Changing Stereotypes in Iran and Canada Using Computer Mediated Communication

Mahin Tavakoli

St Francis Xavier University, Canada

Javad Hatami

Tehran University, Iran

Warren Thorngate

Carleton University, Canada

Abstract

As part of a university course activity, one group of Canadian and one group of Iranian students were randomly partnered to exchange e-mail messages via the Internet for seven weeks. Before beginning their correspondence, all students completed a questionnaire measuring their stereotypes, attitudes, and knowledge about the people and culture of their prospective e-pals. Students from both countries then exchanged messages and photos. In addition, students within each country met with one another to discuss their e-pal exchanges each week. At the end of seven weeks of e-mail exchange, all students again completed the original questionnaire. Pre-posttest changes in attitude, stereotypes, and knowledge about the culture of e-pals show that attitudes of participants towards people from the other country became more favourable, even though their judgments of the similarities between two cultures remained unchanged. Negative stereotypes changed towards more realistic ones. Attitude change was affected by the quality, topic, and frequency of e-mail exchange. Knowledge of participants about different aspects of the other culture became more complex and realistic over time. However, for many aspects of each culture, there was no consistent relationship between raising the level of knowledge and a change in attitude.

Key words: Intercultural communication, computer mediated communication (CMC), Iran and Canada, attitude change, stereotype change, intercultural understanding, e-pals, pen-pals.

Introduction

Computer mediated communication (CMC) is replacing other communication media such as the traditional mail and telephone calls (Holt 2004). The importance of CMC in every-day civic discourse has given some authors the impression that this kind of communication is not just a technological achievement; it is also a social and psychological success (Shedletsky & Aitken 2004).

The amount and kind of information that is now accessible via the Internet could hardly be available to people otherwise (Chesboro & Donald 1989). Speed, flexibility, efficiency, immediacy, anonymity, democratic self expression, diversity of audience and global reach are a few advantages of CMC over the conventional means of communication (Holt 2004).

Despite the advantages and diverse effects of CMC on human interaction, most research about CMC has focused only on online friendships (e.g., Chenault 1998; Parks & Floyd 1996; Chesboro & Donald 1989; Parks & Adelman 1983; Wheeler 2001, 2003). Researchers have documented how CMC can lead to the development of friendship and sometimes to marriage (e.g., Parks 2000, 2007). Yet the unique potentials of CMC as a medium of civic discourse and debates between different ideologies and cultures, and between people of different backgrounds (Holt 2004), has not yet attracted much research attention. The primary purpose of the present study was to determine if CMC could be employed to change stereotypes

and to increase cross-cultural understanding between members of a Moslem country and members of a North American country.

As Ess (2001) notes, while there is a significant body of research in intercultural communication, cross-cultural CMC is relatively ignored. Ess reports that the first conference on "Cultural Attitudes towards Technology and Communication (CATaC'1998)" did address the subject of CMC in many cultural domains, including North-South, East-West, Industralized-Industralizing, and Colonial-Indigenous countries. However, missing from the list were representations from Islamic/Arabic countries, and from countries such as China and France. In an attempt to offer more information about experiences with CMC in dialogues between the Islamic and Western worlds, our paper attempts to present findings of an experiment to establish a computer-mediated dialogue between a group of Canadian students and a group of Iranian university students.

A body of research on intercultural CMC originates from the discipline of education (e.g., Ceprano & Garan 1998; Harmston, Strong, & Evans 2001; Schoorman 2002; Stanford & Siders 2001). Most of this literature reports e-mail exchanges among school age children from the same geographical region, exchanges planned to facilitate academic achievements of students in reading, writing, literature, language, arts, etc. (e.g. Beazely 1989; Finegan-Stoll 1998; Harmstone, Strong, & Evans 2001).

A few pen-pal projects have encouraged communication between students from different geographical regions (e.g., Shulman 2001). As with local exchanges, the main purpose of these projects was to accelerate learning of academic materials. Learning about another culture has been reported as a valuable consequence of some of those projects (e.g. Liu 2003; Salmon & Akaran 2001). But few educators, social psychologists, and communication specialists have investigated intercultural CMC undertaken primarily for the purpose of changing attitudes and stereotypes and developing understanding between young adults from two different cultures by corresponding individually and directly. In our project, we encouraged intercultural communication among university students living in two countries with very different cultures: Canada and Iran. We used the opportunity to determine if we could change attitudes and stereotypes, and develop cross-cultural understanding among participant students.

Communication Instrumental to Attitude Change

Attitude change and stereotype change have been central to the studies done by pioneers of social psychology. Lewin's (1948) studies on attitude change made him believe that the adequacy or inadequacy of knowledge affects people's judgements of others towards those others. Sherif (1967), as well, believed that accurate information can change false stereotypes among diverse groups of people. Allport (1967) suggested that positive attitudes among peoples of diverse racial or cultural groups can be formed through exchange of knowledge about each others' characteristics. However, taking into consideration the complexity of attitudes and their resistance to change, Lewin (1948) suggests that knowledge and emotion can be independent to some extent, and that a change in the cognitive component of attitude is not always followed by a change in its emotional component.

Contact theories in social psychology suggest that changing attitudes and stereotypes requires specific physical experiences and contacts such as involvement in interesting joint activities and personal contact (Sherif & Sherif 1953). However, not all enjoyable personal contact is effective in changing attitudes. Studies on African-American-White relations (Lewin 1948) show that positive experiences from mixed schools and frequent mingling with members of another group do not necessarily change stereotypes among group. Personal contact needs to be planned purposefully so that it can succeed in changing stereotypes and improving understanding (Lewin 1948).

Cooperation for achieving a super-ordinate goal is an example of a planned activity that can change stereotypes (Sherif 1967). By pursuing super-ordinate goals, conflicting groups can be involved in social contacts and personal cooperation to achieve desired objectives that otherwise could not be achieved alone. Research also suggests communicative competence, similarity of the individuals, duration of contact, and variation of context of contact as other variables influencing the effectiveness of contact in changing attitudes and stereotypes (Gareis 1995; Stephan 1985).

