Early Group, and as a result, the former participants should retain more ROPES knowledge than the latter group. In addition, if sojourners obtain the knowledge well and successfully model the behaviors that they learn, it should result in more behavioral changes (i.e., better training transfer). Thus,

Hypothesis 2: Participants in the Delayed Group should have higher retention of ROPES knowledge than participants in the Early Group over time.

Hypothesis 3: Participants in the Delayed Group should engage in more coping behaviors taught in the ROPES training than participants in the Early Group over time.

Sojourner Stress

I category sojourner stress as a criterion at the result level because reduced stress is one important outcome of coping efforts. Stress is a result of the discrepancy between perceived

environmental demands and perceived ability to cope (cf. Lazarus & Folkman, 1984). As argued earlier, participants in the Delayed Group should experience more cognitive and behavior inconsistency (Selmer et al., 1998) at the time when they receive the training, and as a result, they would experience a high level of stress than participants in the Early Group. However, because the ROPES training addresses the major entry stressors by recommending various stress coping strategies, if successful, I expect that participants in the Delayed Group should report less stress than participants in the Early Group over time. Thus,

Hypothesis 4: Participants in the Delayed Group should experience lower stress over time than participants in the Early Group.

Cross-cultural Adjustment

Cross-cultural adjustment refers to the extent to which a sojourner is psychologically comfort in various aspects of life domains (e.g., work/study, interaction, and general living conditions) in the host country (Black, 1990; Black & Gregersen, 1991). Cross-cultural adjustment is treated as the distal outcome of the ROPES training. As I have argued earlier, the ROPES training, if delivered at a later time, should make sojourners perceive higher utility of the training, help them better learn the ROPES content and more frequently exhibit stress-coping behaviors, and experience lower stress than the ROPES training delivered at an early time point. As a result, I predict that the ROPES training should be more effective in boosting cross-cultural adjustment when delivered later than delivered earlier.

Hypothesis 5: Participants in the Delayed Group should report higher levels of cross-cultural adjustment (academic adjustment [5a] and social adjustment [5b]) over time than participants in the Early Group.

Utility Perceptions as a Mediator

After testing the direct effect of timing of delivery on training effectiveness, I explore whether the above effects work through utility perceptions, based on the empirical and theoretical evidence of the timing effect. The evidence of JIT effectiveness showed that the training will be more effective if it is provided when trainee perceive they need it. Grove and Torbiorn (1985) also argued that training will be most effective when it is most needed. Selmer (1998) suggested delivering CCT based on sojourners' need of the training. Meta-analyses showed that utility perceptions were positively related to both learning and transfer (Alliger et al., 1997; Sitzmann, Brown, Casper, Ely, & Zimmerman, 2008). Brown (2005) and Kraiger (2002) further argued that trainee reactions may predict organizational outcomes. Therefore, I expect that trainees' utility perceptions of the ROPES training should have positive relationships with other ROPES training outcomes. Thus,

Hypothesis 6: Perceived utility of ROPES should mediate the relationships between timing of delivery and various training outcomes (knowledge retention, behavioral changes, sojourner stress, and cross-cultural adjustment).

Method

Sample

Participants were 61 first-year international graduate teaching assistants (GTAs) at Auburn University who were required to take INTL 1820 English class due to their limited English proficiency. There were two sections for INTL 1820 in the fall semester of 2012 and 2013 respectively, and the two sections of each year were randomly assigned to the treatment (the Early Group or the Delayed Group). For the 2012 cohort, there were 12 in the Delayed Group and 20 in the Early Group, and for the 2013 cohort, there were 12 in the Delayed Group and 17 in the Early Group.

The demographics for these 61 students were as follows. The average age was 25.41 years old, and the average undergraduate GPA was 3.3. On average, they had stayed in the U.S. for 1.6 months when the fall semester started, and 84% of these participants had less than 3 months prior international experience. The average self-rated English proficiency was 4.32 on a 6-point scale. Twenty-five percentages were female, 88.1% received some sort of financial support, and 70% were in a doctoral level program. For nationalities, most of them came from Asian countries (e.g. China, 49.2%, Bangladesh 8.2%); some were from African countries and South American countries (e.g., Cameroon 5%, Mexico 1.6%). With respect of fields of studies, most of the participants were science and engineering majors (e.g., Chemistry 31%, Math 21%, Physics 15%). These students satisfied two criteria to be included in the current study: (a) they had not stayed in the U.S. or Canada for more than 6 months before coming to Auburn University, and (b) their first language was not English.

Procedure

The procedure for both 2012 cohort and 2013 cohort were same except that for the 2013 cohort, I measured their English proficiency before the ROPES training as a manipulation check. Self-rated English proficiency was measured to rule out the possibility that the Delayed Group participants benefit more because their English ability is higher before the training that might lead to better understanding. The ROPES training was made mandatory in both sections (Sections A and B) of INTL 1820 taught by the same instructor (Mary Diamond); however, students' participation into the study (i.e., completing surveys that assess the effectiveness of the ROPES training) was voluntary. The trainer delivered the ROPES training for the Early Group (students in Section A) two weeks after the fall semester started, and delivered the same ROPES training for the Delayed group (students in Section B) two months after the fall semester started.

The only manipulated variable was the time of the ROPES training delivery. The trainer, Dr. Jinyan Fan, was an associate professor from the Psychology Department of Auburn University, who developed and tested the first ROPES program in the cross-cultural context (Fan & Wanous, 2008).

Figure 1 describes the detailed procedure for both groups. Specifically, for the Early Group (Section A in INTL 1820), I attended the first class, introduced the study, and invited students to participate (5 minutes). Students who decided to participate then completed the consent form (see appendix 2) and a pre-training questionnaire (5 minutes), which contained a demographic survey. Two weeks later, I attended the class again. Students first completed a baseline questionnaire (10 minutes), which contained a cross-culture adjustment measure and a perceived stress scale. After that, the trainer delivered Part One of the ROPES training (45 minutes). In the next class, students received Part Two of the ROPES training (45 minutes) and then completed a post-training survey (10 minutes), which contained a utility perception measure.

Students in the Early Group completed follow-up surveys at three time points: (a) 2 months after the fall semester began, (b) at the end of the fall semester (i.e., 4 months since the fall semester started), and (c) April the following year (i.e., about 8 months since the fall semester started). At the 1st follow-up, students completed a self-report survey, which contained a perceived stress scale and a cross-cultural adjustment measure. At the 2nd and 3rd follow-ups, students completed a self-report survey, which contained a quiz that tested retained knowledge covered by the ROPES training, a perceived stress scale and a cross-cultural adjustment measure; and peer-rating survey. Students were asked to identify two friends who know them well and then invite them to complete the peer-rating survey. The peer-rating survey contained a coping

behavior measure and a cross-cultural adjustment inventory. All peer-rating surveys were mailed to me through pre-paid, self-addressed envelopes.

For the Delayed Group (section B in INTL 1820), I attended the first class, introduced the study, and invited students to participate (5 minutes). Students who decided to participate then completed the consent form and the same pre-training questionnaire as the Early Group participants. Two weeks later, I attended the class again, and students completed a baseline questionnaire which included a cross-cultural adjustment measure and the perceived stress scale. Two months after the fall semester started, I attended the class again, and students completed the same baseline questionnaire as the Early Group participants, and the trainer then delivered Part One of the ROPES training (45 minutes). During the next class, students received Part Two of the ROPES training (45 minutes) and then completed the same post-training survey as the Early Group participants.

Students in the Delayed Group completed two follow-up surveys: (a) at the end of the fall semester (i.e., 4 months since the fall semester started), and (b) April the following year (i.e., about 8 months since the fall semester started). These two follow-up surveys were identical as the 2nd and 3rd follow-up surveys completed by the Early Group participants.

Participants were given extra course credits from the instructor of the INTL 1820 class for participating in this study. Students were informed that those who decided not to participate would be given an alternative opportunity to earn extra credit, but all students decided to participate. Students who completed the last follow-up (both self-report and peer-ratings) were given a $25 cash reward. After the data collection was completed, students were debriefed via a letter.

Measures

Demographic variables. The demographic survey included the following questions: Country of origin, age, gender, time stayed in the U.S., previous international experience, GRE scores, GPA, financial support received, and self-rated English competency.

