

This article was downloaded by: [Villanova University]

On: 13 October 2011, At: 13:17

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Public Relations Research

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/hpr20>

Anxiety and Uncertainty Management in an Intercultural Setting: The Impact on Organization-Public Relationships

Lan Ni ^a & Qi Wang ^b

^a Jack J. Valenti School of Communication, University of Houston

^b Department of Communication, Villanova University

Available online: 21 Jun 2011

To cite this article: Lan Ni & Qi Wang (2011): Anxiety and Uncertainty Management in an Intercultural Setting: The Impact on Organization-Public Relationships, *Journal of Public Relations Research*, 23:3, 269-301

To link to this article: <http://dx.doi.org/10.1080/1062726X.2011.582205>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Anxiety and Uncertainty Management in an Intercultural Setting: The Impact on Organization–Public Relationships

Lan Ni

Jack J. Valenti School of Communication, University of Houston

Qi Wang

Department of Communication, Villanova University

Past research has found that relationship cultivation strategies affect relationship outcomes. This study uses Gudykunst's (1985, 2005) Anxiety and Uncertainty Management (AUM) theory as the theoretical framework to examine whether the effects from cultivation strategies to relationship outcomes are mediated through anxiety and uncertainty management. An online survey solicitation was sent to a university's international student listserv, and 246 participants from 32 countries completed the questionnaires. Structural equation modeling was used to analyze the data. Results largely supported the hypotheses, and indicated that cultivation strategies have both direct and indirect effects on relational outcomes, partially mediated by uncertainty and anxiety.

As foreign investment and globalization have become a trend in recent decades, global and intercultural public relations have received increased attention in both research and practice (Sriramesh & Vercic, 2003; Tayeb, 2000). Most multinational entities face complexities in not only multiple regulatory areas governing products, but also in different languages and employees with diverse cultural background (Maddox, 1993). The

Correspondence should be sent to Lan Ni, Jack J. Valenti School of Communication, 101 Communication Building, Houston, TX 77204-3002. E-mail: lni@uh.edu

multicultural employee forces may have divergent perceptions about organizational issues and find it difficult to reach agreement, which make organizational function more challenging (Adler, 2002). Therefore, organizations need to be more sensitive to their members with diverse cultural backgrounds.

Although almost everyone entering an organization needs skills in anxiety and uncertainty management, these skills are crucial for members of diverse publics because these members experience uncertainty and anxiety not only at an interpersonal level (i.e., meeting new people) and organizational level (i.e., entering a new organization), but also at an intercultural level (i.e., experiencing a new culture). The Anxiety and Uncertainty Management (AUM) theory in intercultural communication (Gudykunst, 1985, 1993, 1995, 2005) links cultural-, organizational-, situational-, and individual-level variables to communication effectiveness and intercultural adjustment, mediated through uncertainty and anxiety management. The axioms in AUM regarding organizational-level variables to communication outcomes provide an especially useful theoretical framework in understanding relationship cultivation strategies and their effects on organization-public relationship (OPR) outcomes. As is reviewed and proposed later, the management of uncertainty and anxiety may mediate the links from some specific relationship cultivation strategies to specific OPR outcomes.

Currently, most research in OPR management has examined the following aspects: advocating for the shift to relationships and explicating the basic framework (e.g., Ferguson, 1984; Ledingham & Bruning, 2000); exploring the elements in relationship management models (e.g., types of relationships, Hung, 2005; development and refinement of the measurement of relationships, Huang, 2001; Jo, 2006; and antecedents and mediator of relationships, Kim, 2007); and connecting relationships with desired organizational outcomes such as the attributes or intentions of publics (Hall, 2006; Ki & Hon, 2007) and reputation (Yang, 2007). However, few studies have focused on why and how cultivation strategies lead to quality relationships in an organizational setting, nor provided systematic measurements for these strategies.¹

This study extends OPR research by incorporating AUM as a potential theoretical framework in explaining the underlying mechanism of how and why relationship cultivation strategies at the organizational level contribute to quality relationship outcomes, with a focus on multicultural organizations. It tests whether anxiety and uncertainty management mediates the connections between relationship cultivation strategies and relationship outcomes. The following sections review the literature in

¹Ki and Hon (2009) is the only exception in this regard.

OPR and AUM and propose eight hypotheses that explore the potential mediating effects of uncertainty and anxiety in OPR management. Next, the methods for the study are described, followed by the results of the research conducted. The final section of the article provides a discussion of the findings and their implications, limitations of the study, and directions for future research.

OPRS

A three-stage model of OPRs includes antecedents, cultivation strategies, and consequences of the relationship (e.g., J. E. Grunig & Huang, 2000). This study investigates the relationships between cultivation strategies and consequences of relationships.

Cultivation Strategies

Previous research has supported the influence of six main cultivation strategies derived from models of public relations, interpersonal communication, and conflict resolution, on OPR outcomes (for a detailed review of the six strategies, see Ki & Hon, 2009).² *Access* refers to an organization's making available to publics their organizational decision-making processes. *Positivity* is "anything the organization or public does to make the relationship more pleasant for the parties involved" (Hon & J. E. Grunig, 1999, p. 14). *Openness* is the disclosure of "thoughts and feelings among parties involved" (Hon & J. E. Grunig, 1999, p. 14). *Assurance of legitimacy* is the acknowledgement that publics' concerns are legitimate and that they are entitled in the organization's decision-making processes. *Networking* is the organization's building of relationships or coalitions with the same groups that their publics do. Finally, *sharing of tasks* is mutual involvement of problem-solving processes in the areas of interest to the organization, the public, or both.

Consequences of Relationship Cultivations

Public relations researchers have identified several attributes of communication and relational outcomes between organizations and publics (see a summary in L. A. Grunig, J. E. Grunig, & Ehling, 1992). Four outcomes—trust, control mutuality, relational satisfaction, and relational

²Earlier research (e.g., J. E. Grunig & Huang, 2000; Hon & J. E. Grunig, 1999, Ki & Hon, 2009) has reconceptualized and applied these strategies in OPR management research. In this study, we follow and adapt these conceptual definitions to include both the actual behaviors of the organization and the perceptions of the publics.

commitment—are the most widely accepted criteria to evaluate an organization's relationship with its publics (e.g., Huang, 2001; Jo, 2006; Ki & Hon, 2007; Kim, 2007; Yang, 2007). Briefly, *trust* is the confidence in, and willingness to be open to, the other party (Hon & J. E. Grunig, 1999). *Control mutuality* refers to the “degree to which partners agree about which of them should decide relationships goals and behavioral routines” (Stafford & Canary, 1991, p. 224). *Relational satisfaction* refers to the degree to which both organization and publics are mutually satisfied with their relationship. *Relational commitment* refers to a lasting compliance to maintain a valued relationship (Moorman, Zaltman, & Deshpande, 1992), which includes two aspects: continuance commitment (endurance of a certain line of action) and affective commitment (endurance of a certain emotional attribute toward an object; J. E. Grunig & Huang, 2000; Meyer & Allen, 1984).

ANXIETY AND UNCERTAINTY IN THE AUM THEORY

Originated from the uncertainty reduction theory (Berger & Calabrese, 1975), AUM theory explains both the central processes and indirect factors related to communication effectiveness and social adjustment in intercultural encounters. The theory suggests that although various causes such as cultural similarity and second-language competence affect intercultural communication, positive communication outcomes may result from successful management of two factors: the reduction of uncertainty and the reduction of anxiety. In other words, uncertainty and anxiety are mediators between causal variables and communication outcomes (Gudykunst, 1995).³

Uncertainty refers to the perception of lacking confidence in making attributions or predictions about others or the environment. People have maximum and minimum thresholds about uncertainty (Gudykunst, 1993). Uncertainty above the maximum threshold occurs when people do not have enough information to predict others' behaviors, which leads to the lack of comfortable interaction. Uncertainty below the minimum threshold leads to overconfidence in others' behaviors and may cause boredom and misinterpretation. Uncertainty reduction, then, refers to an individual's capacity to demystify and foretell the interactants' behaviors (Gudykunst & Hammer, 1988). This ability is also called attributional confidence, the opposite of uncertainty.

³Borrowing from Berger and Calabrese (1975) and Berger (1979), Gudykunst (1995) differentiated between predictive uncertainty, which is uncertainty about predicting other people's attitudes and behaviors; and explanatory uncertainty, which is uncertainty about explaining other people's attitudes and behaviors.

Different from uncertainty that is cognitive, anxiety is mostly affective and refers to the apprehension of possible negative outcomes (Gudykunst & Hammer, 1988). Similar to uncertainty, people have maximum and minimum thresholds for anxiety. When the amount of anxiety is above the maximum threshold, people become highly uneasy and tend to process information in a simplistic manner. If the amount of anxiety is below the minimum threshold, people are not motivated to communicate at all.

Effective communication occurs when a receiver interprets a message in a way that is similar to the message transmitted by the sender. Intercultural adjustment occurs when a person in a different cultural setting feels emotionally stable, psychologically satisfied, socially appropriate, and communicatively effective (Gudykunst, 2005). Both communication effectiveness and adjustment represent positive communication outcomes, and these positive outcomes result from a successful management of uncertainty and anxiety (Gudykunst, 2005).

