Migrants' Communication Practices with ICTs:
Tools for Facilitating Migration and Adaptation?

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Abstract: Migrants to a new homeland face significant adaptation and communication challenges. Information communication technologies (ICTs) are obvious tools to bridge these challenges. In this paper we investigate how migrants' communication practices shape their use of email and the Internet as part of their settlement process, and consequently, their inclusion in and contribution to the community, economy, and society. The study used an experimental research design whereby student researchers undertook email and follow-up face-to-face interviews with 28 diverse migrants to New Zealand. The findings showed that their use of computer-mediated communication (CMC) was influenced by their preferred cultural communication practices in some instances, but not in others. CMC enabled migrants to make sense of their immigration/adaptation experience, as well as manage daily living, thus negating earlier research that "problematizes" migrants with respect to technology use and adaptation. Yet, this empowerment did not necessarily facilitate intercultural communication or cultural inclusion. Further, both inter- and intra-cultural communication differences emerged, especially in relation to trust and emotion, and in differences between CMC and face-to-face communication: ICTs are not neutral tools for communication. Yet, migrants valued CMC as a tool for long term economic integration with potential widespread results for success in the host society. The outcomes of the study indicate the need to research cultural groups both separately and within, and the need to explore migrants' economic and social contributions to the receiving society through ICT uptake.

Keywords: Migrants, Intercultural Communication, Cultural Communication, Computers and Email, ICTs, Settlement and Adaptation

Introduction

THE RAPID ADOPTION of the new information communication technologies (ICTs) in society has lead to fears, particularly among governments, of a digital divide, particularly among older people, and under-represented and less privileged ethnic groups such as refugees and migrants. While much has been written about the impact of ICTs in the context of human communication generally (see, for example, Clark, Demont-Heinrich & Webber, 2005; Jackson, Poole & Kuhn, 2002; Leonardi, 2003; Leonardi, Jackson, & Marsh, 2004; and Richardson, 2005), little is known about migrants' relationships with and experience of these new technologies. Yet, the way migrants perceive and use ICTs may have a critical impact on their migration, settlement and (intercultural) communication experiences. This paper takes up the important subject by investigating how the communication practices of a small group of new migrants to New Zealand are shaped by their use of technology (specifically, email and the Internet), and thus, how such practices facilitate their migration, settlement, and adaptation experience. Access to and ability to use ICTs is now considered part of "the toolkit necessary to participate and prosper in an information-based society" (Servon & Nelson, 2001, p. 279). How migrants make use of such technology is important in understanding their access and contribution to the receiving society and whether they are falling on the wrong side of the digital divide.

In this study we explore how a minority group –new migrants to New Zealand –shape their communication practices around the Internet and email. The study highlights the role ICTs play in enabling and empowering this group of people to participate in the knowledge society by providing them a space where communication, cultural, and social patterns are reconstructed and renegotiated.

First, we explore the role of digital connectivity for all populations, including new migrants, followed by studies of migrants' uptake of ICTs and intercultural communication practices. Next, the research design for the study is presented, then the emergent findings and implications for ICT use within this research context, and directions for future research.

ICTs as Tools for Socio-cultural Inclusion

A recent European forum on digital literacy (Janus Workshop on the Digital Divide, 2004) emphasised that entire segments of populations, such as migrants, are at risk of being excluded from participation in the knowledge society. Earlier studies of ICT uptake

have demonstrated that migrants are marginalised from the benefits of societal communication networks (Riggins, 1992; Wilson & Gutiérrez, 1995, cited in Campbell, 2002). Other authors (for example, Akhtar, Charron, & Lee Hoon, 2003; and Gajjala, 2003) have pointed out the positive aspects of the transition to the information society, such as the opportunity to transform the digital divide into digital opportunities.

Further, Warshauer (2003) argued that, where marginalised groups are concerned, the goal of ICTs is not to overcome the digital divide by ensuring greater access for disadvantaged groups, but "rather to further a process of social inclusion" (p. 8). This process will only come about by building on existing networks, thereby enabling meaningful social practices; not merely practices that focus on "getting things done," the nuts and bolts of daily living, but practices that include the social, cultural, and emotional aspects in migrants' intercultural communication with people in the receiving culture.