Manipulation check. Self-rated English proficiency measured international students' listening, speaking, writing proficiency (Fan & Wanous, 2008); it had 4 items rated on a 6-point Likert scale ranging from 1 (*very poor*) to 7 (*extremely good*). One sample item was "How good is your English conversation ability?" The alpha coefficient for the self-rated English proficiency measure was .89 in this sample. In addition, the average self-reported English proficiency was 4.69 (*s.d*. = 1.13).

Utility perceptions. I adapted the utility perceptions measure used by Fan and Wanous (2008). There were 4 items in this measure. One sample item was: "How helpful do you think the ROPES training will be in improving your English?" Items were rated on a scale ranging from 1 (*not helpful at all*) to 6 (*extremely helpful*). The alpha coefficient was .92 in the present sample.

Knowledge retention. I developed a knowledge retention test, which assesses how much knowledge of the ROPES content students retain. There are totally 15 blanks to fill in, and the highest possible score is 15 points. The Appendix lists the knowledge retention questions. The average score for the second follow-up and for the third follow-up was 10.71 (*s.d.* = 2.29) and 9.84 (*s.d.* = 2.35), respectively in the present study.

Coping behaviors (peer-reported). The extent to which students exhibit coping behaviors taught at the ROPES training were measured through a peer-reported inventory developed by Fan and Wanous (2008), which contained an English effort subscale (5 items) and a social effort subscale (5 items). One sample item from the English effort subscale was: "How often does this person utilize various opportunities to practice his/her English?" One sample item

from the social effort subscale was: “How often does this person show initiative during interactions with Americans?” Items were rated on a 4-point scale. When questions asked about the frequency of the behavior, the following rating scale was used: 1 (*never*), 2 (*occasionally*), 3 (*fairly often*) and 4 (*very often*). When questions asked the amount of effort, the following rating scale was used: 1 (*none*), 2(*some*), 3(*quite a bit of*) and 4 (*an extreme amount of*). The alpha coefficients for the second follow-up and for the third follow-up were .87 and .88 respectively in the present study.

Perceived Stress. Newcomer stress was measured by the Perceived Stress Scale – 10 Item Version (PSS-10; Cohen, Kamarck, & Mermelstein, 1983). The PSS measures an individual's appraisal of life as unpredictable, uncontrollable, and overloading. One sample item was “During the last 30 days, how often have you been upset because of something that happened unexpectedly?” Students rated how often they experience these feelings on a 5-point Likert scale (1 = *never*, 5 = *very often*). The alpha coefficients for the baseline, first, second, and third follow-ups were .81, .79, .82, and .85 in the present study.

Cross-cultural adjustment (self-reported and peer-reported). The academic (6 items) and social adjustment (5 items) scales developed by Gong and Fan (2006) were used. Students rated their perceived adjustment on a 7-point Likert-type scale (1= *not well adjusted at all*, 7 = *very well adjusted*). One sample item from the academic adjustment scale was, “How well adjusted are you to the instructional methods at Auburn University?” One sample item from the social adjustment scale was, “How well adjusted are you to social gatherings with Americans?” The alpha coefficients of academic adjustment for the baseline, first, second, and third follow-ups were .93, .93, .96, and .95 in the present study. The alpha coefficients of social adjustment

for the baseline, first, second, and third follow-ups were .95, .96, .92, and .95 in the present study.

The above self-report academic and social adjustment items were modified for the peer-reported academic and social adjustment version. One sample item from the peer-reported academic adjustment scale was, "How well adjusted is this person to the instructional methods at Auburn University?" One sample item from the peer-reported social adjustment scale was, "How well adjusted is this person to social gatherings with Americans?" Items were rated on the same 7-point Likert scale as the self-report version of the cross-cultural adjustment inventory. The alpha coefficients of this peer-rated academic adjustment for the second and third follow-ups were .90 and .92 in the present study. The alpha coefficients of this peer-rated interaction adjustment for the second and third follow-ups were .92 and .94 in the present study.

Results

Group Equivalence

Since the present study was a quasi-experiment, I first tested whether there were pre-existing differences between the two conditions on demographic variables. χ^2 tests indicated that the two groups did not differ on gender (χ^2= .1, df = 1, p = .76), nationality (typical Asian coded as 1, non-typical Asian coded as 0; χ^2= 1.54, df = 1, p = .22). T-tests revealed that the Delayed Group and the Early Group did not differ on GRE Verbal score (434 vs. 425, t (48) = .36, p = .72), undergraduate GPA (3.27 vs. 3.32, t (47) = -.55, p = .59), months stayed in the U.S. before check-in (3.18 vs. 1.99, t (56) = .81, p = .42), and self-rated English proficiency (3.98 vs. 4.52, t (57) = -.19, p = .06).

However, there were also some pre-existing differences between the Early Group and the Delayed Group. Specifically, χ^2 tests indicated that the two groups did differ on degree programs

pursued (doctoral coded as 1, master, ESL or other coded as 0; χ^2= 7.99, *df* = 1, *p* = .01) and college affiliations (College of Engineering, College of Science and Mathematics, and other; χ^2= 9.8, *df* = 2, *p* = .01): 84% of the students in the Early Group were doctoral students while only 50% of the students in the Delayed Group were doctoral students; 92% of the students in the Early Group were from College of Science and Mathematics while only 58% of the students in the Delayed Group were from College of Science and Mathematics. Given the small sample sizes in each of the categories, I decided not to control for these two variables. A t-test also revealed that the participants in the Early Group was older than the participants in the Delayed Group (26.05 vs. 24.32, *t* (57) = -2.30, *p* = .03). The age difference might be due to the fact that there were more doctoral students in the Early Group than in the Delayed Group, who tended to be older than non-doctoral level students. Because age was not related to any of the variables of interest, I decided not to control for age in the rest of the analyses.

Two weeks after the fall semester started, I measured all participants' academic adjustment, interaction adjustment, and perceived stress. No significant group difference was found on these variables comparing Delayed Group with Early Group: For academic adjustment, 4.51 vs. 4.16, *t* (57) = 1.10, *p* = .28; for interaction adjustment, 3.90 vs. 3.70, *t* (57) = .55, *p* = .59; and for perceived stress, 1.56 vs. 1.54, *t* (57) = .16, *p* = .87. I also measured self-rated English proficiency right before the training for the 2013 cohort. Results showed that there was no difference comparing Delayed Group with Early Group, 3.98 vs. 4.52, *t* (57) = -1.90, *p* = .06.

Training Effect on Utility Perceptions

The descriptive statistics including means, standard deviations, and correlations among variables are presented in Table 2. Hypothesis 1 predicted that Delayed Group participants should report a higher level of utility perceptions than Early Group participants at the end of the

ROPES training. Supporting Hypothesis 1, a t-test indicated that the Delayed Group had a significantly higher level of utility perceptions than the Early Group (4.82 vs. 4.21, $t = 2.54$, Cohen's $d = .70$, $p < .05$). As mentioned earlier, for the 2013 cohort, I measured participants' English ability right before the ROPES training, to examine whether this variable might confound the timing of delivery effect. I conducted an ANCOVA for the 2013 cohort data with perceived English proficiency as a covariant. Results showed that even controlling for perceived English proficiency, the timing of delivery effect on utility perceptions remained significant: $F(1, 26) = 9.00$, $p < .01$. This result suggests that perceived English proficiency cannot fully account for the significant group difference in utility perceptions. Therefore, Hypothesis 1 received strong support.

Training Effect on Retention of ROPES knowledge

All ANOVA results were summarized in Table 3. Hypothesis 2 predicted that Delayed Group participants should have higher retention of ROPES knowledge than Early Group participants. Retention of ROPES knowledge was measured by two quizzes at follow-up 2 (approximately 4 months after the fall semester started) and follow-up 3 (approximately 8 months after the fall semester started).

A 2 (condition) × 2 (time) mixed-design ANOVA yielded a significant main effect of time ($F(1, 52) = 11.67$, $p < .01$), a non-significant main effect of condition ($F(1, 52) = 1.85$, $p = .18$), and a non-significant condition × time interaction ($F(1, 52) = .53$, $p = .48$). Participants in both conditions reported decreased retention of ROPES knowledge over time (10.90 vs. 9.91), but there was no evidence that the Delayed Group participants retained more know ROPES knowledge than the Early Group over time (Figure 2). Note that this comparison actually favored

the Delayed Group, because the time intervals between the ROPES training and follow-ups were shorter for the Delayed Group. As such, hypothesis 2 was not supported.

