The Development of Intercultural and Interethnic Communication Apprehension Scales

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Intercultural communication apprehension (ICA) is conceptualized as the fear or anxiety associated with either real or anticipated interaction with people of different groups, especially cultural and ethnic and/or racial groups. Based on this conceptualization, two scales were developed, including the Personal Report of Intercultural Communication Apprehension (PRICA) and the Personal Report of Interethnic Communication Apprehension (PRECA). In Study I, the initial scales consisted of 16 items each and were administered to 396 participants. Factor analyses reveal a unidimensional factor structure and high reliabilities for both scales. Construct validity measures were also administered in Study I. In Study II, modified versions of both scales along with criterion-related validity items were administered to 369 participants. Factor analyses confirmed the unidimensional factor structure of both scales. Responses to the predictor items indicate that both scales possess criterion-related validity.

In the past twenty-five years a substantial amount of research has accumulated regarding the nature and prevalence of communication apprehension (CA). Defined by McCroskey (1977a) as the fear or anxiety associated with either real or anticipated interaction with others, several researchers argue that no other variable in communication research has received as much attention (e.g., see Levine & McCroskey, 1990; Lustig & Andersen, 1991; Payne & Richmond, 1984). Other constructs related to communication apprehension have been studied extensively as well, including talkativeness (McCroskey, 1977b; McCroskey & Richmond, 1993), and communication avoidance or reticence (Burgoon, 1976; McCroskey & Richmond,

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to increased anxiety include novelty, unfamiliarity, and dissimilarity. Hence, those situations containing new, atypical, and/or conspicuously different stimuli are likely to increase one's sense of anxiety. Based on Buss's (1980) criteria, initial interaction with someone, or interacting with strangers, may produce heightened anxiety in persons. Berger and Calabrese (1975) argue that whenever two people come together and interact for the first time, they have a very limited amount of information about each other. In such circumstances, considerable uncertainty exists. High levels of uncertainty lead to increased anxiety. Berger and Calabrese (1975) argue that in such situations the primary goal of the interactants is to reduce uncertainty and to increase the predictability about the other. This can be accomplished via specific communication strategies, such as information seeking and nonverbal affiliative expressiveness.

One type of communication situation that is potentially replete with novelty, unfamiliarity, dissimilarity, and uncertainty is intercultural communication. Gudykunst and Kim (1997) argue that when individuals are confronted with cultural differences they tend to view people from other cultures as strangers. Strangers are unknown people who are members of different groups. Anyone entering a relatively unknown or unfamiliar environment falls under the rubric of stranger. In their conceptualization, Gudykunst and Kim (1997) contend that interaction with people from cultures other than our own tend to involve the highest degree of strangeness and the lowest degree of familiarity. Thus, there is greater uncertainty in initial interaction with strangers than with people who are familiar. In such circumstances not only is uncertainty high but so is anxiety. According to Gudykunst and Kim (1997), actual or anticipated interaction with members of different groups (e.g., cultures or ethnic groups different from our own) leads to anxiety. This type of communication anxiety can be labeled intercultural communication apprehension; that is, the fear or anxiety associated with either real or anticipated interaction with people from different groups, especially different cultural or ethnic groups.

Intercultural communication in the United States (US) is virtually unavoidable. Lustig and Koester (1996) argue, for example, that the US is in the midst of the largest and most extensive wave of cultural mixing in history. Moreover, they contend that the political and economic effectiveness of the US depends on the individual and collective abilities to communicate competently with people from different cultures. Given that intercultural communication may be more anxiety producing than other forms of communication, the number of people suffering from intercultural communication apprehension (ICA) may be considerable. Identifying such individuals may be the first step toward more effective and successful intercultural communication. To date, however, researchers in communication have yet to develop an instrument that reliably measures ICA. None of the earlier versions of the PRCA include items pertaining to intercultural communication contexts. To be sure, researchers have studied CA in other cultures, including Australia (Hutchinson, Neuliep, & More, 1995; Klopf, 1984), Korea (Klopf, 1984), Puerto Rico (McCroskey, Fayer, & Richmond, 1985), Japan (Klopf, 1984), and China (Klopf & Cambra, 1979), and Sweden (Watson, Monroe, & Atterstrom, 1989). This work, however, focused on the problem of CA within individual, but different, cultures. The concern of the present research is the CA people experience when confronted by communication with people who are from ethnic or cultural backgrounds different than their own. Interethnic and intercultural contacts are contexts for CA much like the four contexts represented in the PRCA (i.e., dyadic, group, meeting, and public). The purpose of this study, then, is to report on an initial attempt to develop the Personal Report of Intercultural Communication

Apprehension (PRICA) and the Personal Report of Interethnic Communication Apprehension (PRECA).