In sum, classic and contemporary social psychological studies consistently show that personal contact and super-ordinate goals are crucial to reduce negative attitudes and stereotypes. Yet, since the classic

studies were reported, the world has changed. Now a considerable amount of negative attitudes and stereotypes vitiate relationships between countries rather than between groups within a country. Reducing negative attitudes and stereotypes between people of different countries presents special challenges. In the modern world in which communications are dominated by the Internet, how can personal contact and super-ordinate goals be created in an intercultural context?

CMC and Attitude Change in an Intercultural Context: Pen-pal Studies

Development of the Internet has afforded worldwide communications that otherwise would be difficult or impossible. If used properly, computer mediated communications (CMC), which are normally motivated by a need for establishment of a companionship (Shulman & Seiffge-Krenke 1994) might be a powerful tool for changing stereotypes and for developing understanding among diverse groups of people (e.g., Liu 2003; Salmon & Akaran 2001). A project that aimed to educate students in areas such as literature, social science, science, math, geography, art, and computer skills, connected New Jersey first graders to Alaskan Eskimo kindergarten children. Every month each class, on behalf of all students, sent the other class an e-mail, regular mail, or list of questions. Occasionally they exchanged a class-made book, a video game, or a piece of artwork. Students often conducted group studies in class research to answer questions sent by the other group. This joint activity gave the students practice to learn academic subjects and raised the level of responsibility, understanding, and respect towards the other culture, as well as about their own culture (Salmon & Akaran 2001).

A similar project, designed to improve students' English language and typewriting skills, encouraged e-mail exchanges between Chinese and American second graders (Liu 2003). Each class wrote and sent letters to the other class, while their teachers assisted students with writing, translating, and sending the e-mail, photocopying the responses they received and giving copies to each student to take home and share with parents. Data suggested that pen-pal communication increased motivation for learning literature, improved language skills, and increase knowledge about the other culture (Liu 2003).

Caucasian American university students e-mailed South African university students and exchanged ideas about race issues, westernization, cultural traditions, AIDs, crimes, and economical problems. Only the messages written by 10 American students were analysed and reported. Those messages showed that communication via the Internet increased Caucasian American students' knowledge about the people and culture of their South African pen-pals (Eastmond & Lester, 2001).

A few pen-pal projects have been designed as part of teacher training programs (e.g. Briggs & Costelink, 1994; Schoorman, 2002). One of these projects, aimed to enhance the multicultural awareness of pre-service teachers, facilitated e-mail correspondence among groups of teachers and students with diverse cultural backgrounds living in the same area (Schoorman 2002). Junior high-school students wrote weekly letters to a pre-service teacher. The pre-service teachers responded by emailing the teacher of those students, who then delivered the response to the students. Data were obtained from letters written by students, a questionnaire completed by students, and reports written by pre-service teachers. The findings show that both stereotypes and knowledge of teachers about the other's cultures improved (Schoorman 2002).

Pen-pal communications has also acted as a means of peer support. Hawaii and Mott Haven mothers and grandmothers who were the main care-providers for their children with serious emotional disorders exchanged information via a joint website and voluntarily made phone calls. They shared the challenges they faced with raising their children and exchanged advice on how to handle their problems with raising an exceptional child. The project promoted a sense of family between participant care-providers. It also provided them with new insights about their children's problems, and made them more involved in social activities that could be helpful to their children (Thoth-Denis & Pahinui 1999).

Neither educators nor social psychologists have studied psychological aspects of attitude and stereotype change and cultural awareness among young adult e-pals from two different continents, corresponding individually and directly. Our project aims to explore these aspects of CMC between two groups of university students: one group currently living in Canada and the other currently living in Iran.

Is CMC an Ideal Means of Communication?

The success of CMC in changing attitudes and stereotypes and improving understanding among people does not suggest that CMC is ideal. Potential weaknesses of CMC are documented in different ways. From one side, CMC has the potential to dehumanize communication, because the computer screen cannot show emotional and personality cues (e.g., physical appearance, facial expressions) that exist in other media of communication such as face-to-face meetings (e.g., Chesboro & Donald 1989; Holt 2004). Besides, CMC does not provide access to handwriting style and paralinguistic cues such as pauses, tones, and vocalizations. There are no gaze behaviors available when using CMC. CMC may promote deception either because of the low possibility of verifying electronic information, or because of ease of transmitting false information, hiding true information, and manipulating information. Considering all these limitations, Holt (2004) suggests that the discussions using CMC are far from the convention of "proper" debate. It is noteworthy that while running our project, we were faced with some of these limitations of CMC.

Because of the psychological requirements for successful CMC, access to the Internet does not itself guarantee success in creating closeness or understanding among different groups of people; rather, communicators need something beyond the technology (Hacker & Steiner 2001). We need to determine effective strategies for interacting via the Internet (Rogers 1999). For example, communicators need to be skilful enough to use the medium comfortably. Otherwise a high level of anxiety and low level of motivation can inhibit effective communication through the Internet. "It is not a question of if we will use technology to communicate with each other; it's a question of when, how, and how well" we use it (Harris & Sherblom 2005, p.316-317). The present article reports how we tried and tested a few strategies of CMC for creating understanding and changing attitudes and stereotypes among Iranians and Canadians.

Method

Participants

Thirty-five undergraduate university students (18 Canadians and 17 Iranians) participated in this project. The Canadian participants were aged 19-43 (median 21); 17 were females and one was male, 10 born in Canada, two born in Somalia, one in each of Jamaica, Korea, Sri Lanka, Pakistan, Iran, and Kuwait. All were Carleton university students living in Ottawa, Canada, and practiced a wide variety of religions including Christianity (6), Hinduism (1), Islam (5), and none (6). All of them were fluent in English and those having background from other countries were skilful in at least one more language (their native one).