This new era invites a paradigm shift in both how we imagine and practice communication, not merely in technological terms, but also in how we construct and conduct meaningful social practice. It also invites a focus on the social, emotional, and informational benefits to individuals and communities (Kelsey, 2002). To date, little attention has been paid to how migrants engage in meaningful social practices through the use of ICTs, and further, the extent to which ICTs accommodate their social, cultural, and emotional connectedness.

Migrants and ICTs: The New Zealand Context

Within New Zealand, the context of this study, rapid immigration has led to concerns about how migrants acclimatise to their new surroundings. The media have often been represented as voices that construct migrants as social problems, both in New Zealand (Bedford, 2002; Collins, 2002; Hubbard, 2002) and North American environments (Yoo, 2001). Yet other researchers argue that migrants have been able to create significant social changes in their host societies, for example, in the United States, by invoking multiculturalism (Kurien, 2004). Kurien (2004) notes that, in some cases, norms of multiculturalism may encourage the cultivation of ethnicity, thus reinforcing goals opposite to those of integration. For example, in the case of Muslim activism, Kurien suggests that this movement has created transformative effects on societal concepts of identity and responsibility in the host society, often aided by Internet dissemination.

Conversely, there is concern that some migrants are under-represented in conventional mainstream communication channels, such as broadcasting media and the press (Cullen, 2001, cited in Campbell, 2002). Many political speeches have questioned whether migrants' ICT needs are being met so as to facilitate communication–and, by implication, integration–within the receiving culture (Maharey & Swain, 2000; New Zealand Immigration Service, 1998). Within New Zealand, concern has also been expressed about certain groups, such as migrants, being positioned on the wrong side of the digital divide (Maharey, 2002), thus "unable to contribute to a knowledge society as skilled workers and/or consumer end users" (Richardson, Weaver & Zorn, 2005, p. 241). And certain migrant groups, along with indigenous peoples, have also been identified as having a low uptake of ICTs (Cullen, 2001). The trend towards e-governance in post-modern societies, of which New Zealand is no exception, raises questions about migrants' participation in the knowledge society. To what extent do they adapt to and for what purposes do they use ICTs? Therefore, understanding how migrants shape their communication practices around ICT use is of critical importance in promoting their inclusion in and contribution to the community, the economy, and society generally.

Further, ICTs offer the potential for entrepreneurial opportunities. Yet, little is known about the extent to which migrants in New Zealand may be using computer-mediated communication (CMC) for these purposes, nor whether such activities may lead to further social inclusion. Some business practices of migrants have been considered as impediments to adaptation in the receiving country. For example, Engelen (2002), and Kloosterman and Rath (2000) described migrants as often being over-represented in the food, cleaning and retail trades. These markets are easily accessible to newcomers but often have little potential for wealth creation and dramatic future growth. Morawska (2004) has argued that, in certain cases, migrants setting up businesses in the trades with people in their countries of origin often results in travels back and fourth between their receiving country and country of origin to operate a business of goods exchange. However, this ethnic entrepreneurship, and the communication practices it embodies, may not result in inclusion in the host society. The extent to which CMC may facilitate such processes, as well as open up engagement with the receiving community has yet to be explored.

Migrants' Communication Practices with ICTs

While little is know of migrants' communication practices vis a vis ICTs, Leonardi's (2003) study of working class United States Latinos' relationships with ICTs, an under-represented group, found that

cell phones promoted their cultural communicative values; instead, computers and the Internet were a way to access information rather than for communication. Participants viewed these tools as an impediment to their own cultural values of good communication, a disincentive to participate in collective activities, as well as causing a loss of control over the information obtained for them and their children.