STUDY I: INITIAL SCALE DEVELOPMENT OF THE PRICA AND PRECA
Method & Procedures

Thirty-two items, half worded positively and half worded negatively, were written according to a conceptualization of intercultural communication apprehension (ICA) as the fear or anxiety associated with either real or anticipated communication with people from different groups, especially cultural and/or ethnic groups. The scale was modeled directly after the PRCA24. Sixteen items, half positive and half negative, were written to reflect interaction with people from different cultures. These items constituted the initial version of the Personal Report of Intercultural Communication Apprehension (PRICA). The other sixteen items, half positive and half negative, were written to reflect interaction with people from different ethnic and/or racial groups. These items constituted the initial version of the Personal Report of Interethnic Communication Apprehension (PRECA).

The initial version of the PRICA and PRECA were administered to 396 students enrolled at a four year liberal arts college in the Midwestern United States in a metropolitan area of approximately 200,000 people. One hundred and thirty-six of the participants were male and 256 were female. The average age of the participants was 19.3 years. Approximately 97 percent of the participants were Caucasian, 2 percent were Native American and 1 percent were of other cultural or racial origin. Half of the participants (N = 196) also completed the PRCA-24 while the other half (N = 200) completed the Verbal Aggressiveness scale (Infante & Wigley, 1986). The PRCA was chosen because the intercultural and interethnic contexts were expected to correlate with the four contexts represented in the PRCA. Verbal aggressiveness was chosen as a discriminant validity test; it should not be highly correlated.

A series of exploratory factor analyses were conducted on both the PRICA and PRECA. To isolate factors a minimum loading of .40 was used, with the secondary loading being approximately .20 less than the primary loading (Stevens, 1986). Because a unidimensional scale was expected for both scales, a forced two factor unrotated maximum likelihood analysis was employed. The maximum likelihood procedure is a method of obtaining the initial factor solution which seeks to identify the population parameters with a maximum likelihood of generating the observed sample distribution.

PRICA Results.

The factor analysis produced a two factor solution with 14 items loading on the first factor. Two items, Item #1 ("I dislike interacting with people from different cultures") and Item #15 ("I enjoy interacting with people from different cultures") loaded on a second factor. The first factor had an eigenvalue of 8.23 and accounted for 51.5% of the variance. The second factor had an eigenvalue of .69 and accounted for 4.3% of the variance. Only two items loaded at above the .40 criteria on the second factor, and both of those items loaded higher on the first factor. A Scree test indicated that a one factor solution was the most parsimonious interpretation of the factor structure. Reliability for the scale, including all 16 items, as determined by Cronbach's alpha was .942. As expected the PRICA was significantly correlated with the PRCA24, $r(196) = .58, p < .01$, and with PRECA $r(396) = .68, p < .01$. Also as expected, PRICA scores were not significantly related to Verbal Aggressiveness scores, $r(200) = -.01, p > .05$. Men in this sample ($M = 34.6$)

scored higher than women ($M = 32.3$), t (390) = 1.96, $p = .05$. The 16 item PRICA and factor loadings are presented in Table 1.

TABLE 1
The Personal Report of Intercultural Communication Apprehension Factor Loadings