The 17 Iranian participants, seven males and 10 females aged 19-22 (median 20), were all Moslems and university students, born in Iran, living in Tehran. Their spoken and written language was Persian, but they knew enough English to exchange written messages.

Canadian participants voluntarily joined a weekly discussion session called *Developing Cross-Cultural Friendship and Understanding among Iranians and Canadians*, which was an optional part of an introductory social psychology course. Participants in Iran voluntarily joined the project, encouraged by one of their professors, as they found the project interesting and were interested in having a Western e-pal. The researcher in Iran screened a list of interested Iranian participants and chose among them according to their English language and Internet skills. These requirements had to be met so that all Iranian and Canadian participants could send e-mail in English.

Equipment and Questionnaires

The Internet was used for communicating with peers in the other country. Participants were allowed to use any kind of computer-aided communication they wished, including e-mail, on-line chat (by MSN or Yahoo Messenger) or off-line chat, according to their own and their partner's convenience. Two of the pairs preferred to communicate through on-line chat using MSN messenger and sometimes had live conversations via MSN, believing their communication was much more fluent and easier than with email. Another pair of participants occasionally wrote through a chat system, but most of the time sent e-mails. The remaining participants exchanged ordinary e-mail for communicating with e-pals.

All participants in Iran and Canada completed a *Background Questionnaire,* and a *Cross-Cultural Understanding Questionnaire* (CCUQ), developed by the authors (see Appendix). The Background Questionnaire asked about a participant's age, gender, religion, and languages they can write, read, or speak. The CCUQ measured knowledge and attitudes of each group of participants towards the people and different features of the other culture. To identify the features of culture we used the definition of culture introduced by Scollon and Scollon (2001, p. 139) suggesting that history, beliefs, values, and religion, costumes, social organizations, education, and language are some of the features of culture that distinguish cultures. Our questionnaire consisted of five sections (see Appendix).

1. The *Knowledge and Attitudes* section of the CCUQ measured how much each group knew about different aspects of the other country's culture, including history, foods, and politics. Respondents were asked to mention facts they knew about the other country, then to list what are other country's language, institutions, traditions, religion, fashion, and marriage practices, and to rate their first impression about that part of the other culture (e.g. language, tradition, etc.) on a scale from very negative (= 0) to very positive (= 9).
2. The *Behaviour Intention* section of the CCUQ addressed willingness to establish relationships and to engage in behaviours that require a high level of trust and acceptance of people from the other culture. For example, we asked Iranians to rate how willing they would be to fall in love with Canadians, or to choose them as a roommate, using a rating scale from not at all (= 0) to very high probability (= 9).
3. The *Stereotype* section measured each group's judgement about the characteristics of typical people from the other culture in 27 pairs of bipolar attributes, for example, unfriendly (= 0) to friendly (= 9), or unintelligent (= 0) to intelligent (= 9). A post-test appendix of this section asked students to list up to three assumptions about the other culture that changed as a result of the Internet exchanges.
4. The *Perception of Similarities* section measured participants' judgement about how similar their values (including social, sexual, and family values) and their religious beliefs and practices were with those of people from the other culture. For this part, participants used a rating scale from very dissimilar (= 0) to very similar (= 9).
5. The *Evaluation of Activity* section, given at the end of seven weeks of CMC, asked students to rate on a scale from 0 to 9 how much they enjoyed the project, what they liked and disliked most about the culture of their pen-pal, and what were their most interesting and boring experiences with this project. Students finally rated their intention to continue sending e-mails to their partners and wrote comments they wished.

Procedure

Each researcher in Iran and in Canada provided the list of email addresses of Iranian and Canadian participants. Before beginning any e-mail correspondence, participants completed the Background Questionnaire and the Cross-Cultural Understanding Questionnaire. Canadian and Iranian students were then randomly assigned to groups: sixteen dyads and one triad (the triad was assigned to involve all 17 Iranians and 18 Canadians). The e-mail address of a Canadian was given to an Iranian and vice versa, and members of each pair were asked to e-mail each other, discussing whatever topics they wished. If participants did not receive e-mail from their partner after a week, they asked their local researcher for help.

Students wrote a weekly journal (diary) for the researchers, reporting the content and topics of conversations with their e-pals and discussed their emotional experiences while communicating with their partner. Participants completed the Background Questionnaire before initiating any exchanges with e-pals, and the Conclusions section of the Cross-Cultural Understanding Questionnaire, after ending the email exchanges. The remaining four sections of the CCUQ (Knowledge and Attitudes, Behavioural Intentions, Stereotypes, and Perception of Similarities) were administered twice: once as a pre-test before initiating CMC and once as a post-test.

Results

Participants exchanged information about who they are, how they live, how they think, and about their friends, family, and school. 82% of students sent photographs of themselves, their family, and cities of

their country. They taught each other, criticized each other, teased each other, and shared moments of excitement, joy, and anger. Exchange of e-mail lasted at least seven weeks, each week consuming an average of 1.5 hours. Four pairs of students who did not encounter technological problems chose to exchange e-mail more often each week.

Knowledge and Attitudes

The Knowledge and Attitudes section of the Cross-Cultural Understanding Questionnaire asked each group of participants, before and after seven weeks of communication, to rate (0 = not at all; 9 = very much) how much they knew about the other country's history, foods, culture, and politics. Then they were asked to list facts they knew about the other country. Repeated measures t-tests on ratings averaged across history, food and politics showed that, after communicating with their e-pals, Canadians and Iranians significantly increased their average self-ratings about knowledge of the other culture (Iranian t (14) = 31.7, p= 0.00; Canadian t (14) = 6.8, p= 0.00). The means for pre-post test measures of Iranians' knowledge about history, foods, culture, and politics of Canadian culture were 0.1 and 4.0. The corresponding means for Canadians' knowledge about Iranians were 1.2 and 3.9.