Therefore Leonardi (2003) warned that "the communication goals of a particular group of users always plays a crucial role in their uses and perceptions of technology" (p. 176). He concluded that "technologies should not be implemented because they are believed to enhance communication for everyone; rather, particular technologies should be adopted based on their specific abilities to augment culturally defined qualities of good communication for specific groups–qualities that are always changing." Therefore, studying the CMC of a particular group such as migrants enables a better understanding of how ICT use is enacted within that group. More importantly, this focus reveals how ICTs can enrich migrants' culturally informed communicative practices, especially as users socially construct technologies in their own ways (Edge, 1995; Jackson, 1996; Starbuck, 1996), and as Leondardi's study attests, for their own cultural communication purposes.

A second study by Campbell (2002) surveyed the adoption and use of ICTs by migrants to New Zealand. Campbell found that migrants used the Internet both for communicating with friends and family in and out of New Zealand, and for business and career purposes. This was well over the national use rates and they did not perceive the regular barriers of cost and language to Internet use. Campbell argued that ICTs serve to maintain cultural identity, thus supporting Aplin's (1999) view of the Internet as a unifying force for migrants. Campbell concluded that the migrants surveyed in her study could not be placed on the disadvantaged side of the digital divide.

These studies point to the need for further studies that focus on how cultural communication practices shape the use of ICTs as part of identity maintenance, intercultural inclusion, and enabling migrants to achieve their settlement goals.

Cultural Communication Practices

If we want to study of how communication practices shape ICT use, then we need to understand how culture shapes inter- and intra-communication practices. As Chen and Starosta (1998) argue, our communication patterns, the what, when and how of our talk, are conditioned by our culture. Frameworks such as Hall's (1976) high-low context communication model illustrates how people from high context communication cultures tend to emphasize less explicit verbal messages; transmit important information through physical contextual cues; and use silence and ambiguous language. By contrast, people from low-context communication cultures do not emphasize the situation, tend to use highly explicit verbal messages to transmit information, and express opinions and intentions freely and directly to persuade others (Chen, 2001). Thus, without the necessary contextual, nonverbal, and emotional cues in CMC, a lean medium, developing trust and managing emotion may pose difficulties.

Further differences in communication styles are illustrated in models of individualism-collectivism (Gudykunst & Ting-Toomey, 1988; Hofstede, 1997). In brief, individualism suggests an emotional independence from the family, groups, and organisations; collectivism necessitates commitment to the group and the maintenance of harmonious relationships within the group, developed over time and underpinned by trust.

A further reason to focus on culturally informed communication practices is raised by Roscoe (1999). Roscoe argues that there exists a complex reciprocal relationship between technological development and social formation around new communication technologies. Examples of this relationship have been observed in studies that report increased use in communication technology promoting the possible displacement of interpersonal networks, that is, an emphasis on self rather than on the in-group (Baym, 2001; Kayany & Yelsma, 2000).

Yet, several gaps and biases emerge in the research. First, it is important to recognize that human communication is a changing and transforming process (Chen, 2001) and that each person's communication is both cultural and idiosyncratic (Samovar and Porter, 2004). Thus, understandings of culture that seek to essentialise difference among people from diverse cultural groups, or view cultures as monolithic entities all sharing the same communication practices need to be treated cautiously (Chuang, 2003; Holliday, Hyde & Kullman, 2004). There is a further gap in our understanding of the role that CMC and technology play in migrants' intercultural communication. In response to these research gaps, we seek to gain a specific, locally-generated understanding of how migrants' communication practices shape their CMC experiences via email and the Internet; we seek to answer the following research question:

> How do migrants' communication practices shape their use of technology (computers and email)?

Research Design

To answer this question we focus on how migrants socially construct their everyday communication

experiences through technology, in particular, how their communication practices frame and shape computer and email use. We foreground the context of technology use and the social and political factors shaping technology use (Woolgar, 1996); we also acknowledge the importance of cultural and emotional factors (Warschauer, 2003).

The migrants in this study had lived in New Zealand less than three years, the length of residency required for citizenship, and therefore, a critical period of settlement. We treat migrants as separate and different from refugees. While both have the same goals of settlement and integration, refugees' experiences with ICTs may be quite different due to factors of choice, educational opportunities, political and economic circumstances, and knowledge of and access to computers.