| | Study I | | Study II | |
Scale Item	Factor 1	Factor 2	Factor 1	Factor 2
1. I dislike interacting with people from different cultures.	.53	-.46	na	na
2. Generally, I am comfortable interacting with a group of people from different cultures.	-.62	.22	-.69	.12
3. I am tense and nervous while interacting with people from different cultures.	.77	.09	.82	.13
4. I like to get involved in group discussions with others who are from different cultures.	-.57	.25	-.61	.11
5. Engaging in a group discussion with people from different cultures makes me tense and nervous.	.72	.13	.81	.08
6. I am calm and relaxed with interacting with a group of people who are from different cultures.	-.82	-.15	-.80	.30
7. While participating in a conversation with a person from a different culture, I feel very nervous.	.74	.13	.80	.07
8. I have no fear of speaking up - in a conversation with a person from a different culture.	-.63	.08	-.70	-.00
9. Ordinarily I am very tense and nervous in conversations with a person from a different culture.	.79	.14	.82	.22
10. Ordinarily I am very calm and relaxed in conversations with a person from a different culture.	-.85	-.12	-.82	.19
11. While conversing with a person from a different culture I feel very relaxed.	-.82	-.12	-.70	.23
12. I'm afraid to speak up in conversations with a person from a different culture.	.71	-.07	.68	.20
13. I face the prospect of interacting with people from different cultures with confidence.	-.73	.03	-.61	-.01
14. My thoughts become confused and jumbled when interacting with people from different cultures	.67	-.02	.65	.26
15. I enjoy interacting with people from different cultures.	-.62	.47	na	na
16. Communicating with people from different cultures makes me feel uncomfortable.	.73	-.08	.68	.10
Eigenvalue	8.23	.69	7.61	.422
Percent of Variance	51.5	4.3	54.4	3.0

PRECA Results.

The factor analysis produced a two factor solution with 14 items loading on the first factor Two items did not meet the criteria of a .20 difference between loadings on separate factors including Item #1 ("I dislike interacting with people from different ethnic and/or racia groups") and Item #15 ("I enjoy interacting with people from different ethnic and/or racia groups"). These items are analogous to the items that did not load on the first factor with the PRICA. In this solution, the first factor had an eigenvalue of 7.78 and accounted for 48.7% of the variance. The second factor had an eigenvalue 3.00 and accounted for 18.8% of the variance. Reliability for the scale, including all 16 items, as determined by Cronbach's alpha was .971. As expected the PRECA was significantly correlated with the PRCA24, r (196) = .51, $p < .01$, and with PRICA r (396) = .68, $p < .01$. Also as expected, PRECA scores were not significantly related to Verbal Aggressiveness scores, r (200) = .12, $p > .05$. Men in this sample ($M = 35.2$) scored higher than women ($M = 32.7$), t (390) = 1.73, $p > .05$, but the difference was not significant. The 16 item PRECA and factor loadings are presented in Table 2.

TABLE 2
The Personal Report of Interethnic Communication Apprehension Factor Loadings

Scale Item	Study I Factor 1	Factor 2	Study II Factor 1	Factor 2
1. I dislike interacting with people from different ethnic/racial groups	-.53	.40	na	na
2. Generally, I am comfortable interacting with a group of people from different ethnic/racial groups.	.65	.47	-.62	.32
3. I am tense and nervous while interacting with people from different ethnic/racial groups.	-.72	.45	.68	-.17
4. I like to get involved in group discussions with others who are from different ethnic/racial groups.	.66	.43	-.53	.14
5. Engaging in a group discussion with people from different ethnic/racial groups makes me tense and nervous.	-.77	.45	.69	-.17
6. I am calm and relaxed with interacting with a group of people who are from different ethnic/racial groups.	.79	.42	-.77	.34
7. While participating in a conversation with a person from a different ethnic/racial groups, I feel very nervous.	-.73	.46	.69	.16
8. I have no fear of speaking up in a conversation with a person from a different ethnic/racial group.	.64	.41	-.58	-.16
9. Ordinarily I am very tense and nervous in conversations with a person from a different ethnic/racial group.	-.78	.44	.79	.23
10. Ordinarily I am very calm and relaxed in conversations with a person from a different ethnic/racial group.	.78	.42	-.78	-.07

TABLE 2 (continuted)

The Personal Report of Interethnic Communication Apprehension Factor Loadings

Scale Item	Study I Factor 1	Factor 2	Study II Factor 1	Factor 2
11. While conversing with a person from a different ethnic/racial group, I feel very relaxed.	.76	.42	-.70	.02
12. I'm afraid to speak up in conversations with a person from a different ethnic/racial group.	-.70	.37	.62	.32
13. I face the prospect of interacting with people from different ethnic/racial groups with confidence.	.70	.42	-.65	-.01
14. My thoughts become confused and jumbled when interacting with people from different ethnic/racial groups	-.63	.41	.58	.30
15. I enjoy interacting with people from different ethnic/racial groups.	.57	.46	na	na
16. Communicating with people from different ethnic/racial groups makes me feel uncomfortable.	-.60	.41	.66	.08
Eigenvalue	7.78	3.0	6.35	.62
Percent of Variance	48.7	18.8	45.5	4.5

STUDY II: SCALE DEVELOPMENT OF MODIFIED PRICA AND PRECA

Method and Procedures.