Training Effect on Behaviors

Hypothesis 3 predicted that participants in the Delayed Group should engage in more coping behaviors taught in the ROPES training than participants in the Early Group. In the present study, sojourners' behaviors were rated by their friends.

A 2 (condition) × 2 (time) mixed-design ANOVA yielded a significant main effect of time (F (1, 52) = 13.13, $p < .01$), a non-significant main effect of condition (F (1, 52) = 2.20, $p = .14$), and a non-significant condition × time interaction (F (1, 52) = 3.18, $p = .08$). Results showed that participants in both conditions lowered their coping behaviors over time from follow-up 2 to follow-up 3 (3.15 vs. 2.90; see Figure 3). The decay of coping behaviors for the Delayed Group was slightly faster than that for the Early Group. Thus, Hypothesis 3 was not supported. `

Training Effect on Stress

Hypothesis 4 stated that participants in the Delayed Group should experience lower stress over time than participants in the Early Group. I measured their stress levels four times— about 2 weeks after semester started (i.e., baseline survey for the Early Group and controlled baseline survey for the Delayed Group); about 2 months after semester started (i.e., first follow-up survey for the Early Group and baseline survey for the Delayed Group); about 4 months after fall semester started (i.e., follow-up 2); and about 8 months after fall semester started (i.e., follow-up 3 survey).

A 2 (condition) × 4 (time) mixed-design ANOVA with a Greenhourse-Geisser correction yielded non-significant main effect on time (F (2.47, 128.21) = .74, $p = .53$), non-significant

main effect on condition (F (1, 52) = .07, p = .79), and non-significant time × condition interaction effect (F (2.47, 128.21) = .58, p = .63). Figure 4 showed the stress of participants in the Delayed Group decreased steadily and slowly, whereas the stress of the participants in the Early Group fluctuated quite a bit over time. Thus, Hypothesis 4 was not supported.

Training Effect on Cross-cultural Adjustment

Hypothesis 5 predicted that participants in the Delayed Group should report higher levels of cross-cultural adjustment over time than participants in the Early Group. Adjustment was measured both by the participants themselves four times and by their appointed peers two times. Self-rated and peer-rated adjustment were divided into two parts—academic adjustment and interaction adjustment.

For self-reported academic adjustment, a 2 (condition) by 4 (time) mixed-design ANOVA with a Greenhourse-Geisser correction yielded a significant main effect for time (F (2.53, 131.67) = 21.08, p < .01), a non-significant main effect for condition (F (1, 52) = .14, p =.71) and non-significant interaction effect (F (2.53, 131.67) = 1.89, p = .13). There was a significant increase from time 1 to time 2 (4.33 vs. 4.78, p < .01), and from time 2 to time 3 (4.78 vs. 5.16, p < .05), but not from time 3 to time 4 (5.16 vs. 5.29, p = .25). Surprisingly, for the Delayed Group, there was a significant increase from time 1 to time 2 (4.50 vs. 4.93, p < .05), but not from time 2 to time 3 (4.93 vs. 5.12, p = .51) or from time 3 to time 4 (5.12 vs. 5.21, p = .67). Since the Delayed Group received the ROPES training right after the time 2 measures, the huge increase from time 1 to time 2 for the Delayed group was quite suspicious. Details see Figure 5 and I will return to this point later.

For self-reported interaction adjustment, a similar pattern was observed. That is, there was a significant main effect for time (F (2.57, 133.61) = 19.28, p < .01), a non-significant main

effect for condition (F (1, 52) = .78, p =.38), and a non-significant interaction effect (F (2.57, 133.61) = 2.30, p = .08). There was significant increase from time 1 to time 2 (3.74 vs. 4.39, p < .01), and from time 2 to time 3 (4.39 vs. 4.76, p < .01), but not from time 3 to time 4 (4.76 vs. 4.77, p = .88). Again, for the Delayed Group, there was a significant increase from time 1 to time 2 (3.81 vs. 4.75, p < .05), but not from time 2 to time 3 (4.75 vs. 4.86, p = .61) or from time 3 to time 4 (4.86 vs. 4.74, p = .48). Since the Delayed Group received the ROPES training right after the time 2 measures, the huge increase from time 1 to time 2 for the Delayed group was quite suspicious (Figure 6).

For peer-rated academic adjustment, the 2 × 2 ANOVA yielded a non-significant main effect on time (F (1, 52) = 2.34, p= .13), non-significant effect on condition (F (1, 52) = 3.38, p = .07), and non-significant effect on interaction (F (1, 52) = 1.93, p = .17; see Figure 7). For peer-rate interaction adjustment, the 2 × 2 ANOVA determined significant main effect on time (F (1, 52) = 6.58, p < .05), non-significant main effect on condition (F (1, 52) = .73, p= .40), and non-significant interaction effect (F (1, 52) = 1.3, p= .26). Results showed that for both groups, their interaction adjustment decreased significantly over time (5.47 to 5.12, p < .05; see Figure 8). Hypothesis 5 was not supported.

Mediation effect

Hypothesis 6 predicted that perceived utility of ROPES should mediate the relationships between timing of delivery and various training outcomes (knowledge retention, behavioral changes, sojourner stress, and cross-cultural adjustment) using the bootstrapping method. I used bias-corrected confidence to estimate (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2004) and obtained the 95% confidence interval of the indirect effects with 5000 bootstrap resamples (Preacher & Hayes, 2008). Results showed significant mediating role of

perceived utility in the relationship between timing of delivery and interaction cross-cultural adjustment at follow-up 2 (B = .15; CI = .06 to .67), academic cross-cultural adjustment at follow-up 3 (B=.11; CI=.05 to .52), and interaction cross-cultural adjustment at follow-up 3 (B=.12; CI = .03 to .53). Given that there was no significant direct effect of timing of delivery on cross-cultural adjustment, the observed mediation effects should be more appropriately interpreted as indirect effects. No significant mediation effects of perceived utility on treatments – other criteria (i.e., knowledge retention, coping behaviors, and stress) relationships were found. Hypothesis 6 was partially supported.

Discussion

With the rapid increase of interactions across different cultures, the population of sojourners and their adjustment issues have attracted the attention of researchers (Caligiuri et al., 2001; Takeuchi et al., 2005). Cross-cultural training had been suggested as an effective tool in facilitating cross-cultural transition (Black & Mendenhall, 1990; Landis & Brislin, 1983; Kealey & Protheroe, 1996). There have been large numbers of studies investigating the effectiveness of different types of cross-cultural training (e.g., Caligiuri & Philips, 2003; Brislin et al., 1983; Brislin et al., 1986; Cushner, 1989; Fan & Wanous, 2008); however, contextual factors such as timing of delivery, cultural toughness, and training duration have been understudied (Littrell et al., 2006).

The current study focuses on the timing of delivery issue in the context of ROPES, and investigates when to deliver the CCT could make it more effective. The relative effectiveness of the ROPES training, one delivered 2 weeks after the fall semester started and the other delivered 2 months after the fall semester started, was compared. I measured all four levels of training criterion—reaction, learning, behavior, and results, to test the timing of delivery effect. For the

first level of criterion—utility perceptions, participants in the Delayed Group perceived the ROPES training more useful than the Early Group. However, for the learning (i.e., knowledge retention), behavior (peer-rated coping behavior), and results (stress and adjustment) levels, I did not find any significant group differences between the Early Group and the Delayed Group. In other words, although delivering the training at a later time yielded higher levels of utility perceptions, the timing of delivery did not show direct effect on other levels of training outcomes. On the other hand, however, mediation analysis results showed that utility perceptions mediated the relationship between timing of delivery and academic and interaction adjustment. Thus, the timing of delivery did not affect cross-cultural adjustment directly, but had an indirect effect through utility perceptions.

The above findings suggested that there might be multiple, potentially opposing mechanisms underlying the relationship between the treatment manipulation (different timing of delivery) and cross-cultural adjustment such that different effects offset each other. For instance, one possible mechanism that might have favored the Early Group is that Early Group participants might have a higher level of perceived organizational support than Delayed Group participants, because they received the training at the very beginning of the semester while Delayed Group participants did not receive the training until the middle of the semester. As such, Early Group participants might have interpreted that the university provides more care for them. Higher perceived organizational support, in turn, may lead to better cross-cultural adjustment of Early Group participants, relative to Delayed Group participants (Earnest, Allen, & Landis, 2011).