The research design was both experimental and experiential. We invited 28 student researchers (undertaking an undergraduate intercultural communication paper) to conduct email and face to face interviews with 28 migrant participants. All participants were emailed the same questionnaire to establish biographical details, and general perceptions and use of email and the Internet. Student researchers conducted a one-hour follow-up face-to-face interview. Participants were encouraged to talk about their personal experiences and attitudes, and provide examples and stories of CMC. The interviews were audio-recorded and transcribed.

Ten men and 18 women migrants to New Zealand participated in the research. Participants' ages ranged from 20 to 84. They were linguistically and ethnically diverse, coming from a range of countries (Australia = 2, China = 5, France = 1, Hong Kong = 1, Indonesia = 3, Israel = 4, Korea = 3, South Africa = 3, Taiwan = 3, the United Kingdom = 2, and Zimbabwe = 1). Just under a half of the participants had English as a first language. One ethnic Chinese woman had no English and was interviewed in Mandarin by a Chinese international student.

Participants were identified through a migrant community centre. The sample is not representative of any particular cultural or socio-economic group or of migrant populations elsewhere. However, the diversity in the sample provides a broad glimpse how communication practices shape email and Internet use across a range of migrant ethnic groupings.

Regarding ownership and technical knowledge, all but one of the participants had a computer and Internet access in their home. The non-owner came from the United Kingdom and had access at work only. Participants were all keen users of email and the Internet, citing reasons of efficiency, speed in communication, convenience, and cost (compared with telephone).

Participants' technical knowledge varied enormously. Two males (from Taiwan and South Africa) had computer programming qualifications from their own countries. Four males used computers at work. By contrast, two females (84 year old Israeli and a young Chinese) had no knowledge before their arrival, but were aided by family members. Generally, where there was a lack of computer knowledge, informal support networks operated.

The data collection process enabled an exploration of participants' shared and idiosyncratic CMC practices and experiences, first, by drawing on and constructing meaning from data that are grounded and emergent in their CMC (Glaser & Strauss, 1967), and second, in gaining a "thick description" (Geertz, 1983) of the participants' CMC with others in the research context. We analysed the email and interview transcripts for recurring and common themes derived from the reading or examination of the discursive texts (Geertz, 1983), also accounting for individuals' attitudes and experiences as rendered in the context of the CMC encounter. Leonardi (2003) argued that paying close attention to the claims participants made about the purposes, benefits, and hindrances of a technology, and the ways in which participants framed their responses or experiences enables in-depth examination of both perceptions and uses of the technology. This focus also highlights individuals' cultural, social, and emotional orientations and the distinctions they made in perceptions and uses of computers.

The study has a number of limitations. The emergent findings derive from one particular situated context and are therefore not generalisable to all migrants' CMC experiences. It is important to remember that human communication is both idiosyncratic and individual. Thus, how the communication practices of this group of migrants shape their experiences of the Internet and email is not representative of migrants in other communities or across ethnic groupings.

Findings: How Migrants' Communication Practices Shape their use of Computers

The emergent findings are articulated around three key emergent themes: communication practices in relation to settlement; the shaping of communication practices around CMC; and perceptions of emergent differences between CMC and face-to-face communication (FFC).

Communication Practices Regarding Settlement

The Internet provided participants with convenient and efficient communication with friends and family

in New Zealand and abroad. They also sought valuable information about living in New Zealand: immigration, schooling, housing, holidays, banking, household purchases, and developing business networks. Government Web sites also provided useful information about immigration.

Language Choices

While all participants accessed sites in English more than in any other language, non-native speakers expressed a preference for accessing Web sites and communicating in their first language (e.g., Chinese, French, Hebrew, Indonesian, or Korean), especially in matters of health, technology, and news about the home country. For example, a Taiwanese participant relied on the Internet for Taiwanese news, but for news about New Zealand, he went to the Chinese language newspapers because he could not understand all the slang in the New Zealand Internet news sites.