Based on the results of Study I, modified versions of the PRICA and PRECA were administered to 369 undergraduate students enrolled in communication courses at a large eastern university. One hundred and seventy-nine participants were male and 174 were female. Approximately 20 percent were firt-year students, 30 percent were sophomores, 30 percent were juniors and 20 percent were seniors. The average age was 20.2 years. Approximately 97 percent were Caucasian, 2 percent were African-American, and 1 percent were classified as Other.

The two items which did not load on the earlier versions of the scales were eliminated from the PRICA and the PRECA. In order to address validity issues, participants were asked several questions pertaining to (a) the size of their home town/city, (b) the frequency of travel outside their home state, (c) the number of people in their home town of the same race, (d) their frequency of contact with people from different countries, and (e) their frequency of contact with people from different races.

Based on the results of Study I, a unidimensional scale was expected for both scales. To isolate factors a minimum loading of .40 was used, with the secondary loading being approximately .20 less than the primary loading (Stevens, 1986). As in Study I, a forced two factor unrotated maximum likelihood analysis produced the most interpretable results.

PRICA Results

The factor analysis produced a two factor solution with all 14 items loading above

.60 on the first factor. None of the items loaded on the second factor. In this solution, the first factor had an eigenvalue of 7.61 and accounted for 54.4% of the variance. The second factor had an eigenvalue .42 and accounted for 3.0% of the variance. Reliability for the scale, including all 14 items, as determined by Cronbach's alpha was .941. Men in this sample ($M = 30.9$) scored higher than women ($M = 27.9$), $t(351) = 2.86, p < .05$.. As expected, PRICA scores were significantly correlated with the PRECA scores, $r(369) = .85, p < .01$. PRICA scores were negatively and significantly correlated with the frequency of contact with people from other countries $r(369) = -.11, p < .05$. PRICA scores were also negatively correlated with the frequency of contact with people of another race, $r(369) = -.09, p > .05$, but the correlation was not statistically significant. In addition, PRICA scores were not significantly correlated with the size of the participant's hometown, $r(369) = .00, p > .05$, how often the participants traveled outside their home state $r(369) = .00, p > .05$, or the number of people in the participants' hometown of the same race, $r(369) = .04, p > .05$. The factor loadings for the PRICA for Study II are presented in Table 1.

PRECA Results

The factor analysis produced a two factor solution with all of the items loading on the first factor. None of the items loaded on the second factor. In this solution, the first factor had an eigenvalue of 6.35 and accounted for 45.4% of the variance. The second factor had an eigenvalue of .62 and accounted for 4.5% of the variance. Reliability for the scale, including all 14 items, as determined by Cronbach's alpha was .915. Men in this sample (M = 31.6) scored higher than women (M = 29.2), $t(351) = 2.34, p < .05$. As expected, PRECA scores were significantly correlated with the PRICA scores, $r(369) = .85, p < .01$. PRECA scores were negatively and significantly correlated with the frequency of contact with people from other countries $r(369) = -.13, p < .05$. PRECA scores were also negatively correlated with the frequency of contact with people of another race, $r(369) = -.11, p < .05$. In addition, PRECA scores were not significantly correlated with the size of the participant's hometown, $r(369) = .01, p > .05$, how often the participants traveled outside their home state $r(369) = .02, p > .05$, or the number of people in the participants' hometown of the same race, $r(369) = .04$. The factor loadings for the PRECA for Study II are presented in Table 2.

DISCUSSION

Intercultural communication apprehension (ICA) is defined the fear or anxiety associated with either real or anticipated interaction with people from different groups, especially different cultural or ethnic groups. Conceptually, ICA represents a context of communication marked with unusually high uncertainty. Such uncertainty leads to high anxiety, a causal ingredient in communication apprehension. Intercultural communication contexts are consistent with Buss's (1980) argument that the salient situational features leading to increased anxiety include novelty, unfamiliarity, and dissimilarity. The PRICA and PRECA evolved from this conceptualization of intercultural communication in order to facilitate research in this area of communication study.