Gudykunst (2005) described seven factors that predict an individual's uncertainty and anxiety levels when communicating with strangers: self-concept (perceptions of personal and social identities), motivation to interact with strangers (needs for predictability, group inclusion, and identity sustainability), reactions to strangers (empathy, uncertainty tolerance, and intergroup attitude rigidity), social categorization of strangers (expectations, perceived similarities, and intergroup knowledge), situational processes (perceived ingroup power and cooperative/competitive nature of task), connections with strangers (attraction, interdependence, and quantity and quality of contacts), and ethical interactions (respect and moral inclusiveness). Mindful positive behaviors in these aspects help reduce the other's uncertainty and anxiety (Gudykunst, 2005), which in turn brings out positive communication outcomes such as communication effectiveness and intercultural adjustment.

AUM also describes sublevel factors of the aforementioned predictors; some of the sublevel factors are closely related to the cultivation strategies of relationships in the OPR research, which include positive expectations (sublevel of social categorization of strangers), cooperative tasks (sublevel of situational processes), moral inclusiveness (sublevel of ethical interactions), quality and quantity of contact (sublevel of connection with strangers), and shared networks (sublevel of connection with strangers). The next section discusses how these factors and the links depicted in AUM apply to OPR research.

AUM THEORY AND OPR RESEARCH: AN INTEGRATION

Whereas cultivation strategies have been found to influence OPR outcomes (e.g., Canary & Stafford, 1994; Ledingham & Bruning, 1998), the

mechanism of this influence has not been examined systematically. Posing the unanswered question differently: Why and how do these cultivation strategies work on their intended targets? In this research, we incorporate the theoretical structure of the AUM theory to understand the process of this influence. Specifically, the AUM theory proposes that people must adapt to a new cultural environment through uncertainty and anxiety management (Gudykunst, 2005). The host's proper use of hospitable strategies can help reduce newcomers' uncertainty and anxiety, which in turn leads to positive communication outcomes. We argue that parallel in an organizational setting, an organization's successful relationship cultivation strategies should help reduce the public's uncertainty and anxiety, which in turn enhances positive OPR outcomes. We lay out specific hypotheses and a theoretical model next.

Previous OPR research has identified direct effects from relationship cultivation strategies to OPR outcomes. Particularly, access, shared network, assurance of legitimacy, and sharing of tasks affect control mutuality (Canary & Stafford, 1994; Dainton, Stafford, & Canary, 1994; Ki, 2006; Stafford, Dainton, & Haas, 2000); positivity, assurance of legitimacy, and sharing of tasks affect satisfaction (Ki, 2006; Ledingham & Bruning, 1998; Stanford et al., 2000); positivity and assurance of legitimacy affect trust (Canary & Stafford, 1993; Dainton et al., 1994; Ki, 2006; Canary & Stafford, 1994); and assurance of legitimacy affects commitment (Canary & Stafford, 1994; Dainton et al., 1994; Ki, 2006; Stafford et al., 2000),

This study does not aim to replicate these direct links. Instead, it seeks to explain and predict the influential process from cultivation strategies to relevant mediators, and then to relational outcomes. This effort could help better understand why the use of certain cultivation strategies leads to desirable outcomes. In addition, we do not assume that the six cultivation strategies (i.e., access, positivity, assurance of legitimacy, openness, shared networks, and sharing of tasks) automatically influence both uncertainty and anxiety, which influence all OPR outcomes (i.e., control mutuality, trust, satisfaction, and commitment). Depending on the nature of each construct and previous empirical findings, we make specific hypotheses about the relationships among these variables.

Access

Gudykunst (2005) proposed that "an increase in the quantity and quality of our contact with strangers and members of their groups will produce a decrease in our anxiety and an increase in our ability to predict their behavior accurately" (p. 302). Because augmented quantity and quality of the

organization-public communication tends to make information more mutually accessible, we posit the following:

- H1: Increased access to an intercultural organization's decision-making process reduces the international members' uncertainty and anxiety about organization behaviors.

Positivity

Positivity involves anything the organization or the public does to make the relationship more pleasant for the parties involved (Hon & J. E. Grunig, 1999). It reflects the desire to improve the interaction and relationship, and the hope that others will do the same. Gudykunst (2005) maintained that in intergroup encounters, people tend to recognize the other's social identity first (e.g., by "skin color, dress, accents, and so forth," p. 299). Positive prior experience with members of the recognized group induce positive feelings and expectations, and negative experience does the opposite, albeit quantity of contacts. Therefore, positivity develops around how people feel rather than how much they know of others, especially those of different social groups. In this sense, positivity relates to anxiety but not necessarily uncertainty.

- H2: Increased positivity of an intercultural organization reduces the international members' anxiety about organization behaviors.

Openness

Openness, or the disclosure of thoughts and feelings among interactants, shares in common with Gudykunst's (2005) concept of connection to strangers in AUM. In support of Gudykunst's proposition, Hammer, Wiseman, Rasmussen, and Brusckke (1998) found that increased information exchange with host countries decreased sojourners' uncertainty and anxiety. In an organizational setting, we posit the following:

- H3: Increased openness of an intercultural organization's decision-making process reduces the international members' uncertainty and anxiety about organization behaviors.

Assurance of Legitimacy

Assurance of legitimacy, or the perceived entitlement of participation in the decision-making process, resembles moral inclusiveness in AUM. Opatow

(1990) defined moral inclusion as “relationships in which the parties are approximately equal, the potential for reciprocity exists, and both parties are entitled to fair processes and some share of community resources” (p. 2). His empirical findings revealed a cluster of attitudes that comprised moral inclusion: (a) belief in applying considerations of fairness to another, (b) willingness to allocate a share of community resources to another, and (c) willingness to make sacrifices to foster another’s well-being.

In contrast, moral exclusion occurs when individuals or groups are not in the perceived boundary where ethical values and concerns for fairness apply (Opatow, 1990). A similar concept, delegitimization (Bar-Tal, 1990), refers to the process of classifying certain groups in an extremely negative way and excluding them from the range of acceptability. Gudykunst (2005) argued that people have high levels of anxiety with a morally excluded group and its members “because we do not expect those we treat morally exclusively apply the rules of fair play to us” (p. 303). Moral exclusion or delegitimization is against the assurance of legitimacy and represents some organizations’ attitudes toward certain publics, such as activist groups. The less the legitimacy an organization shares with its publics, the more anxiety it incurs in these publics.

- H4: Increased assurance of legitimacy to the international members of an intercultural organization reduces these members’ anxiety.

Networking

An organization’s strategy to build networks or coalitions with the same groups that their publics do is closely related to the shared networks in AUM. Gudykunst (2005) proposed that anxiety and uncertainty decrease when the shared networks with strangers increase. Modified to an organizational setting, the fifth hypothesis is suggested:

- H5: Increased shared networks with international members of an intercultural organization reduce these members’ uncertainty and anxiety about organization behaviors.

Sharing of Tasks

Sharing of tasks in solving joint or separate problems germane to the interest of the organization, the public, or both, overlaps with the cooperative structure of tasks in AUM. Gudykunst (2005) considered cooperation a critical factor in the establishment of positive relationships with strangers.

Cooperation, defined as coordinated actions aimed at shared goals, tasks, and relational maintenance in various social situations, often leads to feelings of enjoyment and reward (Argyle, 1991). More important, cooperative efforts with the other may decrease amounts of uncertainty and anxiety in social interactions (Gudykunst, 2005). Hence, the sixth hypothesis is proposed:

- H6: Increased task sharing with international members reduces these members' uncertainty and anxiety about organization behaviors.

OPR Outcomes Conceptualized as a Result of Cultural Adjustment

To decide what OPR outcomes result from uncertainty and anxiety reduction, we depend on the direct links between cultivation strategies and relationship outcomes that have been established in previous literature. Then we consider whether these strategies are related to uncertainty or anxiety in our previous six hypotheses. If so, we propose hypotheses from uncertainty/anxiety to the outcome variables. Note that openness does not have direct effects on any outcome variable in previous literature, and because openness is hypothesized to relate to uncertainty and anxiety, any effect of openness on OPR outcomes should be indirect.

Access, shared network, and sharing of tasks all contribute to control mutuality directly (Canary & Stafford, 1994; Ki, 2006), and all three strategies are hypothesized to reduce uncertainty (H1, H5, and H6 respectively). We want to test whether such direct links from the three strategies of access, sharing of tasks, and shared network to control mutuality are mediated by uncertainty. Therefore, we propose H7. In addition, sharing of tasks contributes to satisfaction (Ki, 2006; Ledingham & Bruning, 1998). Sharing of tasks is hypothesized to reduce uncertainty (H6). We want to test whether such a direct link from sharing of tasks to satisfaction is mediated by uncertainty. Therefore, we propose H7.

- H7: Reduction in uncertainty positively predicts (a) control mutuality and (b) satisfaction between an intercultural organization and the international members.