Next participants answered questions about their knowledge of other country's language, institutions, traditions, religion, fashion, and marriage practices before and after seven weeks of communication with their e-pals. Each time they also rated their attitude about what they knew about that aspect of the culture on a 0-9 (very negative- very positive) rating scale, 4.5 marked as the neutral point. The results are summarized in *Table 1*.

Table 1. Number of Participants Identifying Cultural Features and

Their Average Ratings

P^a	Cultural Feature	Correctly Identified[b]		Average Rating		t
		Pre-test	Post-test	Pre-test	Post-test	df =14
Canadians	Language	5	15	5.9	7.3	2.3[*]
	Institution	0	3	4.6	5.2	1.6
	Tradition	0	11	4.5	5.4	1.5
	Religion	10	15	6.2	6.0	0.35
	Fashion	3	9	4.6	4.9	0.9
	Marriage	3	10	5.6	4.9	1.6
Iranians	Language	12	15	5.8	6.4	2.3[*]
	Institution	0	15	4.5	6.9	7.7[**]
	Tradition	0	15	4.5	5.9	2.9[**]
	Religion	11	15	5.0	5.1	0.8
	Fashion	0	15	4.5	4.8	0.6
	Marriage	1	15	4.7	4.0	3.8[**]

aP = Participants. [b]Correctly identified out of N =15.

*$p < .05$. **$P < .01$.

There are several noteworthy features of the results shown in *Table 1*. There was, for example, an increase in the number of people with knowledge of the other culture's language, and an increase in positive attitudes about the language. There was a similar increase in the number of people with knowledge of institutions and traditions, and an increase in positive attitudes of Iranians, but not Canadians, about these topics. And there was an increase in the number of people with knowledge of religion, fashion, and marriage, but no increase in positive attitudes about these. This shows that knowledge and attitudes are to some extent independent and, by extension, that knowledge does not necessarily lead to more positive attitudes. For example, an Iranian participant who had learned about Canadian marriage rules wrote "I am amazed! Canadians can get married when they have a child!" Attitude improvements seemed to occur for topics considered relatively neutral, but did not occur for more religious or emotionally laden topics, which may require a longer duration of contact to change.

Results showed that the number of Canadians who correctly identified Iranian institutions did not increase substantially; in the post-test, only three Canadian participants could identify an Iranian institution such as Tehran University and Iran's National Television. This lack of improvement might be explained by the length of the project. As one of many students remarked, "the project was so short; it was not long enough to learn many things that we might have learned in a longer period of time". Continued ignorance likely accounted for Canadian's lack of attitude change toward Iranian institutions. The attitude of the three persons who did learn about Iranian institutions became significantly positive, $M_{\text{pre-test}} = 4.5, M_{\text{post-test}} = 8.0, t(2) = 6.1, p = 0.03$.

Iranians' new knowledge about Canadian institutions was greatly influenced by the context of communication. After seven weeks of interaction, 33% of Iranian participants listed Carleton University as a Canadian institution. This shows knowledge, when presented in a practical context, has a higher chance of learning. A similar finding was not shown among the Canadians, perhaps because Iranian students came from a variety of universities and their engagement to the project was not related to a specific institution – or perhaps because Canadians did not ask Iranians about their universities.

Averages, of course, often obscure as much as they reveal. For example, even though the average Canadian attitude rating of Iranian traditions showed no pre-post change, there were interesting individual differences. Two of the 11 Canadians who reported learning something about Iranian traditions learned about fasting and wearing the *hejab*. Apparently as a result of disagreements with these practices, their attitudes about traditions in Iran dropped from a neutral 4.5 to 0 and 2. In contrast, the remaining nine Canadians who reported learning something about Iranian traditions learned about holidays and festivities such as *Ramadan* and *Eid-e Fetr*. Their ratings of Iranian traditions rose significantly, from $M_{\text{pre-test}} = 4.5, M_{\text{post-test}} = 6.1, t(8) = 3.6, p = 0.00$. It is evident that attitude change depends on the nature of the topic discussed and on previous attitude about it.

As seen in *Table 1*, knowledge about the other's religion, fashion (including wearing of *chador*, uncovering the body, etc.), and marriage practices increased among both groups, but corresponding attitudes did not change. We speculate that most students have relatively well-formed attitudes about these topics, so we should not expect much attitude change. We note that, in all cases, average ratings continued to hover around neutral; new knowledge did not make the attitudes more negative.

Discussions of religion, traditionally a sensitive topic, did not cause arguments among e-pals, nor did it change neutral attitudes to negative. Arguments and attitude change could occur over a longer period of time. However, discussion of another sensitive topic, marriage and dating practices, did cause Iranian participants to become more negative about Canadians marriage. This is likely because marriage and dating practices in Iran are closely tied to religious values, and our Iranian participants were relatively religious (average rating of religiousness was 6.7 on a 9-point scale). For example, an Iranian participant seemed to be shocked when she heard that her e-pal and her husband married when they both had a child. If Iranian participants were, like many Iranians, less religious, their attitude change about Canadian marriage practices might follow a different pattern.

In summary, the results in *Table 1* reveal that modest to large increases in knowledge of the other culture did occur after seven weeks of interaction, and that positive attitude change toward more neutral topics

did occur. Knowledge did not always have a positive effect on attitudes; but it only once had a negative effect (i.e., for marriage).

Behavioural Intentions

The Behavioural Intentions section included 20 questions that explored behavioural manifestations of participants' attitudes towards other culture, their tendency to have collaborations or close relationships that require a high level of trust. For example, participants were asked how willing they would be to choose the people of other country as their close friend or as a therapist. A t-test on the results of all Canadians and Iranians in this part of the test did not show a significant change in attitude, either of Canadians towards Iranians or of Iranians towards Canadians. For Canadians $M_{\text{pre-test}} = 6.6$, $M_{\text{post-test}} = 6.8$, $t(14) = 1.0$, $p = 0.33$; and for Iranians $M_{\text{pre-test}} = 5.1$, $M_{\text{post-test}} = 5.4$, $t(14) = 1.7$, $p = 0.11$.