The results of the two studies presented indicate that the PRICA and PRECA are reliable and generally valid. Both scales appear to be unidimensional. Reliabilities on both scales across two different samples are quite high indicating that both scales are stable.

Although reliability is no guarantee of validity, any scale is of little use to researchers without it. Regarding validity, though more research is clearly warranted, both scales appear to possess content, construct, and predictive validity.

Regarding content validity, the scale appears valid. Conceptually ICA relates to a person's fear or anxiety with communicating with people from different cultural or racial groups. Thus, the measure of one's ICA should focus on those circumstances where an individual is interacting with people from different cultures and/or ethnic and/or racial groups. Each of the items on the PRICA deal with communication with people from different cultures. Each of the items on the PRECA deal with interacting with people from different ethnic and/or racial groups. As noted previously, the items were directly modeling after the PRCA24, which is a recognized valid operationalization of communication apprehension. In addition, though any individual's responses to the items might vary considerably, it was expected that both measures were unidimensional. The factor analyses in both studies support unidimensionality.

The results of both studies lend initial support for the construct validity of both scales. Although the two constructs are not isomorphic with communication apprehension (CA), it was expected that PRICA and PRECA scores, as a special context of CA, would be related to PRCA24. It was also expected that PRICA and PRECA would not be related to Verbal Aggressiveness, and they were not. Finally, given the conceptual similarities between PRICA and PRECA, scales were expected to be highly correlated. These significant correlations indicate that these participants respond to people of different ethnic groups much like they respond to people of different cultural groups. This is key because it indicates that differences, whether cultural or ethnic, stimulate CA. If the participants responded to ethnically different groups as just like anyone else they talk to but respond to "foreigners" who are culturally different in a very different way, the correlation between PRICA and PRECA would be very low. Future research should continue this line of scale development with other theoretically related, yet distinct, concepts such as intergroup anxiety (Stephan & Stephan, 1992) argumentativeness (Infante & Rancer, 1982), willingness to communicate (McCroskey & Richmond, 1987), assertiveness/responsiveness (McCroskey & Richmond, 1996), and others.

Regarding the third type of validity, criterion-related validity, both the PRICA and PRECA are predictive of actual communicative behavior. In Study II, both scales were shown to be predictive of the frequency of contact with people from a different country. In addition, the PRECA was predictive the frequency of contact with people of another race whereas as the PRICA was not. This is not completely unexpected since the PRECA measures interethnic communication apprehension while the PRICA focuses on cultural differences that may not be related to race. That one's hometown, frequency of travel outside of one's state, and racial make-up of one's hometown were not correlated with either scale is not necessarily indicative of either scale's lack of predictive validity. The participants completing these scales were from a large eastern university where the influence of one's hometown size might be mediated by the context of a large, heterogeneous university population. That one's travel experience is not related might simply be due to the fact that travelling outside one's home state does not necessarily guarantee contact with people from different cultures, races or ethnicities. Validity might be improved by employing a greater range of intercultural situations on the PRICA and PRECA. Neither scale, for example, specifies a particular context. Participants might find

it easier to respond to formal situations (e.g., meetings, speeches, groups) and clearly defined contexts. Respondents may be thinking about the same context for all of the questions which leads to high reliability but does not help the validity of the scale.

Given further refinement and development, communication researchers are encouraged to employ both scales in their research. These scales could be useful in a variety of contexts. For example, given the increasing racial and cultural diversity on college campuses, the scale could be administered to teachers, teaching assistants, and students. In multicultural classrooms, relationships between ICA, immediacy, learning, and teacher affect could be assessed. Within multinational organizations, the scales could be administered to managers and employees to predict potential problems in culturally, ethnically, and/or racially diverse work settings. In these types of organizations, ineffective managerial/subordinate communication could very well be related to ICA. Governmental agencies sending diplomats aboard could employ the scales as a screening device. Prior to negotiating an international trade agreement, governmental agents could be tested for their level of ICA and its potential impact on their performance. To be sure, these scales open the door to a variety applications for communication researchers.

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