Another possible mechanism that might have favored the Early Group is different levels of self-efficacy at the time of training. Specifically, when sojourners transit from ethnocentric

phase to culture-shock phase, they would encounter some difficulties cognitively and behaviorally, and this might reduce their confidence in their ability to handle various adjustment tasks (Selmer et al., 1998). Thus, when Early Group participants received the ROPES training at the beginning of the fall semester, they had yet to experience many difficulties in the new culture, and thus should have a quite high level of self-efficacy. In contrast, when Delayed Group participants received the ROPES training two months into the fall semester, they have been exposed to organizational and cultural realities, have experienced many difficulties, and thus should have a relatively low self-efficacy. Fan and Lai (2014) argued that the ROPES training required a high level of psychological resources (i.e., high self-efficacy) on the part of trainees in order for them to benefit, and ROPES should benefit participants with a high self-efficacy more than trainees with a low self-efficacy. Fan and Lai then presented empirical evidence that supported their argument. Therefore, due to different levels of self-efficacy at the time of ROPES training, Early Group participants might have benefitted more from the ROPES training than Delayed Group participants.

The nature of the samples and the research design in the current study might also be responsible for the above unexpected results as well. For instance, students registered one of the two INTL 1820 sessions based on their time schedule, and it was impossible to randomly assign them into treatment conditions. A careful examination of demographic variables revealed that (a) for both 2012 and 2013 cohorts, the Delayed Groups (n = 12 for the 2012 cohort and n = 12 for 2013 cohort) had a smaller class size than the Early Groups (n = 20 for the 2012 cohort and n = 17 for the 2013 cohort); (b) there were less doctoral students in the Delayed Groups (33% for 2012 cohort and 66% for 2013 cohort) than the Early Groups (80% for 2012 cohort and 88% for 2013 cohort); (c) there were less students from College of Science and Mathematics in the

Delayed Group (50% for 2012 cohort and 66% for 2013 cohort) than in the Early Groups (90% for 2012 cohort and 94% for 2013 cohort); and (d) participants in the Delayed Groups (23.5 for 2012 cohort and 25 for 2013 cohort) were younger than participants in the Early Groups (26 for 2012 cohort and 26.12 for 2013 cohort).

Participants' cohort size, their majors, degree pursued (Master vs. doctoral), and their ages could have made a difference on their adjustment processes. For instance, there could be more communication and interactions among students in a smaller-sized class. This might explain why Delayed Group participants reported a substantial increase from time 1 (2 weeks after semester started) to time 2 (2 months after semester started, right before the training) even without receiving the training. Such an early increase in adjustment made it difficult to show the benefits of ROPES training on Delayed Group participants. Further, the Early Group had a higher percentage of doctoral students than the Delayed Group, who might be more mature and have higher motivation to learn from the ROPES training, which in turn, might benefit more from the training.

In addition, due to the nature of the design of this study, the Early Group might not be a real "Early Group". Participants in the Early Group received the training about two weeks after the fall semester started; however, international students were required to arrive in U.S. two weeks before the fall semester started; therefore, participants in the Early Group had been in the U.S. for at least one month when they received the ROPES training. During the one month before they received the ROPES training, participants could already have had some useful experience to appreciate and absorb the knowledge in the training. Thus, the Early Group in this case might not be a true "Early Group", but was some kind of "Delayed Group" already. To better understand the process of Early Group participants, a true "Early Group" is needed.

Furthermore, certain level of adjustment score might already reach the highest limit for the current sample. Even the scale of academic and interaction adjustment measure is from 1 (*not well adjusted at all*) to 7 (*very well adjusted*), in Fan and Wanous's (2008) study, the average academic/interaction adjustment score for the fourth-wave follow-up at 9-month post-entry (which was the highest) was only 4.21 (*s.d.* = .94) and 3.38 (*s.d.* = 1.24) respectively; in Gong and Fan's (2006) study, the self-rated average academic/interaction adjustment was 5.18 (*s.d.* = 1.00) and 5.04 (*s.d.* = 1.49) respectively; and in the current study, the academic/interaction adjustment score for last-wave was 5.32 (*s.d.* = 1.00) and 4.81 (*s.d.* = 1.14). These previous findings, combined with studies showing that individuals with East-Asian heritage tend to be more moderate and less likely to respond on extreme options in questionnaire responses (Hamamura, Heine, & Paulhus, 2008), suggest that at least during the initial entry period, a score around 5 may represent the ceiling on this cross-cultural adjustment measure. In the current sample, the Delayed Group participants reported 4.97 (*s.d.* = 1.32) and 4.90 (*s.d.* = 1.59) on academic adjustment and interaction adjustment right before the ROPES training (that is, 2 months after the fall semester had started). Therefore, it seemed that Delayed Group participants reached the ceiling very fast—before they received the ROPES training, suggesting that there might not be much more room for them to increase after receiving the training.

Contributions, Limitations and Future Research Directions

The present study proposed and tested whether and how timing of delivery influenced ROPES effectiveness, which responded to the call for more research on contextual factors in CCT (Littrell et al., 2006). I argued conceptually for a timing of delivery effect based on previous domestic and cross-cultural newcomer research and empirically tested this effect.

Though only the utility perceptions showed the timing of delivery effect, it is a good starting point and future studies should continue to examine this important effect.

Another contribution of this study is that I systematically reviewed the existing cross-cultural trainings and proposed with a new taxonomy with more theoretical based categories. Previous taxonomies have a common weakness— failure to distinguish training focus and training method. The proposed taxonomy specifies a training focus dimension (affect-focused, cognition-focused, behavior-focused, and stress-focused) and a training method dimension (e.g., lecture, cultural assimilator, cognitive-behavior modification, role play).

The design of this study, except for the quasi-experiment nature, is a rigorous design with longitudinal follow-ups, and multi-source data. I used two years of cohort data to boost the sample size and used a special group of international student sample. The participants in the present study were not common international students, but should be considered as employees because they were employed by the university as graduate teaching assistant (GTA) and they get paid by their GTA work. I also did a manipulation check on participants' English ability and understanding perception right before and right after they received the ROPES training because participants' better understanding due to their increase in the English ability could confound the timing of delivery effect. Overall, the present study investigated an important issue by making a comprehensive summary of previous evidence and theories, and by conducting a rigorous empirical study.

This study has several limitations. The first limitation is that there was no control group. Due to the nature of the INTL class, it was not possible to arrange for a third group as control group. Therefore, the inclusion of only two treatment groups without a real control group made it

impossible to tease apart the effect due to natural adjustment process (i.e., the maturation effect) and the effect due to the manipulation.

The second limitation is the modest sample size (n = 61). With a larger sample, it would have been possible to have the power to detect some group differences, and to test for subgroup differences. For instance, I could have tested how degree participants pursued would impact the timing of delivery effect.

The third limitation of this study concerns external validity. Given the nature of the current sample—international graduate teaching assistant, and the specific context of the current study—a ROPES training context, the timing of delivery effect might not generalize to other populations and other newcomer training contexts. Therefore, further replications using other newcomer populations and other training contexts are needed.

I urge future researchers to continue to investigate the time of delivery effect in CCT, because it is crucial to make CCT more effective by implementing the training at the "right time". As I have argued, even the Delayed Group participants perceived the training as more useful and had an indirect effect through utility perceptions to adjustment, other mechanisms might counteract this effect—for example, the perceived organizational support and the social self-efficacy. If this is the case, future researchers should consider increasing their perceptions on organizational support and boosting their self-efficacy while delivering the cross-cultural training later than normally delivered. In addition, testing other moderators (e.g, individual difference) is recommended, because to deliver the training at a certain time point might work better for some individuals than others. Moreover, it is important to generalize the timing of delivery effect to other kind of training under newcomer contexts.

The current study has important practical implications. The purpose of CCT was to help sojourners fit in the new culture better and faster. Practitioners in large multinational corporations and educational systems are more and more aware of the importance of CCT. However, to maximize the benefits of CCT on sojourners, practitioners should implement the training more carefully and pay more attention on contextual factors (e.g, timing of deliver). To deliver the CCT pre-departure and right after arrival becomes a convention and the current empirical study provides an innovative suggestion of delivering the training like ROPES later than practitioners normally do to better help sojourners. Practitioners could maximize the benefits of CCT by deliver the training at the proper time, which in turn, will better facilitate sojourners' adjustment process and reduce the possible cost of early returns for both organizations and sojourners themselves.