Analysis of data on Behavioural Intention section showed that attitude of Iranians who had minimal communication as a result of limited language skills or technical problems, and attitude of those who experienced disagreement about sensitive topics (such as religious issues or taboos about sex), did not change significantly, $t(5) = 0.58$, $p = 0.58$. Results were the same for their Canadian e-pals, $t(5) = 1.9$, $p = 0.10$. Yet, attitudes of those who did not encounter communication difficulties became significantly more positive -- for Iranians and Canadians respectively $t(8) = 2.5$, $p = 0.03$, and $t(8) = 9.0$, $p = 0.00$. This shows that, compared with general attitudes towards the culture, the behavioural intentions are more difficult to develop, or maybe are affected by specific factors that are not involved in cognitive component of attitudes.

Stereotypes

The *Stereotype* section of the CCUQ included participants' ratings about the characteristics (e.g., trustworthiness) of typical people of the other culture, the top end of the scale showing the most positive attributes. To analyse the data, we averaged the ratings of each person across the 27 9-point rating scales. Repeated measures t-tests showed a significant change in attitudes of both groups towards typical people from other culture. For Canadians $M_{\text{pre-test}} = 5.5$, $M_{\text{post-test}} = 6.4$, $t(14) = 4.1$, $p = 0.00$; and for Iranians $M_{\text{pre-test}} = 5.7$, $M_{\text{post-test}} = 6.6$, $t(14) = 4.8$, p = 0.00. This suggests that interaction with only one member of the other culture improved the stereotype of typical members of the culture.

To explore features of the stereotypes that changed after seven weeks of CMC, we asked participants in the post-test to list three presumptions about other culture that in this project had changed. *Table 2* illustrates the stereotypes of participants that changed after seven weeks of CMC.

Table 2. Stereotypes that changed by the end of communications

Canadians' Stereotypes about Iranians	Iranians' Stereotypes about Canadians
Iranians are very religious and strict.	Canadians are all blond and white, eyes green or blue.
Iranians are shy.	Canadians are all Christian.
Iranians are un-accepting of others.	Canadians are all English (or French) language.
Iranians are conservative.	Canadians are all rich and happy.
Iranians are poor.	Canadians are un-religious (or immoral).
Iranians are not educated.	Canadians are cold and unemotional.
Iranians are close-minded.	
Iranians have the same beliefs with Iraqis.	

Iranian women do not go to university.	Canadians are not interested in. making Friendship with Iranians.
Iranian women stay home to raise children.	Canadians know enough about Iran.
Iranian women do not drive.	Canadians don't respect Iranians.
Iran do not have subways.	Canadians are advocates of USA's policies on war etc.
Iranians do not know any thing about West.	
Iran is a desert.	Canadians have weak family bonds.

Three Iranians wrote: "I thought that Canadians are so unemotional and cold and I can't have intimate relations with them. But I am seeing I can". A Canadian wrote: "Prior to this communication, I though Iranians are so involved in past situations like war that they do not like or trust others except their own group". Another participant wrote: "Even though westerners perceive Iranians as being culturally engrossed, my partner appeared to have a great sense of humour. Even though Iranians are branded as terrorists, I think they strive to live life as peacefully and prosperously as western people". And another one wrote: "Iranians seem to be just as sensitive and understanding as us. It is extremely refreshing to know this of another culture; they are so rich in culture and history that I want to learn more about them".

Perception of Similarities

In order to examine how attitudes might be related to participants' perception of their similarities, the Similarity Scale of the CCUQ measured how similar Canadians and Iranians perceive themselves to be to other group in social, sexual, religious, and family values, and how the impression of similarities between two groups changed before and after communication with e-pals. Interestingly, averages of ratings of social, sexual, religious, and family values showed that both Canadians and Iranians initially believed they were somewhat dissimilar in their social, sexual, religious, and family values, Canadian $M_{pre-test}$ = 3.16; Iranian $M_{pre-test}$ = 2.5 (0= very dissimilar; 9= very similar). After seven weeks of CMC, perception of similarity in social, sexual, religious, and family values did not change statistically (Canadian $M_{post-test}$ 3.27; and Iranian $M_{post-test}$ 2.18; Canadian $t(14) = 0.16$, $p = 0.87$; Iranian $t(14) = 1.72$, $p = 0.11$), indicating that participants' attitude and stereotype change were not accompanied by a change in perception about similarity.

Evaluation of Activity

The Evaluation section of the CCUQ asked participants to rate how much they enjoyed learning from and about their e-pal's culture. The mean ratings for Canadians and Iranians on this scale respectively were 8.25 and 8.57 (0=not at all; 9=very much), showing the high level of enjoyment, both before and after the activity. Eleven of the students expressed a sentiment similar to that of one Canadian, "This project may have been one of the most valuable experiences I have had in the university."

Participants were also asked what they most liked and disliked about the other culture. *Table 3* illustrates the most common answers to this question.

Table 3. Likes and dislikes about other culture

Canadians' Likes about Iranians	Canadians' Dislikes about Iranians
Friendly	Hejab and traditional religion
Family oriented	Inequity for women
Open to all sorts of discussions	

Iranians' Likes about Canadians	Iranians' Dislikes about Canadians
Friendly	Misunderstandings about Iran
Multicultural	Sexual values
Relaxed	Little knowledge about their own (i.e., Canada's) history and culture.
Honest	

Participants were also asked to report the most boring and interesting things they experienced during their intercultural CMC. *Table 4* lists the most boring and exciting experiences of e-pals.