However, first language use was often made difficult by incompatible technology, such as a keyboard or a language programme. An Israeli participant cited his preference for talk by phone rather than email because of the language difficulty. Although he found Microsoft Instant Messaging (MSN) an interesting technology, it was not always reliable.

Job Search

The computer also served as tool kit to get information about jobs and possible work sites. Yet, none found a job this way. A Chinese participant described his experience:

> I think Internet has much more job information than newspaper. But …when I just simply sent my CV through emails, usually I got negative feedback. It's better to bring my CV with me and have face-to-face conversation with the employers because I can find what they really want through the conversations….Sometimes it is not easy to let people know exact you just via emails.

While this observation indicated the importance of the Internet in searching for jobs, without access to the context and nonverbal aspects of communication, this participant, coming from a high-context culture, felt disadvantaged by CMC (Gao & Ting-Toomey, 1998; Hall, 1976). Face-to face communication also enabled trust to develop, important in Chinese communication. Given the current New Zealand employment practices that discriminate against migrants ("Migrants face employment discrimination," 2006), the importance this Chinese participant placed on these FFC cues is understandable. Thus, CMC in this context failed to meet this participant's expectations of meaningful communicative practice. Nor did the computer enable him to transcend his cultural communication practices in the context of gaining employment.

Buying on the Internet

Participants found the computer useful in making purchases. They could compare prices, source goods, and buy second hand products from sites like E-Bay. However, a Chinese participant mentioned lack of trust and inconvenience as two factors that deterred his Internet purchases, therefore reducing benefits of the computer for purchasing: "It is very inconvenient if I want to refund, as the goods is not as good as the picture shown in the Web site."

Shaping Communicative Practices around CMC

A second major theme concerned the ways in which migrants shaped their communication practices around CMC. Participants from China and Taiwan used the computer much more than in their home countries, to maintain contact with family and friends, locally and abroad, and for knowledge about goods and services in New Zealand. For example, a Taiwanese woman, having little communication with New Zealanders outside of her Chinese circle, relied upon CMC as a point of social and cultural contact and understanding about living in NZ, and as a sense-making process of her settlement in New Zealand. These practices also appeared to help preserve her marginality, along with her preference for CMC in Chinese which inhibited her English language acquisition, and concomitantly, her social interaction with English speakers in the local New Zealand context.

A second theme to emerge centred on participants' perceptions of chat on the Internet. About half the participants were familiar with the use of chat software and instant messaging programmes such as ICQ and MSN. Yet, most did not enter random chat rooms as a leisure activity. Cultural differences emerged again. For example, among the Chinese, Taiwanese, and Indonesian participants, the Internet was perceived as an unsafe place to make friends. A Taiwanese participant noted that such chat rooms were "not very secure" and "dangerous…they usually put wrong information there and I don't have any clues about a person's gender, ages and any identities." Thus, in contexts where e-communicators were unknown, these participants' communication practices were shaped by perceptions of trust and what they deemed "safe."

The software that enabled long-distance chat (including Web cameras) with family and friends was

popular across ethnicities, gender and age, irrespective of competency. These devices lessened the distance from friends and sense of isolation. A Chinese woman described her experience:

> On Chinese New Year's Eve, my family in China were all gathering at my Nanna's place. There were nearly twenty relatives over there, and we chatted with everyone for a while on the Internet with the Web camera. We were all very happy, just like we were together.

Use of chat software was also determined by cost and efficiency, and degree of familiarity and connectivity it offered. However, the English participant, the only person not to have a computer in his home, preferred the instant connectivity offered by the telephone and the personal rapport he associated with telephone conversations.

A major drawback of CMC was its inability to facilitate participants' development of friendships with New Zealand people in their community. No participants reported having developed intercultural friendships with New Zealand people through the computer. A Korean male participant met New Zealand people at the local multicultural centre, and through volunteer work rather than through CMC. A South African participant felt that CMC did not aid social interaction: "You need to sit with people, meet them, and start to talk." And a Taiwanese female relied on her online communication with local ethnic Chinese friends on a daily basis. Unlike her ethnic Chinese counterparts, she did not express feelings of mistrust or insecurity in her CMC. Rather, it offered her a lifeline in a culture where she felt foreign and alienated. In her case, CMC actively worked against her developing intercultural/New Zealand friendships and connectivity with New Zealand culture and society.