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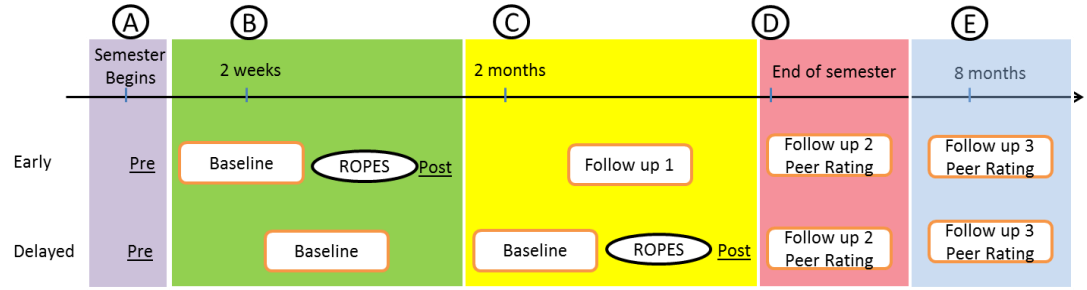
Figure 1

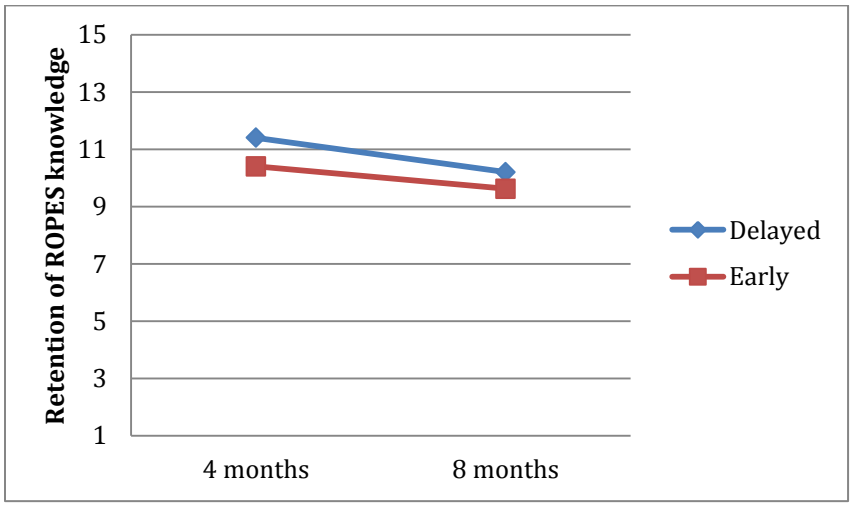
Procedure of the present study



Note. There are two conditions—Early Group and Delayed Group. There are seven time point A, B, C, D, E, F and G.

Figure 2

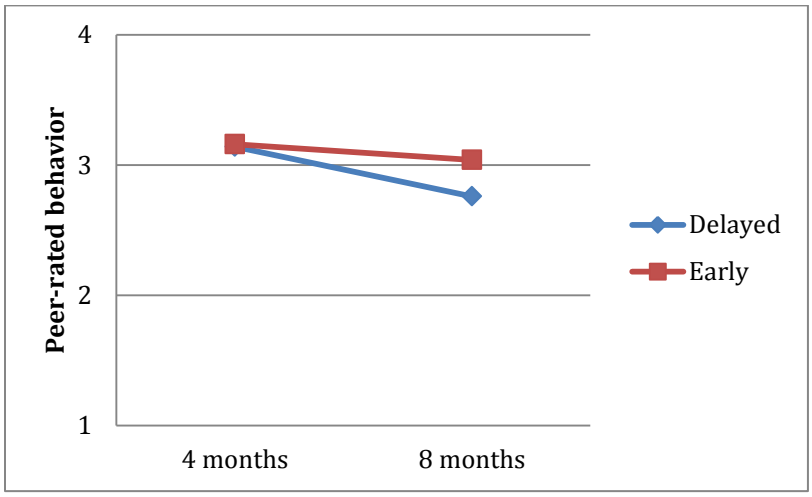
Retention of ROPES knowledge of Delayed Group and Early Group for follow-up2 & 3



Note. There were two time points measure for retention of ROPES knowledge; time 1 was about 4 months after semester began (follow-up 2 measure for both groups); time 3 was about 8 months after fall semester began (follow-up 3 measure for both groups).

Figure 3

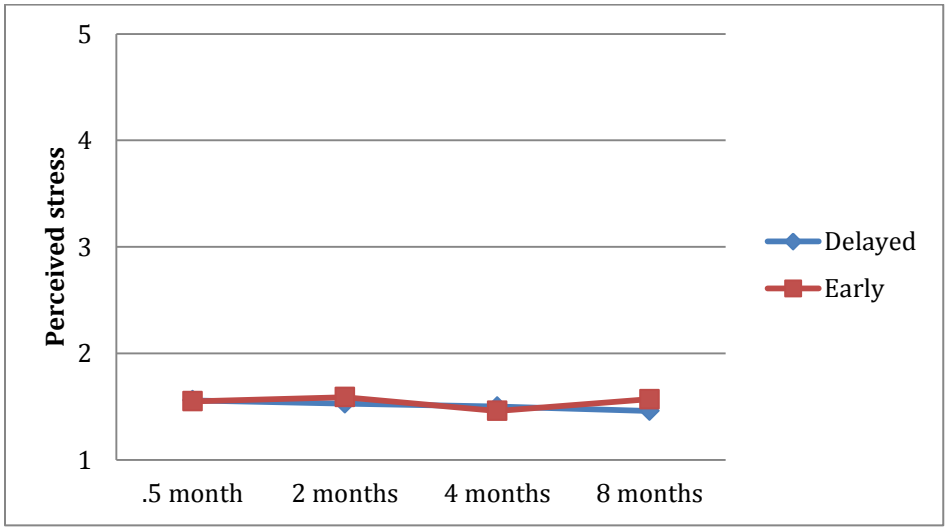
Peer-rated behavior of Delayed Group and Early Group for follow-up2 and follow-up3



Note. There were two time points measure for peer-rated behavior; time 1 was about 4 months after semester began (follow-up 2 measure for both groups); time 3 was about 8 months after fall semester began (follow-up 3 measure for both groups).

Figure 4

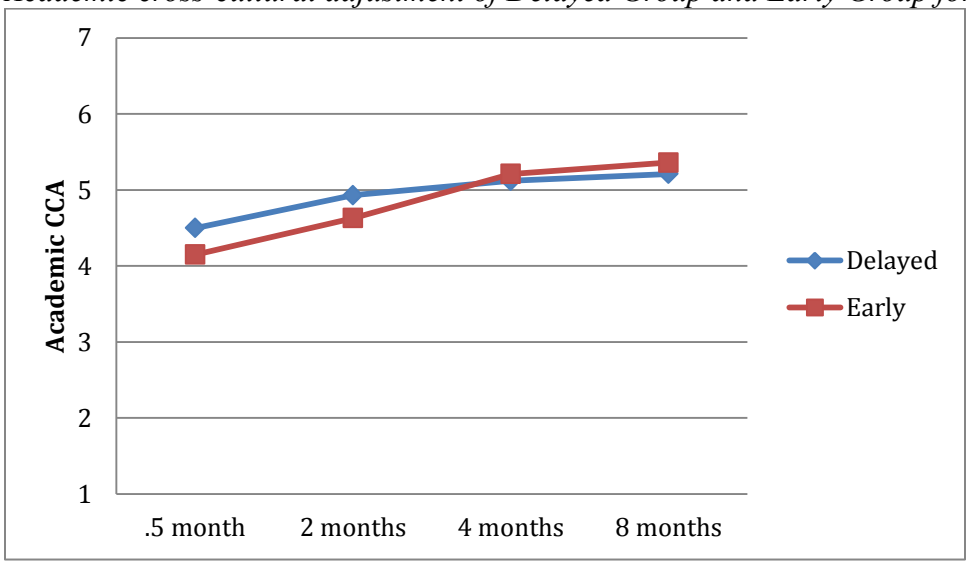
Perceived stress of Delayed Group and Early Group for same time measure



Note. There were four time points measure for perceived stress; time 1 was 2 weeks after semester began (the baseline measure for Early Group and controlled baseline measure for the Delayed group); time 2 was 2 months after semester began (follow-up1 for Early Group and baseline measure for Delayed Group); time 3 was about 4 months after semester began (follow-up 2 for both group); time 4 was about 8 months after fall semester began (follow-up 3 for both group).