Table 4. The most boring and \exciting experiences of e-pals

Canadians' Exciting experiences	Canadians' Boring experiences
Weekly discussion groups Receiving e-mails Finding out the stereotypes about Canadians Seeing the world from a different perspective	Waiting for reply of Iranian partner because of technical problems Talking communication problems in discussion groups
Iranians' Exciting experiences	**Iranians' Boring experiences**
Knowing about another culture Having a Canadian friend Finding similarities in values of both cultures	Waiting for reply of Canadian partner and Internet problems Discussing religious beliefs and Hejab Misunderstanding about concepts that have two different meanings in two cultures

One Canadian narrated an amusing story of communication with her e-pal in this way: "my Iranian partner wanted to give me the recipe for making an Iranian food, he wrote me that I should add one spoonful of drugs to the food; it was funny!" Another Iranian surprised exclaimed: "My Canadian partner has seen Mandela's wife!"

Did students intend to continue communication with their pen-pals? The mean responses for Canadians and Iranians respectively were 7.90 and 7.93 on the 9-point scale, again indicative of a high level of intention to continue the e-pal relationships. One person wrote: "I will write to my partner for special events, for example for saying happy New Year". Others wrote: I would consider in such a group again and even taking a bit further and hosting an Iranian visitor to Canada, an exchange of Iranians Canadians, or a visit to Iran".

Finally, participants were asked to comment on their experience with their intercultural communication. The results were captured by a Canadian student: "This communication helps one's perspective and pre-assumptions that are portrayed by the society change. When we get to know something on our own, instead of believing what we hear, we understand the truth". Another Canadian student described her experience of e-pal communication in this way: "Iran has a lot of similarities to Canada. If I had not participated in this project, I would never understand these similarities. Also, learning about differences was interesting".

Discussion

Our project attempted to increase cross-cultural understanding through computer-mediated communication between university students from Canada and Iran. Results show that, after seven weeks of communication, the knowledge of both Canadians and Iranians towards people of other country increased. Attitudes of participants towards the other's culture improved for many topics, but not all. The findings regarding the unchanged aspects of the attitude can be explained by Stephan's (1985) suggestion that the extension of duration of communication plays an important role in the success of communication. To test this hypothesis, future research should manipulate the duration of the communication to determine its importance for increasing knowledge and positive attitudes in cross cultural exchanges.

Positive change occurred in both Iranian's and Canadian's attitudes towards each other, despite the persistence of the perception of cultural dissimilarities about family, sexual, and religious values from pre-test to post-test. This is contrary to previous research showing that the perception of similarities is a basic condition for a positive attitude change and for developing friendships (e.g., Byrne 1971, Newcomb 1961; Gareis 1995). Our results suggest that a perception of similarities of family, sexual, and religious values are not fundamental in developing friendships, if the other conditions, such as communicative competence, cooperation, and involvement in interesting joint activities are met. Future research should study the conditions for developing a positive relation between groups that have additional dissimilarities such as dissimilarities in age, occupation and interests.

The findings of our research may have been a result of specific characteristics of participants in this research, for example, their relatively high level of education, their level of maturity, or the relatively positive attitudes they had towards the out-group when the study began. In addition, Canadians may be more tolerant of other cultures because of the multicultural nature of the country; Canada is known as a nation of immigrants. Future research should attempt to overcome these limitations using participants who are not university students and who are from a more homogeneous Western culture.

References

Allport, G. (1967). On reducing prejudice. In E. P. Hollander & R. G. Hunt, *Current perspectives in social psychology: Readings with commentary* (pp. 595-602). New York: Oxford University Press.

Beazely, M.R. (1989). Reading for a real reason: Computer pals across the world. *Journal of Reading, 23*, 598-695.

Briggs, C. & Costelink, J. L. (1994). Pen pal letters between first grade children and teacher education students: theory into practice. *Journal of Early Childhood Teacher Education, 15*, 12-15.

Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

Ceprano, M.A. & Garan, E.M. (1998). Emerging voices in a university pen-pal project: Layers of discovery in action research. *Reading Research & Instruction, 38*(1), 31-56.

Chenault, B.G. (1998). *Developing personal and emotional relationships via computer-mediated communication*. Retrieved may 29, 2009, from http://www.december.com/cmc/mag/1998/may/chenault.html

Chesboro, J.W. & Donald, G.B. (1989). *Computer-mediated communication: human relationships in a computerized world*. Tuscaloosa & London: University of Alabama Press.

Eastmond, N. & Lester, O. (2001). Exploring important issues through key-pal connections: South Africa and the USA. *TechTrends, 45 (6),* 15-21.

Ess, C. (2001). Introduction: What's culture got to do with it? Cultural collisions in the electronic global village, creative interfaces, and the rise of culturally-mediated computing. In C. Ess & F. Sudweeks (Eds.), *Culture, technology, communication: towards an intercultural global village* (pp. 1-49). Albany: State University of New York Press.

Finegan-Stoll, C. (1998). Keypals for young children. *Social Studies and the Young Learner, 11 (1),* 28-29.

Gareis, E. (1995). Intercultural friendship: A qualitative study. Lanham: University Press of America.

Hacker, K.L. & Steiner, R. (2001). Hurdles of access and benefits of usage for Internet communication. *Communication Research Reports, 18,* 399-407.

Harmston, K.A., Strong, C. J., & Evans, D. D. (2001). Writing to South Africa: International Pen-pal correspondence for students with Language-Learning disabilities. *Teaching Exceptional Children, 33*(3), 46-51.

Harris, T.H., & Sherblom, J.S. (2005). *Small group and team communication* (3rd ed.). Boston: Pearson.

Holt, R. (2004). *Dialogue on the Internet: language, civic identity, and computer-mediated communication*. Westport: Praeger.

Lewin, K. (1948). *Resolving social conflicts: Selected papers on group dynamics*. G. W. Lewin (Ed.). New York: Harper & Brothers Publishers.

Liu, P. (2003). Developing an e-pal partnership: A school based International activity. *Childhood Education, 79*(2), 881-88.

Newcomb, T. M. (1961). *The Acquaintance process*. New York: Winston.