Access, assurance of legitimacy, shared networks, and sharing of tasks affect control mutuality (Canary & Stafford, 1994; Dainton et al., 1994; Ki, 2006; Stafford et al., 2000). All four strategies are hypothesized to reduce anxiety (H1, H4, H5, and H6 respectively). We want to test whether such direct

links from all four strategies to control mutuality are mediated by anxiety. Therefore, we propose H8a. Positivity and assurance of legitimacy affect trust (Canary & Stafford, 1993; Dainton et al., 1994; Ki, 2006; Canary & Stafford, 1994). Both strategies are hypothesized to reduce anxiety (H2 and H4 respectively). We want to test whether such direct links from positivity to trust and from legitimacy to trust are mediated by anxiety. Therefore, we propose H8b.

Positivity, assurance of legitimacy, and sharing of tasks affect satisfaction (Dainton & Stafford, 2000; Ki, 2006; Ledingham & Bruning, 1998; Stafford et al., 2000). All three strategies are hypothesized to reduce anxiety (H2, H4, and H6 respectively). We want to test whether such direct links from these three strategies to satisfaction are mediated by anxiety. Therefore, we propose H8c. Assurance of legitimacy affects commitment (Canary & Stafford, 1994; Dainton et al., 1994; Ki, 2006; Stafford et al., 2000), and assurance of legitimacy is hypothesized to predict anxiety (H4). Therefore, we want to test whether such a direct link from legitimacy to commitment is mediated by anxiety. Therefore, we propose H8.

- H8: Reduction in anxiety positively predicts (a) control mutuality, (b) trust, (c) relational satisfaction, and (d) relational commitment between an intercultural organization and the international members.

AUM IN INTERCULTURAL ORGANIZATION SETTINGS: FOCUSING ON INTERNATIONAL STUDENTS

Whereas AUM theory is constantly developing and evolving, most of its application is at the interpersonal or intergroup level (e.g., Gudykunst & Nishida, 2001; Gudykunst, Nishida, & Chua, 1986; Gudykunst & Shapiro, 1996; Hubbert, Gudykunst, & Guerrero, 1999). To our knowledge, little research has been done at the organizational level.⁴ In addition, Gudykunst (2005) pointed out that the measure of perceived effectiveness of communication had not been deliberately established and tested, and he suggested that future research develop other conceptualizations of effective communication. Our study answers these calls by applying the theory to an

⁴Some studies have examined organizational settings, but only focused on uncertainty reduction during organizational changes such as corporate acquisition (Kramer, Dougherty, & Pierce, 2004).

intercultural organization and using relationship outcomes as measures of communication effectiveness.

In particular, this study examines the theoretical framework using international students in an intercultural organization setting. We focus on international students for the following reasons. First, international students have become the focus of media and an important area of research after the September 11 attack.⁵ Second, the number of international students keeps increasing. In fact, the United States continues to host the highest number of international students in the world.⁶ Most important, research in education has shown that international students face much more anxiety and uncertainty than domestic students (Ku, Lahman, Yeh, & Cheng, 2008).

International students not only speak different languages but also come from educational systems with learning styles that are different from those of the United States. Most domestic students do not face many of the challenges facing international students, such as English language barriers (Ku et al., 2008; Poyrazli & Grahame, 2007; Ryan, Markowski, Ura, & Liu-Chiang, 1998), psychological experiences such as separation from family (Ku et al., 2008) and loss of social support (Poyrazli & Grahame, 2007), social and cultural adjustment (Ryan et al., 1998) such as developing relationships with advisors and professors, and academic role conflict (Ku et al., 2008) such as the challenges of getting used to the differences in teaching and curriculum (Poyrazli & Grahame, 2007), especially in regard to critical evaluation and participation in discussion in class (Lorraine, 2008). In a word, these international students need to deal with many layers of cultural novelty not encountered by their domestic counterparts (Ku et al., 2008).

Notably, most literature in higher education related to international students only focused on how students, themselves, should learn the coping mechanisms to reduce anxiety and uncertainty such as actively seeking new social support (Constantine, Anderson, Berkel, Caldwell, & Utsey, 2005) or how specialized personnel such as college counselors can help (Olivas & Li, 2006). Little research has been conducted on how the

⁵Regulations were changed in the United States regarding international students, including stricter visa rules before the international students come to the United States and a closer monitoring system of them after they come (Poyrazli & Grahame, 2007).

⁶A total of 623,805 international students were enrolled in different US colleges during the 2007–2008 academic year. The enrollment continues to increase at a steady pace and currently 3.5% of all college students in the United States are international students (Institute of International Education, 2008).

intercultural organization itself, i.e., the university, can engage in relationship building to help these students cope with anxiety and uncertainty. Therefore, this study targets at international students in a university with a large international population to test the proposed model, aiming to fill in that gap in research. Like most studies in high education literature on international students (e.g., Grayson, 2008) or intercultural communication (e.g., Cai & Fink, 2002), we define international students as those who have an enrollment status of “international students.”

METHOD

Procedures and Participants

This study explored the communication of international members in an intercultural organization and, in turn, the relationship between this organization and these publics. Publics normally refer to a homogeneous social collectivity that identifies a similar problem and work together toward problem resolution (Blumer, 1966; J. E. Grunig, 1997; J. E. Grunig & Hunt, 1984). Most current research in public relations (e.g., Jo, 2006; Ki & Hon, 2007) uses publics in a general sense, focusing on one specific type of organizational publics (e.g., students in a university–student relationship or retailers in the manufacturer–retailer relationship) to explore OPRs.

This study used international students in a southern university in the United States as participants.⁷ This university can be regarded as an intercultural setting because it boasts statistics that reflect a highly diverse student body (Spring 2009 statistics show a total of 2,969 international students, or 8.2% of the student body). Participants were recruited through the assistance of the international student office at the university. With the institutional review board’s permission, the office sent a message about the study to the international students’ mailing list.⁸ A

⁷We acknowledge that students can also be considered as external publics depending on how people conceptualize the role of a university and the purpose of education. This study is delimited to viewing students as internal publics because students, like faculty members and staff members, are one of the three most critical organizational member groups on campus.

⁸All international students subscribe to that mailing list so all of them were made aware of the research opportunity. If they were interested, they were then directed to an online survey.

link to the online survey of the study was included at the end of the message.⁹

Data were collected in two semesters because only 175 students responded to the survey in the first semester.¹⁰ No significant incidence occurred between the time interval. Among the 246 respondents who composed the final sample, 137 (55.7%) were men, 87 (35.4%) were women, and 22 (8.9%) did not report gender. The mean age was 23.75 ($SD = 4.01$), ranging from 18 to 55. More than half of the respondents were graduate students (69.5%), followed by seniors (15.7%), juniors (9.0%), sophomores (4.0%), and freshmen (2.8%). Twenty-five majors were reported. Business/economics (25.1%) comprised the largest proportion, followed by computer science and electronic engineering (10.9%), engineering (9.1%), chemistry (6.9%), and communication, journalism, and public relations (6.9%).

The respondents came from 32 countries, with the most from India (19.4%), China (17.7%), and Vietnam (6.3%). This distribution is the same as the top three places of international student origins reported in the official university website. The information about countries of origin is as follows: India ($n = 49$); mainland China ($n = 44$) and Taiwan ($n = 27$); Vietnam ($n = 18$); Pakistan, Korea, and Mexico ($n = 12$ each); Italy ($n = 5$); Columbia, Peru, Sri Lanka, Japan, and Venezuela ($n = 4$ each); Greece, Turkey, Ukraine, Canada, and Albania ($n = 3$ each); Nigeria ($n = 2$); Argentina, Brazil, Burma, England, Ethiopia, France, Ghana, Iran,

⁹The study used an online survey for three reasons. First, because the international students are enrolled in various departments and programs, a paper-and-pencil survey could hardly be monitored. Instead, an e-mail through listserv should reach the most, if not all, international students because they were automatically subscribed to the university's international office listserv upon enrollment. Second, with the increasing Internet usage, both researchers and participants found ease in this form of data collection. According to the Internet Usage and World Population Statistics (2009, June 30), the world Internet penetration rate is about 73.9% of the US population. Cook, Heath, and Thompson (2000) conducted a meta-analysis on Internet-based surveys and indicated that "the creation of the Web has brought the halcyon days of survey research because Web-based administration is so fast, flexible, and hugely cost saving" (p. 822). Meanwhile, the quality of data and the representativeness of the sample are not necessarily undermined as compared with paper-and-pencil or even interview format (Cook et al., 2000). One of the reasons for the effectiveness of an online survey lies in its ease perceived by the respondents—55% of respondents reported the ease of use as one of the reasons they preferred Internet-based studies (University of Colorado at Boulder, 1996). Finally, because this study has 12 variables, with at least three or four items to measure each, the questionnaire was relatively long. The use of interactive features and innovative interfaces should reduce respondent's tiredness and unresponsiveness (Schillewaert, Langerak, & Duhamel, 1998).

¹⁰The results from the first 175 participants were reported in a conference paper at the annual conference of International Communication Association, Montreal, Canada, 2008.

Kenya, Lebanon, New Zealand, Nicaragua, Philippines, and Tunisia ($n = 1$ each). Fourteen people did not answer this question.