Overall, migrants' communication practices promoted rather than inhibited their connectivity, but primarily in a pragmatic sense. Their communication practices facilitated an introduction into the mechanics of New Zealand society and provided resources for solving problems in daily life. Migrants were also able to connect with friends and family to make sense of their adaptation/adjustment process, and also to lessen feelings of isolation and homesickness.

However, their practices also suggest that their CMC was influenced by the cultural rules for and boundaries of communication. CMC was confined to already established networks of family and friends. In other contexts, where trust had not yet been established, many participants, in particular those from the high context cultures of China, Taiwan, and Indonesia (Hofstede, 1997), displayed reluctance to engage in CMC, in keeping with their cultural FFC practices.

Differing Perceptions of CMC and FFC as Communicative Practices

The final theme concerns the differing perceptions of CMC and FFC held by participants, which contributed towards their choices about ICT uptake, and choices about communication practices they engaged with in their ICT use, especially in engaging with people in the receiving community.

Participants demonstrated differing perceptions of CMC and FFC. English or near-native English speakers perceived their CMC in utilitarian terms as a tool for adaptation and living. They did not focus their communication around it, preferring FFC with New Zealanders. Differences between CMC and FFC centered on time. For example, a South African participant commented: "I don't use email for urgent things." An Australian participant saw FFC communication quicker for resolving issues, rather than emailing back and forth. By contrast, a French participant described the efficiency of email in organizing uncomplicated events, such as a barbecue with friends. Yet, all these examples illustrate the functionality of CMC as a communication tool.

A second difference centred on emotional responses in using CMC. For non-native English speakers, the differences between CMC and FFC were seen in terms of ease of communication, especially if they lacked confidence in speaking English. For example, when communicating in English, a Chinese participant commented that email communication was a more relaxed medium: "I feel more comfortable to use emails because I can read it again and again and make fewer mistakes than talking on the phone." This evaluation indicates that computer use may reduce language confusion and anxiety associated with communicating in another language, thereby making communication clearer between non-native English speaking migrants and those in the receiving culture.

However, in keeping with high-context communication patterns, an Indonesian male and a Chinese woman commented that they preferred FFC because communicators could convey emotions and feelings which made them feel more comfortable in the communication exchange. They concluded that CMC had functional value, but FFC enabled better communication with local New Zealand people because it was "friendly." Another Chinese woman commented on her preference for FFC (because of the inclusion of nonverbal communication) over CMC: "I think you can get more truth out of that [FFC]…you can talk with your hands…and you can talk with your eyes." She qualified by explaining that in getting to know more about the indigenous Maori culture, it was better to "speak to the person directly, rather than just reading it on the Internet." An Indonesian male reiterated this view by claiming FFC was the

best means for getting to know local (New Zealand) people. And a Taiwanese man concluded: "I don't think the Internet is useful or helpful for me to get into the community or socializing. I don't see the connection between them, totally different thing." Thus, the communication practices of these participants showed a preference for FFC in getting to know strangers.

A third point of discussion concerning participants' perceptions of the differences between CMC and FFC concerned the notion of trust. Many of the participants from high context cultures, for example, the East and South-East Asian participants, and a French participant, commented on the lack of security when using the Internet and email, with emails either getting lost, or Web sites not being secure in the purchase of goods. Important business negotiations and expensive purchases were better done face to face. A Korean woman expressed her distrust of CMC because the identity of a person could not be verified: "People can use different names." Or the message may not always be accurately conveyed or interpreted: "Sometimes I just don't say anything in my emails because it can change everything, so I don't like it. Face to face is much easier. I can trust someone sitting next to me, much more comfortable." The Korean participant is revealing her high context communication patterns where nonverbal communication and contextual clues are as important in conveying meaning as the words themselves (Hall, 1976; Hofstede, 1997).