Figure 5

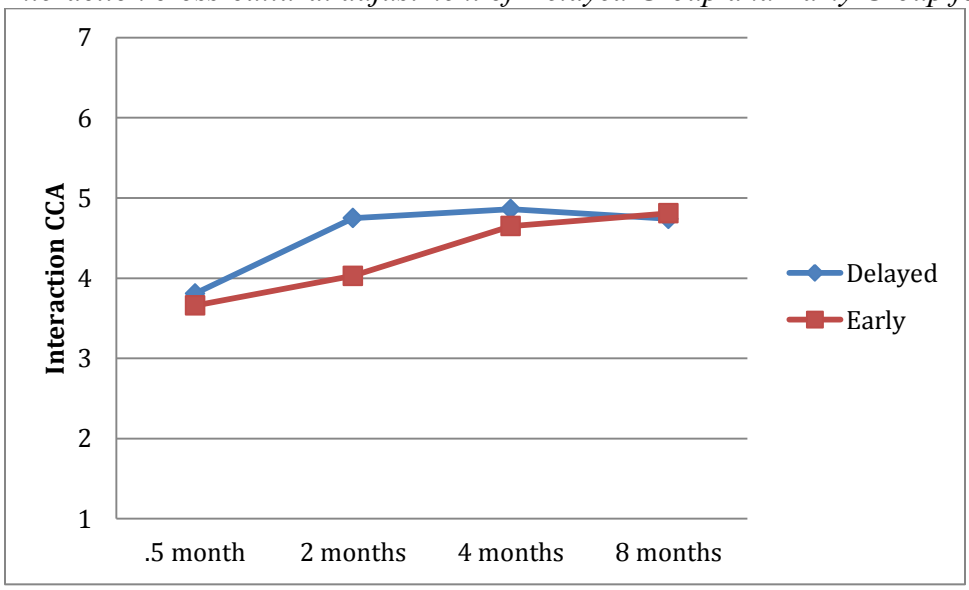
Academic cross-cultural adjustment of Delayed Group and Early Group for same time measure



Note. There were four time points measure for academic cross-cultural adjustment, same as perceived stress measure.

Figure 6

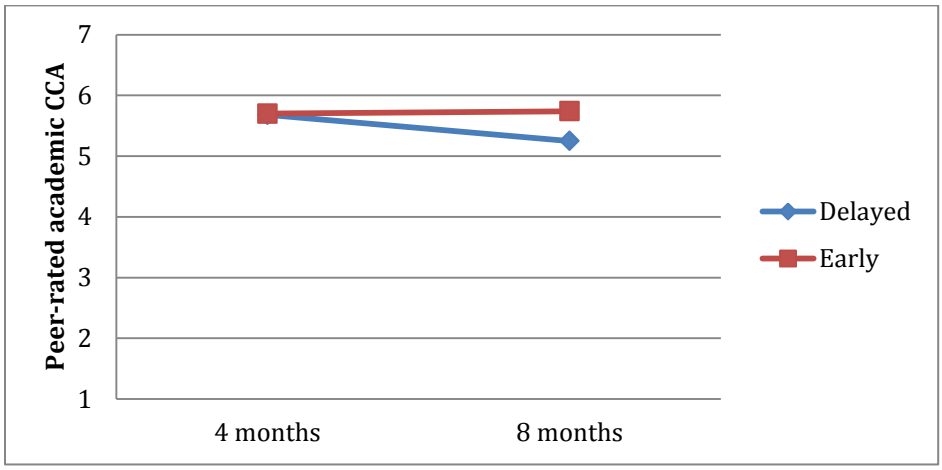
Interaction cross-cultural adjustment of Delayed Group and Early Group for same time measure



Note. There were four time points measure for interaction cross-cultural adjustment, same as perceived stress measure

Figure 7

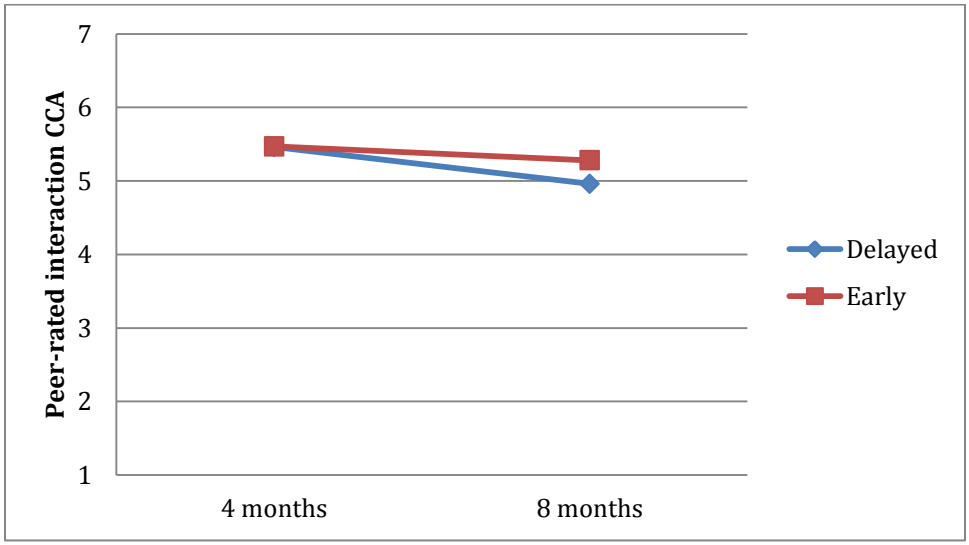
Peer-rated academic CCA of Delayed Group and Early Group for follow-up2 and follow-up3



Note. There were two time points measure for peer-rated academic cross-cultural adjustment; time 1 was about 4 months after semester began (follow-up 2 measure for both groups); time 3 was about 8 months after fall semester began (follow-up 3 measure for both groups).

Figure 8

Peer-rated interaction CCA of Delayed Group and Early Group for follow-up2 and follow-up3



Note. There were two time points measure for peer-rated behavior; time 1 was about 4 months after semester began (follow-up 2 measure for both groups); time 3 was about 8 months after fall semester began (follow-up 3 measure for both groups).

Table 1

A taxonomy of cross-cultural training methods

		Info-focused methods			Active learning-focused methods				
		Lecture/ video /reading	Cultural assimilator	Cognitive-behavior modification	Discussion	Role play	Simulation	On-the -job	Field trip
CCT focus	Examples								
Affect									
e.g., Values, attitudes	Value self-confrontation	√							
Cognition									
e.g., Expectation	Realistic job preview	√			√			√	
e.g., Attributions	Attribution training	√	√	√	√				
e.g., Knowledge	Culture self-awareness training	√			√	√			
e.g., Language	Language training	√							
Behavior									
e.g., Simulated behaviors	Experiential training					√	√		√
e.g., Behaviors in real-world	Interaction training							√	
Stress	Stress inoculation	√			√				