Only 15.4% reported English as their first language, and the rest reported 25 other languages as theirs. The mean and the median of length of stay within the United States overlapped at around 4 years and 5 months ($SD = 42.52$ months). Participants' dwelling in the university varied between 2 months and 12 years, with a mean of 30.27 months ($SD = 24.50$).

Measurements

Most of the measurements used a 7-point Likert or semantic differential scale, with 1 indicating the lower amount or negative end of the variable property (e.g., *strongly disagree*, *very unlikely*, *unpleasant*, etc.) and 7 indicating the higher amount or the positive end (e.g., *strongly agree*, *very likely*, *pleasant*, etc.). The only exception was the measurement of uncertainty, where percentage was used: 0% = *not certain at all* and 100% = *completely certain*.¹¹ An initial exploratory factor analysis was performed on the items of each measure. Items that poorly loaded on the factor or cross-loaded on unintended factors were omitted. All measures were modified to fit the organization setting (see details in instruments section). The complete instruments along with factor loadings are found in Appendix.

In addition, following Yang's (2007) recommendation, the *maximal reliability*, or Hancock and Mueller's (2001) *H* was calculated to represent the quality of each measurement. This coefficient takes into account the number of indicators and the magnitudes of factor loadings, and thus best pictures the amount of the latent variable captured by the indicators (Hancock & Mueller, 2001). Based on both Cronbach's alphas and the maximal reliability coefficients (*Hs*), the measurements are highly reliable. Cronbach's alphas varied between .79 and .96 (Hair, Black, Babin, Anderson, & Tatham, 2006, recommended alphas to be .70 or higher), and the maximal reliability coefficients varied between .79 and .96 (Hancock & Mueller, 2001, recommended *Hs* to be .70 or higher). Table 1 reports descriptives, Cronbach's alphas, *Hs*, and correlation coefficients among variables.

Instruments for independent variables. The independent variables included access, positivity, openness, assurance of legitimacy, networking, and sharing of tasks. The access measure had four items that asked

¹¹This measurement was based on the standard measure of uncertainty originally created by Gudykunst and Nishida (1986) and widely used in intercultural communication literature (e.g., Gao & Gudykunst, 1990).

TABLE 1
Correlations Among the Variables, Cronbach's Alphas, *H*s, Means, and Standard Deviations of Variables

	1	2	3	4	5	6	7	8	9	10	11	12	<i>M</i>	<i>SD</i>
1. Access	.82 (.82)												4.41	1.23
2. Positivity	.71**	.96 (.92)											4.74	1.48
3. Openness	.48**	.43**	.90 (.90)										4.70	1.46
4. Legitimacy	.22**	.16*	.07	.79 (.79)									4.07	1.23
5. Networking	.13	.18**	.12	.02	.79 (.84)								3.06	1.47
6. Task sharing	.52**	.55**	.36**	.20**	.38**	.85 (.85)							3.60	1.23
7. Uncertainty	-.31**	-.39**	-.25**	-.06	-.27**	-.35**	.91 (.90)						48.60	22.36
8. Anxiety	-.59**	-.60**	-.29**	-.30**	-.19**	-.43**	.36**	.88 (.88)					3.34	1.49
9. Control mutuality	.51**	.47**	.44**	.22**	.31**	.56**	-.41**	-.48**	.89 (.89)				3.66	1.31
10. Trust	.61**	.59**	.42**	.23**	.14*	.48**	-.40**	-.56**	.63**	.89 (.88)			4.75	1.41
11. Satisfaction	.66**	.72**	.37**	.25**	.22**	.55**	-.43**	-.58**	.66**	.75**	.93 (.96)		4.55	1.46
12. Commitment	.52**	.63**	.37**	.23**	.09	.38**	-.30**	-.52**	.40**	.61**	.66**	.85 (.87)	5.43	1.35

Note. Cronbach's alphas of the scales are shown on the diagonal, with *H*s shown in the parentheses.
* $p < .05$. ** $p < .01$.

participants to rate perceived adequacy and quality of contact with the university. The items were adapted from Gudykunst and Nishida (2001), Islam and Hewstone (1993), and Stephan and Stephan (1985). Positivity was measured with three items modified from Gudykunst and Shapiro's (1996) measure of positive experience with a contact culture.¹² Openness was assessed with Hammer et al.'s measure (1998), which asked participants to indicate to what extent the organization shares information with them about policies, rules, regulations, changes to their work, and important organizational decisions.

Assurance of legitimacy included three items based on Opatow's (1990) list of manifestation of moral exclusion. The items asked whether participants perceived that the organization would feel potential threat and harm by increasing contact with the public, and whether it placed the blame for problems on the organizational members. Parks and Adelman's (1983) measure was adapted to form the networking measure. It included two main categories: amount of communication with organizational members' network and support from organizational members' network. Finally, the measure for sharing of tasks included three items based on Stafford and Canary's (1991) conceptualization of this construct. The questions ask to what extent the participants perceive the university has offered help in important tasks, shared joint responsibilities, and been concerned about students' outcomes.¹³

Mediators. Following Gudykunst and Nishida's (1986) proposition, uncertainty was measured by its inverse concept, attributional confidence. The scores were reversely coded later so that higher scores represented higher uncertainty. Like Gao and Gudykunst (1990), this study modified the scale for organizational members in general, rather than for specific individuals. The other mediator, anxiety, was measured with four items adapted from Stephan and Stephan's (1985) emotional assessment measure.

¹²As explained in Footnote 2, the operationalization of positivity included both the actual behaviors of the organization and the perceptions of the publics. For *positivity*, we have selected these measurement items because they focus on the perceptions of the publics about what the organization does, which fits in the AUM theoretical framework. Moreover, this measurement has demonstrated high reliability and validity in assessing positivity (see Gudykunst & Shapiro, 1996).

¹³More recently, Ki and Hon (2009) developed a new measure of relationship cultivation strategies. That measure was not used in this study mainly because this study relied more on the theoretical constructs developed from the intercultural communication literature regarding relationship cultivation strategies.

OPR Relationship Outcomes

To measure control mutuality, trust, relational satisfaction, and relational commitment, Huang's (2001) measures were used. The original measures contained four items each. In this study, one trust item and one satisfaction item were removed because of small loading magnitude (less than .65, see Hair et al., 2006) based on the initial exploratory factor analysis results.

RESULTS

The purpose of this study was to investigate whether AUM could provide a theoretical framework to explain why certain cultivation strategies affected OPR relational outcomes. To this end, two mediators, uncertainty and anxiety, were proposed to explain the intermediate process. Preliminary analyses were performed to test whether extraneous factors such as language barrier and years in university would interfere with the relationships between cultivation strategies and relational outcomes. In particular, multivariate analysis of covariance (MANCOVA) was conducted with the six strategies entered as independent variables, the four relational outcomes as dependent variables, and language barrier (1=English is my native language, 0=English is a second language) and years in university (number of months) as controlled variables. Results indicated that language barrier and years in university did not have significant effects. For language barrier, Wilk's Lambda = .99, $F(4, 206) = 0.02$, $p = .99$. For years in university, Wilk's Lambda = .96, $F(4, 206) = 1.02$, $p = .39$.

To assess the proposed mediating effect, nested model comparison was performed. Three models were compared: the model with direct effects only (as previous literature found), the model with indirect effects only (as proposed in this study), and the model with both direct and indirect effects (called the full model in this article). The model comparison results would reveal whether effects of cultivation strategies on OPR relational outcomes were fully or partially mediated, if at all, by uncertainty and anxiety. The hypotheses were tested through an examination of the significance of the structural path coefficients (Kline, 2005). Both raw (symbolized as b) and standard path coefficients (symbolized as β) were reported.

Structural equation modeling (SEM) for latent variables with multiple items was used to assess model fit and model comparisons. Kline (2005) named this type of analysis *one-step modeling*, because the structural and measurement components are analyzed simultaneously in one model. One-step model allows researchers to evaluate the overall performance of the latent variable model with both the structural and measurement

components, and thus both implicit specification and measurement errors are assessed. For this reason, no confirmatory factor analyses would be needed for measurement models separately. AMOS 4.01 (Arbuckle, 1994–1999) was used to perform SEM.

Because χ^2 is sensitive to sample size and tends to be significant with complicated models (Kline, 2005), it was reported but not used as a determining criterion for the model fit. Instead, the goodness-of-fit indexes were based on a χ^2/df ratio smaller than 3, root mean square error of approximation (RMSEA) $\leq .08$ and comparative fit index (CFI) $\geq .95$ (Hu & Bentler, 1998, 1999; Kline, 2005; Yang, 2007).

Nested Model Comparison

Loehlin (1997) defined a nesting relationship among models as one that “the model with the smaller number of free variables can be obtained from the model with the larger number of free variables by fixing one or more of the latter” (p. 64). By default, the model with more free parameters to estimate (the larger model) fit better than the one with fewer free parameters (the smaller model), because the missing links in the latter can be taken as the parameters with a fixed coefficient of zero. Therefore, the smaller model may fit worse in approximating covariances but win the favor for its parsimony. The smaller model becomes the better model if the worsened fit is not significant (Loehlin, 1997).