Parks, M.R. (2007). *Personal relationships and personal networks*. Mahwah, NJ: Lawrence Erlbaum Associates.

Parks, M.R. (2000). Communication networks and relationship life cycles. In K. Dindia & S. Duck (Eds.), *Communication and personal relationships* (pp. 55-75). New York: John Wiley & Sons.

Parks, M.R., & Floyd, K. (1996). Making friends in cyberspace. *Journal of Communication*, *46*(1), 80-97.

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*, 55-79.

Rogers, R.A. (1999). "Is this a great time or what?" Information technology and the erasure of difference. *World Communication, 28*(4), 69-86.

Salmon, M. & Akaran, S.E. (2001). Enrich your kindergarten program with a cross-cultural connection. *Young Children*, *56*(4), 30-32.

Schoorman, D. (2002). Increasing critical multicultural understanding via technology: Teachable moments in a university-school partnership project. *Journal of Teacher Education*, *53*(4), 356- 369.

Scollon, R., & Scollon, S.W. (2001). *Intercultural communication: A discourse approach* (2nd ed.). Malden, MA: Blackwell Publishers.

Shedletsky, L. & Aitken, J.E. (2004). *Human communication on the Internet*. Boston: Allyn & Bacon.

Sherif, M. (1967). Superordinate goals in the reduction of inter-group conflict. In E. P. Hollander & R. G. Hunt (Eds.). *Current perspectives in social psychology*: *Readings with commentary* (pp. 606-614). New York: Oxford University Press (Original source Garden City: Doubleday Anchor, 1958).

Sherif, M. & Sherif, C. W. (1953). *Groups in harmony and tension*. New York: Harper & Row.

Shulman, M. (2001). Developing global connections through computer-mediated communication. *The Internet TESL Journal, 7*(6). Retrieved June 11, 2009, from http://iteslj.org/Articles/Shulman-CMC.html

Shulman, S. & Seiffge-Krenke, I. (1994). *Journal of Psychology, 28 (1)*.

Stanford, P., Siders, J.A. (2001). E-Pal Writing, TEACHING Exceptional Children, 34(2), 21-24.

Stephan, W. (1985). Inter-group relations. In G. L. & E. Aronson (Eds.), *The handbook of social psychology* (3rd Ed.), V (2), 599- 685. New York: Random House.

Thoth-Denis, D. F. & Pahinui, K. (1999). Cross-cultural pen-pal programs strengthen families and family services. *Reaching Today's Youth: The Community Circle of Caring Journal, 3* (2), 32-36.

Wheeler, D. (2003). The Internet and youth subculture in Kuwait. *Journal of Computer Mediated Communication, 8* (2). Retrieved June 5, 2009, from http://jcmc.indiana.edu/vol8/issue2/wheeler.html

Wheeler, D. (2001). New techneologies, old culture: A look at women, gender, and the Internet in Kuwait. In C. Ess & F. Sudweeks (Eds.), *Culture, technology, communication: towards an intercultural global village* (pp. 187-212). Albany: State University of New York Press.

Appendix

Background Questionnaire

Age_____ Gender_____ Religion _____

Country of citizenship_____ Country of Birth_____

Year in university (1st, 2nd, etc) _____

What languages do you
speak? _____
read? _____
write? _____

1) Knowledge and Attitudes about Iranian/Canadian Culture

(Canadians will answer about Iranians and vice versa)

1. How much do you know about Iranian/Canadian history?

nothing 0 1 2 3 4 5 6 7 8 9 very much

Please list two important historical facts about Iran, if known

    a. _____
    b. _____

2. How much do you know about the current Iranian/Canadian political situation?

nothing 0 1 2 3 4 5 6 7 8 9 very much

Please list two important facts about the current Iranian/Canadian political situation, if known
a) _____

b) _____

3. How much do you know about Iranian/Canadian foods?

nothing 0 1 2 3 4 5 6 7 8 9 very much

Please list two important facts about Iranian/Canadian food, if known

a) _____

b) _____

4. How much do you know about Iranian/Canadian culture?

nothing 0 1 2 3 4 5 6 7 8 9 very much

Please list two important facts about Iranian/Canadian culture, if known

a) _____

b) _____

5. What is Iranian/Canadians Language? _____ If you know the answer to the previous question, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression about it? _____

6. Do you know any of Iranian/Canadians Institutions? _____ If yes which one/s? ___ If you know the answer, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression about it? _____

7. Do you know any of Iranian/Canadians traditions? _____ If yes which one/s? _____ If you know the answer to the previous question, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression about it? _____

8. What is the most common religion in Iranian/Canadian? _____ If you know the answer to the previous question, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression of Iranians/Canadians as having that religion? _____

9. Do you know any of Iranian/Canadians' fashion? _____ If yes which one/s? _____ If you know any Iranian/Canadians' clothing, If you know the answer to the previous question, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression about it? _____

10. How do Iranian/Canadians marry (for example: arranged marriage, they date, etc.) _____ If you know the answer to the previous question, using the 0 (=very negative) to 9 (=very positive) rating scale, what is your first impression about it? _____

2) The Behaviour Intention

(Canadians will answer about Iranians and vice versa)

Below is a list of statements. Please rate how much you agree or disagree with each. In making your ratings, please use the following scale:

Strongly disagree 0 1 2 3 4 5 6 7 8 9 *Strongly agree*

1. ___ I believe many aspects of Iranian/Canadian culture would be good to adopt in Canada.
2. ___ I prefer Canadian culture to Iranian/Canadian culture
3. ___ I would be happy to bring an Iranian/Canadian friend home to my parents for dinner
4. ___ I would like to have Iranians/Canadians as close personal friends.
5. ___ I would enjoy going to a party given by Iranians/Canadians in their home
6. ___ I would enjoy travelling with Iranians/Canadians.
7. ___ I would trust most Iranians/Canadians
8. ___ I am willing to go to a party with an Iranian/Canadian.
9. ___ I could easily imagine myself falling in love with, and marrying, an Iranian/Canadian.
10. ___ I would not mind if all my friends were Iranian/Canadian.
11. ___ I would be pleased to introduce Iranians/Canadians to my Canadian friends
12. ___ I would be happy to have an Iranian/Canadian as a roommate.
13. ___ I would be happy if most of my peers at the university were Iranian/Canadian.