Table 2

Means, Standard Deviations, and Correlations for Study Variables

	Early	Delayed	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Condi	0	1	–																			
2. IUP	4.21(.99)	4.83	**.32**	.92																		
3. ACCA0	4.16 (1.14)	4.51 (1.29)	.15	**.33**	.93																	
4. ICCA0	3.70 (1.30)	3.90 (1.47)	.07	**.31**	**.61**	.95																
5. PSS0	3.46 (.48)	3.44 (.57)	.02	-.12	.20	**.40**	.81															
6. ACCA1	4.71 (1.08)	4.97 (1.32)	.11	.16	**.76**	**.68**	**.32**	.93														
7. ICCA1	4.14 (1.23)	4.90 (1.59)	**.26**	**.34**	**.50**	**.57**	.14	**.65**	.96													
8. PSS1	3.42 (.40)	3.49 (.59)	.06	.01	**.39**	**.56**	**.69**	**.51**	**.40**	.79												
9. ACCA2	5.23 (1.00)	5.14 (1.25)	-.04	.22	**.66**	**.43**	**.29**	**.58**	**.53**	**.39**	.96											
10. ICCA2	4.69 (.91)	4.89 (1.21)	.10	**.47**	**.49**	**.55**	.17	**.49**	**.74**	**.40**	**.69**	.92										
11. PSS2	3.54 (.43)	3.47 (.74)	-.06	.15	.24	**.47**	**.57**	**.42**	**.38**	**.62**	**.43**	**.48**	.82									
12. Q2	10.3 (2.47)	11.38 (1.82)	.23	.13	-.05	-.04	.02	.00	.06	.05	-.11	-.17	.08	–								
13. PB2	3.16 (.40)	3.16 (.57)	-.00	.01	**.28**	.18	.11	**.33**	**.30**	.07	.25	.21	.13	-.02	.87							
14. PA2	5.60 (.73)	5.61 (.81)	.01	-.05	**.34**	.10	.15	**.35**	**.30**	.04	.26	.16	.07	-.05	**.67**	.94						
15. ACCA3	5.35 (.80)	5.25 (1.30)	-.05	**.30**	**.55**	**.43**	**.33**	**.57**	**.54**	**.41**	**.75**	**.62**	**.53**	-.05	**.33**	.21	.95					
16. ICCA3	4.80 (.95)	4.83 (1.42)	.01	**.28**	**.35**	**.51**	.25	**.42**	**.64**	**.34**	**.54**	**.70**	**.47**	-.01	**.37**	.16	**.72**	.95				
17. PSS3	3.43 (.45)	3.55 (.65)	.10	.13	**.29**	**.53**	**.73**	**.38**	**.41**	**.74**	**.33**	**.39**	**.49**	.23	.18	.13	**.44**	**.43**	.85			
18. Q3	9.69 (2.15)	10.10 (2.68)	.09	.04	-.17	**-.26**	.04	-.17	-.06	-.06	-.18	-.18	-.09	**.61**	-.21	-.20	-.09	-.08	.15	–		
19. PB3	3.00 (.37)	2.63 (.74)	**-.32**	**-.30**	-.05	-.12	.09	-.09	-.20	-.10	-.11	-.01	.12	.16	**.34**	.09	.10	.18	**.31**	.04	.88	
20. PA3	5.47 (.64)	5.12 (.93)	-.22	**-.34**	-.07	-.10	.25	.06	-.07	.09	-.04	-.02	.06	.16	.09	**.33**	-.05	-.00	**.27**	.08	**.61**	.93

Note. Numbers on the diagonal are coefficient alphas for various scales. For bold correlation coefficients, *ps* < .05, two-tailed. IUP=Immediately utility perception, scale is from 1 to 6; ACCA=Academic Cross-cultural adjustment, scale is from 1 to 7; ICCA=interaction Cross-cultural adjustment, scale is from 1 to 7; PSS1=Perceived Stress Scale, scale is from 1 to 5; PB=Peer-rated behavior, scale is from 1 to 4; PA=Peer-rated adjustment, scale is from 1 to 7; Q=quiz, scores are from 0 to 15; 0=two weeks after semester began (baseline survey for Early Group and controlled baseline survey for Delayed Group); 1=2 months after semester began (first follow-up for Early Group and baseline survey for Delayed Group); 2=4 months after semester began (second follow-up for both group); 3=8 months after semester began (third follow-up for both condition).

Table 3

Analysis of Variance with Repeated Measures for Dependent Variables

Source	*df*	*MS*	*F*
Knowledge retention			
Between			
Condition (A)	1	15.82	1.85
Error	52	2.11	
Within			
Time (B)	1	24.67	11.67**
A x B	1	1.11	.53
Error	52	8.54	
Coping Behavior			
Between			
A	1	.58	2.2
Error	52	.26	
Within			
B	1	1.66	13.13**
A x B	1	.40	3.18
Error	52	.13	
Stress			
Between			
A	1	.06	.07
Error	52	.82	
Within			
B	2.46	.09	.74
A x B	2.46	.07	.58
Error	128.20	.13	
ACCA (self)			
Between			
A	1	.51	.14
Error	52	3.73	
Within			
B	2.53	11.16	21.08**
A x B	2.53	1.00	1.89
Error	131.67	.53	
ICCA (self)			
Between			
A	1	3.25	.78
Error	52	4.18	
Within			
B	2.57	13.80	19.28**
A x B	2.57	1.65	2.30
Error	133.61	.72	
ACCA (peer)			
Between			
A	1	1.59	1.93
Error	52	.82	
Within			
B	1	.99	2.34
A x B	1	1.43	3.38
Error	52	.42	
ICCA (peer)			
Between			
A	1	.71	.73
Error	52	.98	
Within			
B	1	3.13	6.58*
A x B	1	.62	1.30
Error	52	.48	

Note. *$p < .05$; **$p < .01$. ACCA=academic cross-cultural adjustment; ICCA=interaction cross-cultural adjustment

Appendix 1
MEASURES
Demographic Information

1. Student ID:_____ Degree Pursued (doctor or master):_____

   Department: _____ Auburn Email: _____

   Home phone/cell phone: _____

2. Country of Origin: _____ Age: _____ Gender: _____

   How long have you been in the U.S.? _____ (months)

3. How much previous international experience do you have other than this trip?
   (a) None (b) less than 3 months (c) 3-6 months (d) more than 6 months

4. Your GRE Verbal score: _____ Your undergraduate GPA: _____

5. What kind of financial support do you currently have? (Check one)

   _____ Fellowship from AUBURN UNIVERSITY

   _____ Teaching/Research Assistantship from AUBURN UNIVERSITY

   _____ Tuition scholarship from AUBURN UNIVERSITY

   _____ Other scholarships

   _____ Self-supported

6. Do you live on campus or off campus? (Check one)
   ___ On campus ___ Off campus ___ Not decided yet

7. Please rate your English ability using the following 7-point scale. Write the number that best describes your English ability on the line before the item.

   1 2 3 4 5 6 7

   |_____|_____|_____|_____|_____|_____|

   Very poor Average Extremely good

   _____1. How good are you at understanding spoken English?

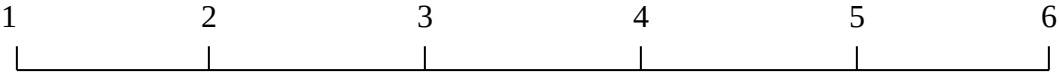
   _____2. How good is your English conversation ability?

   _____3. Rate your ability to write papers in English.

   _____4. Rate your ability to participate in class discussion in English.

Utility Perceptions

The following questions ask you how helpful/useful do you think the ROPES training will be in facilitating your adjustment here at Auburn. Please write the number that best describes your perception on the line before each question, using the following key:



Not helpful at all	Somewhat helpful	Moderately helpful	Quite a bit helpful	Very helpful	Extremely helpful

_____ 1. How helpful do you think the ROPES training will be in your adjustment to academic life here at Auburn University?

_____ 2. How helpful do you think the ROPES training will be in improving your English?

_____ 3. How helpful do you think the ROPES training will be in keeping your legal status in the U.S.?

_____ 4. How helpful do you think the ROPES training will be in your adjustment to social interaction with Americans?

_____ 5. How helpful do you think the ROPES training will be in your adjustment to general living here?

_____ 6. How helpful, <u>overall</u>, do you think the ROPES training will be to you in making a better adjustment here?

Knowledge Retention

Instructions: We are interested in knowing how much you still remember the content of the ROPES workshop. Please answer the following questions based on what you have learned from the ROPES workshop. Try your best and complete this survey independently.

1. The ROPES workshop focused on two major difficulties that international students are likely to encounter during their first year in the U.S. What are they?

    a. _____

    b. _____

2. What are the two campus resources that the ROPES workshop mentioned that may help improve your English?

    a. _____

    b. _____

3. When international students first come to the U.S., most of them tend to have overly _____ (positive / negative) expectations about their English improvement speed than the reality. (Circle one.)

4. The ROPES workshop mentioned several mindsets (irrational thoughts) that prevent international students from speaking up in classroom discussions. Can you mention two of them?

    a. _____

    b. _____

5. When international students first come to the U.S., American people they meet seem very nice, excited about seeing them, and interested in their culture. Does that mean these Americans are truly interested in developing friendship with international students?