Figure 1 represents three models for comparison in this study. The model with dotted-line links only (named *the direct-effect model*) reflects the direct effects of cultivation strategies on relational outcomes supported in previous literature. The model with concrete-line links (named *the indirect-effect model*) reflects the mediation model as proposed in this study. The model with both dotted- and concrete-line links (named *the full model*) reflects the one that contains both direct and indirect effects. Although both the direct-effect and indirect-effect models nested within the full model, the former two did not have a nesting relationship.

The results indicated that the three models all fit the data acceptably (Table 2). In comparison, however, the direct-effect model fit the least well, $\chi^2 = 1094.07$, $df = 468$, $\chi^2/df = 2.34$, $CFI = .970$, $RMSEA = .074$, Akaike Information Criterion (AIC) = 1346.07, followed by the indirect-effect model, $\chi^2 = 1628.45$, $df = 788$, $\chi^2/df = 2.07$, $CFI = .970$, $RMSEA = .066$, $AIC = 1936.45$. The full model had the best fit, $\chi^2 = 1584.22$, $df = 776$, $\chi^2/df = 2.04$, $CFI = .971$, $RMSEA = .060$, $AIC = 1912.22$. The apparent smaller χ^2 and AIC in the direct-link only model resulted mainly from a smaller number of free parameters to be estimated as compared with the other two models. With two latent mediators and associated links added,

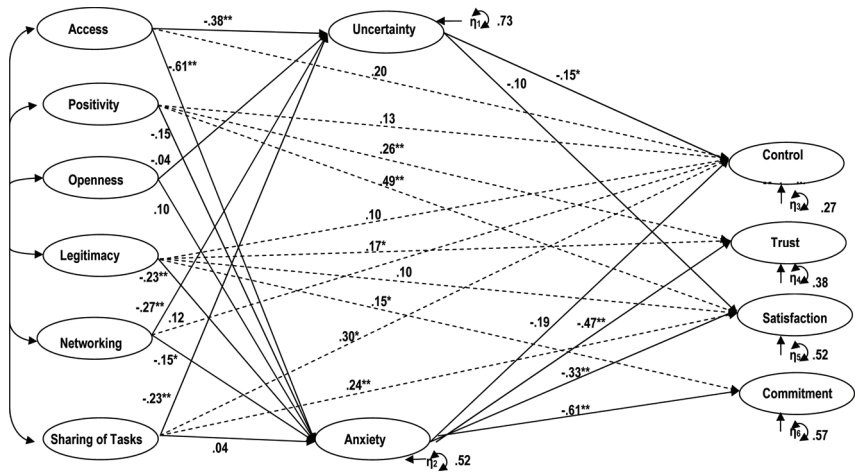


FIGURE 1 Structural model with standardized loadings of the effects from cultivation strategies to OPR relational outcomes. The concrete lines represent the mediation effects proposed in this study. The dotted lines represent the direct effects proposed in previous studies. * $p < .05$. ** $p < .01$.

over 50 free parameters to be estimated were added in the indirect-link model and the full model.¹⁴ Thus, the χ^2 coefficients were necessarily worse in the latter two models. Nonetheless, the recommended model performance indices— χ^2/df , CFI, RMSEA—all indicated that adding the two mediators and the associated links improved the model despite the considerable number of the increased free model parameters. This result indicates that the relationships found in the previous literature between the six cultivation strategies (access, positivity, openness, assurance of legitimacy, networking, and task sharing) and the four OPR outcomes (control mutuality, trust, satisfaction, and commitment) can be better explained when the two AUM mediators, uncertainty and anxiety, are added. So, the next question becomes: Are these effects all or partially mediated through uncertainty and anxiety? To answer this question, the indirect-effect model and the full model were compared.

Between the indirect-effect model and the full model, the three fitness indexes, χ^2/df , CFI, RMSEA, were very close. However, the χ^2 increase from the indirect-effect model to the full model was significant,

¹⁴For interested readers who wish to obtain the exact number of the free parameters to be estimated in each model, the AIC formula can be used: $AIC = \chi^2 + 2t$, where t = free parameter to be estimated.

TABLE 2
AMOS Fit Measures

<i>Fit measures</i>	<i>Direct-effect model</i>	<i>Indirect-effect model</i>	<i>Full model</i>
χ^2	1094.07	1628.45	1584.22
Df	468	788	776
χ^2/df	2.34	2.07	2.04
CFI	.97	.97	.97
RMSEA	.07	.07	.06
AIC	1346.07	1936.45	1912.22

Note. CFI = comparative fit index. RMSEA = root mean square of approximation. AIC = Akaike Information Criterion.

$\Delta\chi^2 = 44.23$, $\Delta df = 12$, $p < .001$. In addition, the smaller AIC index in the full model than in the indirect-link model also supported the better performance of the full model. This result indicates that the relationships between the six cultivation strategies and the four OPR outcomes include both direct effects and indirect effects that are mediated through uncertainty and anxiety. The next section discusses hypothesized relationships in the full model in detail.

Direct and Indirect (Mediated) Links Between Cultivation Strategies and OPR Outcomes

In the full model, *access* affected control mutuality only through mediation of uncertainty. Anxiety did not mediate between access and control mutuality, because although access had a significant effect on anxiety, the effect from anxiety to control mutuality was not significant. Access also affected all three other OPR outcome variables, but again not directly, but through anxiety. Positivity affected trust and satisfaction among all four outcome variables, and such effects were only direct. Openness did not affect any endogenous variable in the model.

The effects of assurance of legitimacy on the OPR outcomes included both direct and indirect routes. Assurance of legitimacy affected trust and commitment directly, and also indirectly through anxiety. Assurance of legitimacy affected commitment mainly through anxiety: The effects from this strategy to anxiety and from anxiety to commitment were both significant at .01 level, and its direct effect on commitment was marginally significant ($p = .049$). Assurance of legitimacy had an indirect effect on satisfaction, mediated through anxiety. However, it had no direct or indirect effect on control mutuality.

The effect of shared networks on OPR outcomes was similar with the effect of access. Shared networks influenced control mutuality only through

the mediation of uncertainty. Shared networks also showed indirect effects on the other three OPR outcomes through the mediation of anxiety. Finally, sharing of tasks had direct effects on control mutuality and satisfaction. In addition, sharing of tasks also affected control mutually indirectly through uncertainty.

Hypothesis Testing

H1 was supported. Increased access had significant effects on both decreased uncertainty ($b = -3.97$, $\beta = -.38$, $p < .0001$) and decreased anxiety ($b = -4.08$, $\beta = -.61$, $p < .0001$). However, H2 and H3 were not supported, increased positivity did not reduce anxiety ($b = -1.55$, $\beta = -.15$, $p > .05$), and increased openness did not contribute to either uncertainty ($b = -0.44$, $\beta = -.04$, $p > .05$) or anxiety ($b = 1.42$, $\beta = .10$, $p > .05$).

H4 and H5 were both supported. Increased assurance of legitimacy (H4) reduced anxiety ($b = -3.35$, $\beta = -.23$, $p < .001$), and increased network sharing (H5) reduced both uncertainty ($b = -3.69$, $\beta = -.27$, $p < .0001$) and anxiety ($b = -2.17$, $\beta = -.15$, $p < .05$). H6 was partially supported: Sharing of tasks did not have a significant effect on anxiety ($b = 0.75$, $\beta = .04$, $p > .05$), but did so on uncertainty ($b = -3.10$, $\beta = -.23$, $p < .05$).

H7 was partially supported. Decreased uncertainty increased the degree of control mutuality ($b = -2.31$, $\beta = -.15$, $p < .05$), but not of satisfaction ($b = -1.93$, $\beta = -.10$, $p > .05$). H8 predicted that reduced anxiety would lead to increased levels of all four OPR outcomes. The hypothesis was largely supported with one exception. Decreased anxiety led to increased trust ($b = -5.15$, $\beta = -.47$, $p < .0001$), satisfaction ($b = -4.04$, $\beta = -.33$, $p < .0001$), and commitment ($b = -7.43$, $\beta = -.61$, $p < .0001$), but not to control mutuality ($b = -1.85$, $\beta = -.19$, $p = .064$).

DISCUSSION AND CONCLUSIONS

In this study, eight hypotheses were proposed to test whether the AUM theory explains the effects from cultivation strategies to OPR outcomes. Results largely supported the hypotheses and a model with both direct and indirect effects through the proposed mediators, uncertainty and anxiety. The following paragraphs discuss the essential theoretical relationships among the concepts in the model, focusing on the integration and extension of previous theories in relationship management and intercultural and global public relations, and then the practical implications of the findings.

Relationship Cultivation Strategies, Anxiety and Uncertainty, and OPR Outcomes

Theoretically speaking, this study essentially extends and assesses the AUM theory in the OPR context by exploring the underlying mechanism of how and why relationship cultivation strategies lead to desired relational outcomes. It also expands relationship management theory by refining the process of how relationship cultivation strategies (one key set of variables in the existing relationship management theory) will function differently and achieve different effects on relationship outcomes (another key set of variables in the existing relationship management theory). Another key theoretical implication is the extension on intercultural and global public relations. We discuss these theoretical implications in this section.