14. ___ I would expect many problems with marriages between Iranians and Canadians.
15. ___ I would like to have an Iranian/Canadian for a boss.
16. ___ I'd be happy to consult an Iranian/Canadian psychotherapist.
17. ___ I'd be happy to have an Iranian/Canadian as my personal physician.

3) Stereotypes

(Canadians will answer about Iranians and vice versa)

Please rate typical Iranians/Canadians on a 0 (= *strongly disagree*) to 9 (= *strongly agree*) scales. Circle a number on each scale that represents your judgment.

1. Lazy   0 1 2 3 4 5 6 7 8 9   Industrious

- Aggressive   0 1 2 3 4 5 6 7 8 9   Peaceful
- Unintelligent   0 1 2 3 4 5 6 7 8 9   Intelligent
- Unpatriotic   0 1 2 3 4 5 6 7 8 9   Patriotic
- Sad   0 1 2 3 4 5 6 7 8 9   Happy
- Cold   0 1 2 3 4 5 6 7 8 9   Warm
- Shy   0 1 2 3 4 5 6 7 8 9   Outgoing
- Serious   0 1 2 3 4 5 6 7 8 9   Humorous
- Nervous   0 1 2 3 4 5 6 7 8 9   Relaxed
- Typical   0 1 2 3 4 5 6 7 8 9   Unique
- Foolish   0 1 2 3 4 5 6 7 8 9   Wise
- Boring   0 1 2 3 4 5 6 7 8 9   Interesting
- Unfriendly   0 1 2 3 4 5 6 7 8 9   Friendly
- Passive   0 1 2 3 4 5 6 7 8 9   Active
- Bad   0 1 2 3 4 5 6 7 8 9   Good
- Intolerant   0 1 2 3 4 5 6 7 8 9   Tolerant
- Immoral   0 1 2 3 4 5 6 7 8 9   Moral
- Conservative   0 1 2 3 4 5 6 7 8 9   Liberal
- Loud   0 1 2 3 4 5 6 7 8 9   Quiet
- Closed   0 1 2 3 4 5 6 7 8 9   Open
- Unromantic   0 1 2 3 4 5 6 7 8 9   Romantic
- Dishonest   0 1 2 3 4 5 6 7 8 9   Honest
- Ugly   0 1 2 3 4 5 6 7 8 9   Beautiful
- Rigid   0 1 2 3 4 5 6 7 8 9   Adaptable
- Untrustworthy   0 1 2 3 4 5 6 7 8 9   Trustworthy
- Selfish   0 1 2 3 4 5 6 7 8 9   Selfless

- Poor   0 1 2 3 4 5 6 7 8 9   Rich

4) Perception of Similarities

Below is a list of statements a concerning your e-mail group of partners in Iran/Canada. Using the following scale: *Strongly disagree 0 1 2 3 4 5 6 7 8 9 Strongly agree,* Please Write a number from 0 to 9 in the blank to the left of each statement that best represents your agreement or disagreement with it.

1. ___ Iranians are similar to Canadians in the social values they teach their children.
2. ___ Iranians are similar to Canadians in their religious beliefs and practices.
3. ___ Iranians are similar to Canadians in their sexual values.
4. ___ Iranians are similar to Canadians in their family values.
5. ___ The average Iranian/Canadian and I have almost nothing in common

5) Evaluation of Activity

(Administered only once, at the end of the project)

Please complete the following statements or answer the questions:

1. Using a 0 (= not at all) to 9 (= very much) rating scale, please mention how much you enjoyed the project ____
2. Two things that I liked most about the culture of my pen-pal were:
    a. _____
    b. _____
3. Two things that I disliked most about the culture of my pen-pal were:
    a. _____
    b. _____
4. My most interesting experience with this project is _____
5. My most boring experience with this project is _____
6. I have decided to continue my e-mail communication with my Iranian/Canadian partner/s in the future *not at all 0 1 2 3 4 5 6 7 8 9 very much*
7. Please list three presumptions about the other culture that changed during this project.
8. Please add any additional comments you wish about the project. _____

_____

_____

About the Authors

Mahin Tavakoli has been a lecturer at Carleton University and an assistant professor of psychology at St. Francis Xavier University, Canada. She is a Certified Canadian Counsellor (CCC) and has served as a psychological consultant for educational television programs in Iran. She is the author and translator of five Persian books, and has published over 50 journal articles.

Javad Hatami has been an assistant professor of psychology in the Psychology Department of Tehran University and a faculty member of Institute for Cognitive Science Studies. He also works as a TV producer and makes TV documentaries in the social psychology field.

Warren Thorngate has been a professor in the Psychology Department of Carleton University, Ottawa, Canada since 1979. He is the co-founder of the Centre for Social Psychology Research in Shahid Beheshti University, Tehran, and has undertaken research and teaching in Latin America, Eastern Europe, and Iran. He is an author of 2009 book, Judging Merit.

Authors' Addresses

Mahin Tavakoli
> Psychology Department
Carleton University
1125 Colonel By Drive
Ottawa, Ontario, Canada
K1S5B6
Email: mtkhomei@connect.carleton.ca

Javad Hatami
Psychology Department
University of Tehran, Jalal-Al-e-Ahmed
P.O. Box 11455/6456
Tehran, Iran
Email: hatamijm@gmail.com

Warren Thorngate
Psychology Department
Carleton University
1125 Colonel By Drive
Ottawa, Ontario, Canada
K1S5B6
Email: warren_thorngate@carleton.ca