    _____ (Yes / No). (Circle one.)

6. The ROPES workshop mentioned three signs that may indicate that an American is truly intended to develop friendship with you? What are they?

a. _____

b. _____

c. _____

7. The ROPES workshop mentioned that _____ (Asian/American) culture is like a peach, whereas _____ (Asian/ American) culture is like a coconut. (Circle one for each blank.)

8. When your relationship with an American goes wrong, what are the two strategies the ROPES workshop recommended to address it?

a. _____

b. _____

Coping Behaviors (peer-reported)

The following questions ask you to evaluate this person's behaviors.

_____ 1. How often does this person utilize various opportunities to practice his/her English?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 2. How often does this person speak up in classroom discussions?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 3. How often does this person use available resources to improve his/her English?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 4. How often does this person ask instructors questions during the class sessions when he/she does not understand the lecture?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 5. How much effort does this person put in improving his/her English proficiency?
(a) None (b) Some (c) Quite a bit of (d) An extreme amount of

_____ 6. How often does this person show initiative during interactions with Americans?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 7. How often does this person hang out with Americans?
(a) Never (b) Occasionally (c) Fairly often (d) Very often (e) Always

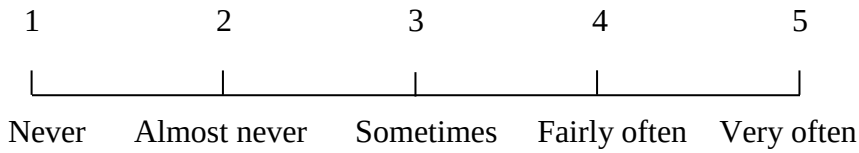
_____ 8. How often does this person hang out with friends from their own nation?
(a) Never (b) Occasionally (c) Fairly often (d) Very often

_____ 9. How much has the person exhibited behaviors similar to local Americans?
(a) None (b) Some (c) Quite a bit of (d) An extreme amount of

_____ 10. How much effort does this person put in making American friends?
(a) None (b) Some (c) Quite a bit of (d) An extreme amount of

Perceived Stress Scale

Instructions: The questions in this scale ask you about your feelings and thoughts **during the last 30 days**. In each case, please write the number that best describes how often you felt or thought a certain way.



During the last 30 days, how often have you

_____ 1. been upset because of something that happened unexpectedly?

_____ 2. felt that you were unable to control the important things in your life?

_____ 3. felt nervous and "stressed"?

_____ 4. felt confident about your ability to handle your personal problems?

_____ 5. felt that things were going your way? (“going your way” means “good things happen to you”)

_____ 6. found that you could not cope with all the things that you had to do?

_____ 7. been able to control irritations in your life?

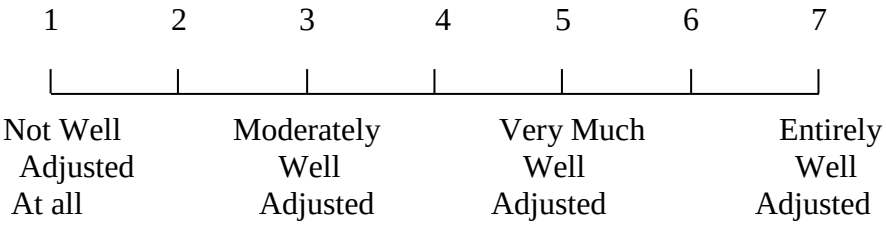
_____ 8. felt that you were on top of things? (“on top of things” means “in control of things”)

_____ 9. been angered because of things that were outside of your control?

_____ 10.felt difficulties were piling up so high that you could not overcome them?

Cross-Cultural Adjustment Scale (self-reported)

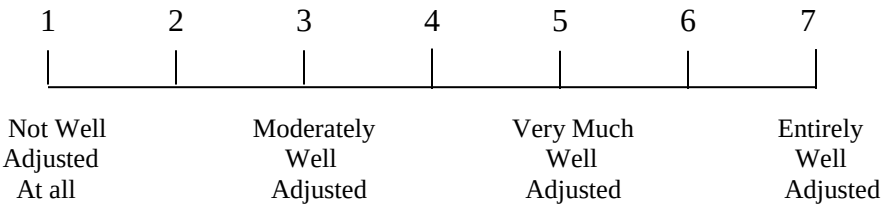
The questions below ask about how well adjusted you are in certain areas. Please write your answers in the line before each question using the following key.



1. ____How well adjusted are you to your schoolwork?
2. ____How well adjusted are you to the academic requirements here at Auburn University?
3. ____How well adjusted are you to working with American classmates?
4. ____How well adjusted are you to your instructors' teaching style?
5. ____How well adjusted are you to the instructional methods in Auburn University?
6. ____How well adjusted are you to interacting with your professors/instructors in academic activities?
7. ____ **Overall**, how well adjusted are you to your academic life at Auburn University?
8. ____How well adjusted are you to the food in Auburn?
9. ____How well adjusted are you to the transportation system in Auburn?
10. ____How well adjusted are you to the weather in Auburn?
11. ____How well adjusted are you to shopping in Auburn?
12. ____How well adjusted are you to the entertainment available in Auburn?
13. ____ **Overall**, how well adjusted are you to general living in Auburn?
14. ____How well adjusted are you to interpersonal relationships in America?
15. ____How well adjusted are you to being associated with Americans?
16. ____How well adjusted are you to talking to Americans?
17. ____How well adjusted are you to social gatherings with Americans?
18. ____ **Overall**, how well adjusted are you to interacting with Americans?

Cross-Cultural Adjustment Scale (peer-reported)

The following items ask you to evaluate this person's academic and social adjustment here in the U.S. Please use the following scale to answer questions.



_____ 1. How well adjusted is this person to his/her school work?

_____ 2. How well adjusted is this person to the academic requirements here at Auburn?

_____ 3. How well adjusted is this person to working with American classmates?

_____ 4. How well adjusted is this person to his/her instructors' teaching style?

_____ 5. How well adjusted is this person to the instructional methods in Auburn?

_____ 6. How well adjusted is this person to interacting with his/her professors/instructors in academic activities?

_____ 7. How well adjusted is this person to interpersonal relationships with Americans?

_____ 8. How well adjusted is this person to being associated with Americans?

_____ 9. How well adjusted is this person to talking to Americans?

_____ 10. How well adjusted is this person to social gatherings in America?

_____ 11. How well adjusted is this person to working with American classmates?

Appendix 2
CONSENT FORM

DEPARTMENT
OF PSYCHOLOGY

AUBURN UNIVERSITY
COLLEGE OF LIBERAL ARTS

Informed Consent Form

You are invited to participate in a research study to exam the effectiveness of a cross-cultural training program. The study is being conducted by Ning Hou, a graduate student at the Psychology Department of Auburn University, under the supervision of Dr. Jinyan Fan, an associate professor at the Psychology Department. You were selected as a possible participant because you are an international GTA and are age 19 or older.

Note that the cross-cultural training program is part of the course curriculum. This means all students at INTL 1820 will receive the training, which will take place at some time points during the fall semester, 2013. The specific time of training is included in your INTL 1820 course syllabus.

If you decide to participate in this research study, you will be asked to complete one survey before the training, one survey immediately after the training, and a couple of follow-up surveys. Your total time commitment will be approximately 2 hours.

To thank you for your time you will be offered extra credits at the English class INTL 1820 for the surveys in the fall semester, and 25 dollars for last survey, to be conducted in the spring semester. If you choose not to participate, but still would like to receive similar amount of extra credits from Mary, you will need to watch two videos about cross-culture issues and then write a reading comment for each video. Mary Diamond will make those two videos available to you.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the English as a second language program or your own department.

Your privacy will be protected. Any information obtained in connection with this study will remain confidential. Information obtained through your participation may be published in a professional journal or presented at a professional meeting.

Participant's initials_____

226 Thach Hall, Auburn, AL 36849-5214; Telephone: 334-844-4412; Fax: 334-844-4447
www.auburn.edu

If you have questions about this study, *please ask them now or* contact Jinyan Fan at jzf0007@auburn.edu or Ning Hou at nzh0008@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

Participant's signature Date

Printed Name

Investigator obtaining consent Date

Printed Name

Co-Investigator Date

Printed Name

The Auburn University Institutional Review Board has approved this document for use from 8/6/13 to 8/13/14 Protocol # 12-265 EP 1208