Overall, the relationship cultivation strategies seem to form four clusters according to how they affect relational outcomes: through mediation effects only, through both mediation and direct effects, through direct effects only, and no effects. These findings revealed useful insights into the underlying mechanism of how the cultivation strategies affect the OPR outcomes.

Cultivation strategies with mediation effects only. Access and shared networks have similar effects on OPR outcomes: Both strategies affected all four OPR outcomes through the mediation effects of either uncertainty or anxiety. Specifically, the effects of both strategies on control mutuality were mediated fully through uncertainty, whereas their effects on the other OPR outcomes (trust, satisfaction, and commitment) were mediated fully through anxiety.

These findings not only supported previous literature in that access and shared networks both predicted control mutuality (e.g., Canary & Stafford, 1994; Ki, 2006), but showed more details about why these effects were found. An increase in the accessibility to organizational information and decision making, as well as maintaining the same network with the organization's key publics may first reduce the public's uncertainty and anxiety levels, which contribute to the improved relational outcomes. Interestingly, both strategies affected control mutuality through uncertainty, but affected the other three outcomes through anxiety. This may imply that control mutuality is more cognitive than affective in nature, whereas the other three are just the opposite.

Further, control mutuality essentially involves clarifying what both parties in a relationship need to do and are entitled to (the fair share of responsibility and rights). Such behavioral components may be more related to perceived certainty about each party's behaviors and expectations. This supports the notion that even with the existence of power imbalance, if

different parties have a clear understanding of who will be able to influence the decision-making process and how, control mutuality might still be possible (L. A. Grunig et al., 1992).

Cultivation strategies with both mediated and direct effects. Assurance of legitimacy and sharing of tasks affected OPR outcomes through not only mediation, but also direct effects. Assurance of legitimacy had indirect effects on all OPR outcomes except for control mutuality and these effects were mediated through reduced anxiety. Most important, assurance of legitimacy also had direct effects on trust and commitment. Sharing of tasks, on the other hand, affected control mutuality both directly and indirectly through uncertainty. It also influenced satisfaction directly.

These findings imply that a sense of entitlement to decision-making processes increases the publics' emotional confidence in and commitment to their organization. Assurance of legitimacy symbolizes a true effort to make the communication symmetric by making sure that the organization puts itself in the shoes of its publics. An individual tends to feel small and powerless when facing a big and uninfluenced organization. This strategy functions on relational outcomes mainly by relieving such fretfulness and reducing anxiety.

These findings essentially supported the claim from previous literature that assurance of legitimacy may be the most important strategy among all in relationship management (i.e., Dainton & Stafford, 2000; Stafford, 2003). Although it was predicted that direct effects might exist from assurance of legitimacy to satisfaction (Dainton & Stafford, 2000; Stafford et al., 2000), the data in this study indicated that these effects were completely mediated through anxiety. However, the effects of assurance of legitimacy on trust and commitment were indeed both direct, supporting previous findings (for trust, see Canary & Stafford, 1993, Dainton et al., 1994; for commitment, see Canary & Stafford, 1994; Dainton, Stafford, & Canary, 1994; Stafford et al., 2000), and indirect, mediated through anxiety (as proposed in this study).

Surprisingly, assurance of legitimacy did not affect control mutuality as found in previous literature (Canary & Stafford, 1994; Dainton et al., 1994; Stafford et al., 2000). This might be because control mutuality is more cognitive than affective in nature, as stated earlier. Because assurance of legitimacy mainly functions along the affective or emotional route, it was not able to produce even a direct effect on control mutuality.

In addition, sharing of tasks is also crucial as it functions on two routes, both directly and indirectly. These findings supported previous literature on the direct links from task sharing to control mutuality (Canary & Stafford, 1994) and to satisfaction (Ki, 2006; Ledingham & Bruning, 1998). This

suggests the importance of building behavioral rather than purely symbolic relationships (J. E. Grunig, 1993). Task sharing involves behavioral components that require organizations to do things together with and for the publics. The publics evaluate such a relationship by focusing on what the organization *does* to enhance the publics' welfare.

Cultivation strategies with direct effects only. Interestingly, positivity only affected satisfaction and trust directly. These findings supported previous empirical findings (Ki, 2006; Canary & Stafford, 1994). Positivity did not relate to control mutuality as suggested in previous literature. This finding may share the same reason for the lack of direct link between assurance of legitimacy and control mutuality, as discussed in the previous section.

The cultivation strategy with no effects. The most perplexing finding in this study may be the strategy of *openness*, which had no effect on any relational outcome. Interpersonal communication literature has suggested the reasons for an absence of direct links between openness and relational outcomes.¹⁵ A possible reason is that although openness is similar to access in emphasizing quantity of communication, unlike access, openness does not emphasize quality of contact. Therefore, openness may not necessarily enhance positive feelings towards the revealing party.

Global and Intercultural Public Relations

This study extends the existent research by looking at an intercultural context. Different from the cross-cultural studies in global public relations that typically compare one aspect across two or more cultural groups (e.g., Culbertson & Chen, 1996; Sriramesh & Vercic, 2003), this study examines intercultural relationship building and communication processes and outcomes.

The results supported the proposed model, even with such a heterogeneous sample—over 240 international students from 32 countries. Typically, a heterogeneous sample fits a model necessarily worse than a homogeneous sample, because the large within-group variance in the former weakens the potential relationships proposed among the variables

¹⁵Canary and Stafford (1994) suggested that such a link has often been weakly inversely related, after controlling for positivity and assurance of legitimacy (see for example, Stafford et al., 2000). One possible reason is that self-disclosure (openness) itself, a measure reported mainly because of the cultural expectation, is not important to relational outcomes (Stafford, 2003).

operationalized on such a group, or in other words, promotes the likelihood of Type II error. The sustention of the proposed model with a heterogeneous sample strengthens the confidence that the AUM theory provides a consistent explanatory framework for the linkages between cultivation strategies and relational outcomes. Therefore, the results are more generalizable to other intercultural organizational settings than the results based on a homogeneous group.

The demographic information of the international students was discussed in the method section. It is important to note that our model, which addresses anxiety and uncertainty management of international students, has well captured a variety of factors that might influence students' anxiety and uncertainty levels. The demographics of this particular sample showed that these students did experience a considerable amount of anxiety and uncertainty, regardless of the countries of origin, language barrier, and years of stay in the university. First of all, the majority of the international students come from East Asian countries (India, mainland China and Taiwan, and Vietnam), who have been repeatedly reported in the literature to experience much greater difficulty and stress in adapting to the study and life in the United States when compared with international students coming from other countries (especially those from Western Europe; Li & Kaye, 1998; Wilton & Constantine, 2003). Our additional MANCOVA analysis reported in the results section did not reveal strong significant effects of either language and years of stay in the university. Therefore, this model demonstrates its practical usefulness in addressing the publics that experience high levels of uncertainty and anxiety in adapting to an organization, and its capacity in explaining the associations from cultivation strategies to relational outcomes, which overrides the variances found within the sample such as language barrier and length of stay.

Practical Implications

Based on the results, we suggest the following for public relations practitioners. Practitioners may use specific cultivation strategies to improve targeted relational outcomes through the desired route of influence (e.g., uncertainty, anxiety, or both). For example, when using the two strategies of access and networking, since the effects of these two strategies on OPR outcomes were completely mediated through anxiety and uncertainty, practitioners should make sure that the publics' levels of both anxiety and uncertainty are actually reduced after using these two strategies. They could, for example, use pre- and postsurveys to measure the change in anxiety and uncertainty level to make sure that relationship cultivation strategies have, indeed, served their genuine purposes.

In addition, special attention should be paid to the most essential cultivation strategies such as assurance of legitimacy and sharing of tasks. Consistent with previous literature, this study found assurance of legitimacy to be most critical to OPR management. Practitioners should not only incorporate this strategy on a daily basis, but more important, in conflict management situations (Stafford, 2003). In applying that strategy, practitioners also need to make sure that they not only share information and listen, but also truly think from the publics' perspectives and reduce their anxiety level because the reduction of anxiety was the fundamental reason why publics may then have a positive perception of the OPR. Finally, the strategy of openness needs to be used with caution.

All the aforementioned suggestions can be applied to universities that need to manage the anxiety and uncertainty of international students. For this particular group of publics, the university should engage in relationship cultivation strategies that focus on the most challenging areas such as academic life, social life, psychological experiences, and discrimination (implicit or explicit). The organization should then keep track of the changes in the anxiety and uncertainty levels of these students after relationship cultivation strategies have been implemented to assess the improvement in both the anxiety and uncertainty levels and the relational outcomes.

Limitations and Directions for Future Research

This study has several limitations. First, the sample size was relatively small. Although the sample had the advantage of diversity, the difficulty in recruiting limited the number of participants. A bigger sample size could have been used to improve the stability of the model. Second, AUM theory originated from interpersonal communication literature. In fact, many theories or theoretical frameworks currently used in public relations originated in interpersonal communication and are adapted and applied to the organizational setting. For example, the relationship cultivation strategies, themselves, all derive from interpersonal communication literature and are adapted to fit the organization-public level (e.g., Ki & Hon, 2009). The typical crisis response strategies used in crisis communication also have an origin in the self-defense or apologia of individuals (e.g., Coombs, 2006). This study exemplifies a derivation along the line. Despite its value, we do acknowledge that such extrapolation of interpersonal-level theories to the organization-public level might lose or change certain elements in the original theories. Future research could use multilevel analyses to exclude potential ecological error in applying different-level theories (van de Vijver & Leung, 1997).

Third, given our focus on international students as one special group of organizational members with a special challenge in anxiety and uncertainty

management, we used an international student sample aptly. Nonetheless, we did not test how the group identification (Sha, 2006) of these international students will influence the results of this study. International students from different countries are a very heterogeneous group and they might or might not identify themselves as a group of international students. Therefore, future studies should include group identification as a potential variable.

In addition, this study used an online survey. Despite its ease to use and cost effectiveness, online surveys are disadvantaged in potential biased samples, biased return, difficulty in reporting response rate, impersonalize survey request, and inconsistent rigidity among researchers (Anderson & Gansnedar, 1995; Zhang, 2000). These problems could weaken the generalizability of the results. For example, Anderson and Gansnedar found that returnees to Internet-based surveys tend to use computers more often than nonreturnees. Future research should cross-validate the results through other data collection methods.

Finally, because the AUM applies not only to intercultural interactions but also to same-culture interactions, as long as new cultural (in a broader sense than national) settings and adaptation processes are involved (Gudykunst, 2005). Future research may test this model in a variety of domestic samples. In fact, this study did not test how different international student perceive the strangeness of the organization. The perceived strangeness may well affect how AUM affects relationship building. Along this line, we may not limit our current theoretical model to international students. Rather, all students at a university setting may experience different levels of anxiety and uncertainty. So, future studies should test the model with all student population, or in other organizational settings, all newcomers. That way, the similarities and differences that the model performs among different samples in the similar culture-adaptation settings can be compared, and the model's predictive power improved.

REFERENCES

- Adler, N. J. (2002). *International dimensions of organizational behavior* (4th ed.). Cincinnati, OH: South-Western Thompson Learning.
- Anderson, S. E., & Gansnedar, B. M. (1995). Using electronic mail surveys and computer-monitored data for studying computer-mediated communication systems. *Social Science Computer Review*, 13, 33–46.
- Arbuckle, J. L. (1994–1999). *AMOS 4.01*. Chicago: SmallWaters.
- Argyle, M. (1991). *Cooperation*. London: Routledge.
- Bar-Tal, D. (1990). Causes and consequences of delegitimization: Models of conflict and ethnocentrism. *Journal of Social Issues*, 46, 65–81.

- Berger, C. R. (1979). Beyond initial interactions. In H. Giles & R. St. Clair (Eds.), *Language and social psychology* (pp. 122–144). Oxford: Basil Blackwell.
- Berger, C. R., & Calabrese, R. (1975). Some explorations in initial interactions and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research, 1*, 99–112.
- Blumer, H. (1966). The mass, the public, and public opinion. In B. Berelson & M. Janowitz (Eds.), *Reader in public opinion and communication* (2nd ed., pp. 43–50). New York: Free Press.
- Cai, D. A., & Fink, E. L. (2002). Conflict style differences among individualists and collectivists. *Communication Monographs, 69*, 67–87.
- Canary, D. J., & Stafford, L. (1993). Preservation of relational characteristics: Maintenance strategies, equity, and locus of control. In P. J. Kalbfleisch (Ed.), *Interpersonal communication: Evolving interpersonal relationships* (pp. 237–259). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Canary, D. J., & Stafford, L. (1994). Maintaining relationships through strategic and routine interaction. In D. J. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 3–22). San Diego, CA: Academic Press.
- Constantine, M. G., Anderson, G. M., Berkel, L. A., Caldwell, L. D., & Utsey, S. O. (2005). Examining the cultural adjustment experiences of African international college students: A qualitative analysis. *Journal of Counseling Psychology, 52*, 57–66.
- Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in Web- or Internet-based surveys. *Educational and Psychological Measurement, 60*, 821–836.
- Coombs, W. T. (2006). Crisis management: A communicative approach. In C. H. Botan & V. Hazelton (Eds.), *Public relations theory II* (pp. 171–197). Thousand Oaks, CA: Sage.
- Culbertson, H. M., & Chen, N. (1996). *International public relations: A comparative analysis*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Dainton, M., & Stafford, L. (2000). Predicting maintenance enactment from relational schemata, spousal behavior, and relational characteristics. *Communication Research Reports, 17*, 171–180.
- Dainton, M., Stafford, L., & Canary, D. J. (1994). Maintenance strategies and physical affection as predictors of love, liking, and satisfaction in marriage. *Communication Reports, 7*, 88–98.
- Ferguson, M. A. (1984, August). *Building theory in public relations: Interorganizational relationships as a public relations paradigm*. Paper presented at the meeting of the Association for Education in Journalism and Mass Communication, Gainesville, FL.
- Gao, G., & Gudykunst, W. B. (1990). Uncertainty, anxiety, and adaptation. *International Journal of Intercultural Relations, 14*, 301–317.
- Grayson, J. P. (2008). The experiences and outcomes of domestic and international students at four Canadian universities. *Higher Education Research & Development, 27*, 215–230.
- Grunig, J. E. (1993). Image and substance: From symbolic to behavioral relationships. *Public Relations Review, 19*, 121–139.
- Grunig, J. E. (1997). A situational theory of publics: Conceptual history, recent challenges and new research. In D. Moss, T. MacManus, & D. Verčič (Eds.), *Public relations research: An international perspective* (pp. 3–46). London, U.K.: International Thompson Business Press.
- Grunig, J. E., & Huang, Y. (2000). From organizational effectiveness to relationship indicators: Antecedents of relationships, public relations strategies, and relationship outcomes. In J. Ledingham & A. Bruning, S. D. (Eds.), *Public relations as relationship management: A relational approach to the study and practice of public relations* (pp. 23–53). Mahwah, NJ: Lawrence Erlbaum Associates.

- Grunig, J. E., & Hunt, T. (1984). *Managing public relations*. New York: Holt, Rinehart and Winston.
- Grunig, L. A., Grunig, J. E., & Ehling, W. P. (1992). What is an effective organization? In J. E. Grunig (Ed.), *Excellence in public relations and communication management: Contributions to effective organizations* (pp. 65–89). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Gudykunst, W. B. (1985). An exploratory comparison of close intracultural and intercultural friendships. *Communication Quarterly*, 33, 270–283.
- Gudykunst, W. B. (1993). Toward a theory of effective interpersonal and intergroup communication: An anxiety/uncertainty management (AUM) perspective. In R. L. Wiseman & J. Koester (Eds.), *Intercultural communication competence* (pp. 33–71). Newbury Park, CA: Sage.
- Gudykunst, W. B. (1995). Anxiety/uncertainty management (AUM) theory: Current status. In R. L. Wiseman (Ed.), *Intercultural communication theory* (pp. 8–58). Thousand Oaks, CA: Sage.
- Gudykunst, W. B. (2005). *Theorizing about intercultural communication*. Thousand Oaks, CA: Sage.
- Gudykunst, W. B., & Hammer, M. R. (1988). Strangers and hosts: An extension of uncertainty reduction theory to intercultural adjustment. In Y. Y. Kim & W. B. Gudykunst (Eds.), *Cross-cultural adaptation* (pp. 106–139). Newbury Park, CA: Sage.
- Gudykunst, W. B., & Nishida, T. (1986). Attributional confidence in low- and high- context cultures. *Human Communication Relations*, 12, 525–549.
- Gudykunst, W. B., & Nishida, T. (2001). Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International Journal of Intercultural Relations*, 25, 55–71.
- Gudykunst, W. B., Nishida, T., & Chua, E. (1986). Uncertainty reduction in Japanese–North American dyads. *Communication Research Reports*, 3, 39–46.
- Gudykunst, W. B., & Shapiro, R. B. (1996). Communication in everyday interpersonal and intergroup encounters. *International Journal of Intercultural Relations*, 20, 19–45.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson.
- Hall, M. (2006). Corporate philanthropy and corporate community relations: Measuring relationship-building results. *Journal of Public Relations Research*, 18, 1–21.
- Hammer, M. R., Wiseman, R. L., Rasmussen, J. L., & Brusckhe, J. C. (1998). A test of anxiety/uncertainty management theory: The intercultural adaptation context. *Communication Quarterly*, 46, 309–337.
- Hancock, G. R., & Mueller, R. O. (2001). Rethinking construct reliability within latent variable systems. In R. Cudeck, S. du Toit, & D. Sorbom (Eds.), *Structural equation modeling: Present and future—A Festschrift in honor of Karl Joreskog* (pp. 195–216). Lincolnwood, IL: Scientific Software International.
- Hon, L. C., & Grunig, J. E. (1999). *Guidelines for measuring relationships in public relations*. Gainesville, FL: Institute for Public Relations.
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3, 424–453.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Huang, Y. H. (2001). OPRA: A cross-cultural, multiple-item scale for measuring organization–public relationships. *Journal of Public Relations Research*, 13, 61–90.
- Hubbert, K. N., Gudykunst, W. B., & Guerrero, S. L. (1999). Intergroup communication over time. *International Journal of Intercultural Relations*, 23, 13–46.

- Hung, C. J. F. (2005). Exploring types of organization–public relationships and their implications for relationship management in public relations. *Journal of Public Relations Research, 17*, 393–426.
- Institute of International Education. (2008). *Foreign student and total U.S. enrollment*. Retrieved September 14, 2009, from <http://opendoors.iienetwork.org/?p=131533>
- Internet Usage and World Population Statistics. (2009, June 30). Retrieved September 11, 2009, from <http://www.internetworldstats.com/stats.htm>
- Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin, 19*, 700–710.
- Jo, S. (2006). Measurement of organization–public relationships: Validation of measurement using a manufacturer–retailer relationship. *Journal of Public Relations Research, 18*, 225–248.
- Ki, E.-J. (2006). *Linkages among relationship maintenance strategies, relationship quality outcomes, attitude, and behavioral intentions*. Unpublished doctoral dissertation, University of Florida.
- Ki, E.-J., & Hon, L. C. (2007). Testing the linkages among the organization–public relationship and attitude and behavioral intentions. *Journal of Public Relations Research, 19*, 1–23.
- Ki, E.-J., & Hon, L. C. (2009). A measure of relationship cultivation strategies. *Journal of Public Relations Research, 21*, 1–24.
- Kim, H. S. (2007). A multilevel study of antecedents and a mediator of employee–organization relationships. *Journal of Public Relations Research, 19*, 167–197.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford.
- Kramer, M. W., Dougherty, D. S., & Pierce, T. A. (2004). Managing uncertainty during a corporate acquisition: A longitudinal study of communication during an airline acquisition. *Human Communication Research, 30*, 71–101.
- Ku, H. Y., Lahman, M. K. E., Yeh, H. T., & Cheng, Y. C. (2008). Into the academy: Preparing and mentoring international doctoral students. *Educational Technology Research and Development, 56*, 365–377.
- Ledingham, J. A., & Bruning, S. D. (1998). Relationship management in public relations: Dimensions of an organization–public relationship. *Public Relations Review, 24*, 55–65.
- Ledingham, J. A., & Bruning, S. D. (Eds.). (2000). *Public relations as relationship management: A relational approach to the study and practice of public relations*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Li, R. Y., & Kaye, M. (1998). Understanding overseas students' concerns and problems. *Journal of Higher Education Policy and Management, 20*, 41–50.
- Loehlin, J. C. (1997). *Latent variable models: An introduction to factor, path, and structural analysis* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Lorraine, B. (2008). The incidence of study-related stress in international students in the initial stage of the international sojourn. *Journal of Studies in International Education, 12*, 5–28.
- Maddox, R. C. (1993). *Cross-cultural problems in international business: The role of the cultural integration function*. Westport, CT: Quorum.
- Meyer, J. P., & Allen, N. (1984). Testing the side-best theory of organizational commitment: Some methodological considerations. *Journal of Applied Psychology, 69*, 372–378.
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of marketing research: The dynamics of trust within and between organizations. *Journal of Marketing Research, 29*, 314–329.
- Olivas, M., & Li, C. S. (2006). Understanding stressors of international students in higher education: What college counselors and personnel need to know. *Journal of Instructional Psychology, 33*, 217–222.

- Opotow, S. (1990). Moral exclusion and injustice: An introduction. *Journal of Social Issues, 46*, 1–20.
- Parks, M. R., & Adelman, M. B. (1983). Communication networks and the development of romantic relationships: An expansion of uncertainty reduction theory. *Human Communication Research, 10*, 55–80.
- Poyrazli, S., & Grahame, K. M. (2007). Barriers to adjustment: Needs of international students within a semi-urban campus community. *Journal of Instructional Psychology, 34*, 28–45.
- Ryan, D., Markowski, K., Ura, D., & Liu-Chiang, C. Y. (1998). International nursing education: Challenges and strategies for success. *Journal of Professional Nursing, 14*, 69–77.
- Schillewaert, N., Langerak, F., & Duhamel, T. (1998). Non-probability sampling for WWW surveys: A comparison of methods. *Journal of the Market Research Society, 40*, 307–322.
- Sha, B.-L. (2006). Cultural identity in the segmentation of publics: An emerging theory of inter-cultural public relations. *Journal of Public Relations Research, 18*, 45–65.
- Sriramesh, K., & Vercic, D. (2003). *The global public relations handbook: Theory, research, practice*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Stafford, L. (2003). Maintaining romantic relationships: A summary and analysis of one research program. In D. J. Canary & M. Dainton (Eds.), *Maintaining relationships through communication: Relational, contextual, and cultural variations* (pp. 51–77). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stafford, L., & Canary, D. J. (1991). Maintenance strategies and romantic relationship type, gender, and relational characteristics. *Journal of Social and Personal Relationships, 8*, 217–242.
- Stafford, L., Dainton, M., & Haas, S. M. (2000). Measuring routine and strategic relational maintenance: Scale revision, sex versus gender roles, and the prediction of relational characteristics. *Communication Monographs, 3*, 306–323.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *International Journal of Intercultural Relations, 13*, 203–219.
- Tayeb, M. H. (2000). *The management of international enterprises: A socio-political view*. New York: St. Martin's Press.
- University of Colorado at Boulder. (1996). *Senior and alumni survey data collection: Sampling methodology and response rates*. Retrieved September 11, 2009, from <http://www.colorado.edu/SARS/srsurvey/sample.htm>
- van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Newbury Park, CA: Sage.
- Wilton, L., & Constantine, M. G. (2003). Length of residence, cultural adjustment difficulties, and psychological distress symptoms in Asian and Latin American international students. *Journal of College Counseling, 6*, 177–186.
- Yang, S. U. (2007). An integrated model for organization–public relational outcomes, organizational reputation, and their antecedents. *Journal of Public Relations Research, 19*, 91–121.
- Zhang, Y. (2000). Using the Internet for survey research: A case study. *Journal of the American Society for Information Science, 51*, 57–68.

APPENDIX
Instruments for the Independent Variables, Mediators, and Outcome Variables

<i>Items</i>	<i>Factor loading</i>
Access	
I would like to characterize my communication with the university as superficial versus intimate/in-depth	.73
pleasant versus unpleasant	.80
My experience with the university could be characterized as mostly not cooperative versus cooperative	.70
I feel my status with others in the university is mostly not equal versus equal	.65
Positivity	
Now that you have been here in the department at this university, to what extent has your experience with the university been:	
negative versus positive	.88
not pleasant versus pleasant	.90
unfavorable versus favorable	.88
Openness	
To what extent does your university share information with you about the general policies (never versus all the time)	.85
policies important or relevant to your work or study (never versus all the time)	.86
university rules and regulations (never versus all the time)	.87
Legitimacy	
I perceive that the decision makers believe that more contact with students may threaten the university's well-being.	.71
I perceive that the decision makers believe that their behavior is proper even if it may be harmful to the students.	.74
I perceive that when there is a problem in the university involving a student, the decision makers usually place the blame on the students.	.77
Networking	
The people in my network have visited the university.	.78
The people in my network have met at least two other people from my university.	.87
My university communicate (in different ways) with the people in my network.	.65
Task	
The university helps more with tasks important for me as a student than for the university as a whole.	.83
The university shares in the joint responsibilities facing me as a student as well as the university overall.	.82
The university is concerned more about me as a student than the university as a whole.	.78
Uncertainty	
I'm accurate at interpreting the university's mission.	.79
I'm accurate at understanding the university's climate.	.81
I can understand the university's culture.	.76
I can put myself into the university's position.	.80
I know the university very well.	.79

(Continued)

APPENDIX
Continued

<i>Items</i>	<i>Factor loading</i>
Anxiety	
When I communicate in the university, I often feel	
frustrated	.79
easily irritated	.80
awkward	.81
defensive	.80
Control Mutuality	
Generally, the university and I are both satisfied with the decision-making process.	.77
In most cases, during decision making both the university and I have equal influence.	.79
Both the university and I agree on what we can expect from one another.	.82
Both the university and I have symmetrical pay-gain relationships.	.86
Trust	
Members of the university administration are truthful with me.	.87
The university treats me fairly and justly, compared to other similar organizations.	.84
The university keeps its promises.	.87
Satisfaction	
Generally speaking, the university meets my needs.	.83
In general, I'm satisfied with the relationship with the university.	.93
My relationship with the university is good.	.95
Commitment	
I do not wish to continue a relationship with the university.	.69
I believe that it is worthwhile to try to maintain the relationship with the university.	.85
I wish to keep a long-lasting relationship with the university.	.82
I wish to keep a long-lasting relationship with the university.	.82
I wish I had never entered into the relationship with the university.	.71