However, a Korean man noted a preference for online communication where interviews were concerned: "I prefer online interview to face to face interview because online interview make us save time and also give us the same effect as face to face interview." This perception contrasts that of the Chinese man (presented earlier) over the use of CMC for interviews. Later the Korean conceded that FFC had advantages: "The body language can help us communication with others," but he remained committed to CMC while he was building on his English language skills.

By contrast, the South African participants used the Internet for banking, and purchasing goods. Two of the South African participants also used the Internet for entrepreneurial activities. In their cases, the need for trust deterred neither connectivity nor communication.

To conclude, participants indicated that communication context and event influenced preferences for CMC or FFC, particularly for participants who valued emotion and nonverbal communication as sense making tools in intercultural encounters.

Discussion

Largely, the migrants in this study constructed their communication practices in ways that enabled them to embraced CMC (the Internet and email) for reasons of efficiency, speed, and economy. The discussion focuses on two key outcomes: uptake and use of ICTs, and the ways in which communication practices shaped migrants' ICT use.

First, migrants' uptake and use of ICTs, and concomitantly, their willingness to engage in CMC, negates the view that migrants are "problematised" with respect to technology use, and the perception that they are in great need of help (Bedford, 2002; Collins, 2002; Hubbard, 2002). The findings also support those in Campbell's (2002) study, demonstrating that migrants do not necessarily fall into the "disadvantaged" category or on the wrong side of the digital divide (Maharey, 2002; Richardson, et al., 2005). Campbell, however, noted that her findings may reflect a bias in participants' selection; largely, they came from highly educated backgrounds.

In the present study, participants were selected from a wide range of socio-cultural and economic backgrounds and were spread across a wide age-range, although many were engaged in professional and business activities. Thus, socio-economic background and age have not appeared to deter participants from engaging in computer use. Similarly, Richardson et al (2005) also reported enthusiastic uptake among another "at risk" group–older people–in New Zealand, including those who were members of SeniorNet (a peer support group of older computer users).

Email enabled participants to maintain contact with those from their same cultural grouping in New Zealand, and more importantly, to describe their experiences to their families in their home cultures. This email contact appeared to be important in lessening distance and feelings of isolation often brought about by the immigration experience (Itzigsohn, 1999). Leonardi, Jackson and Marsh (2004) argued that, in the work environment, people strategically manipulate distance to reduce anxiety resulting from isolation created by geographical distance. Our findings with respect to migrants and their CMC with those in their home cultures appear to complement this view.

Regarding language practice, migrants from collectivist cultures such as those from East and Southeast Asia, and those who were non-native English speakers (especially Chinese speakers), for the most part preferred CMC to FFC with New Zealanders. However, all participants appeared to make use of government Web sites as part of the immigration/settlement process. This is an important outcome of this study, and generally, one that needs careful consid-

eration by Governmental and non-governmental agencies if they aspire to provide information to people from Asian cultures through practices of e-government and Web sites.

Yet, there is a paradox in this outcome. In the case of non-native English speakers who rely on email and the Internet to communicate with others from the same culture, CMC appeared to be a constraining force that limited their communication with people in the host culture. Thus, support agencies that aspire to promote migrants' cultural inclusion into New Zealand society need to consider how they might use the Internet as a first step in encouraging migrants' FFC with New Zealanders. Further research should be directed at the ways in which community and virtual groups might use computers to engage migrants in inclusive communication and social practices within the host culture, and in developing virtual networks that capture and build on migrants' skills and knowledge for wealth creation and meaningful societal participation.

Second, the findings have demonstrated that cultural communication practices have played an important role in shaping migrants' CMC in two key ways: as a sense making process of their immigration experience in maintaining contact with family and friends, particularly in the home culture, and in sourcing news about their home country on the Internet; and second, in managing the operations of daily living in New Zealand. Their communication practices with respect to the technology have several outcomes.

First, these migrants were active users of email and the Internet. This extensive use resulted, for most of the participants, in technological upskilling and empowerment in managing their daily lives in the host country, witnessed most notably in the capabilities of the 84 year old Israeli woman. This outcome suggests that migrants may be able to capitalise on this digital opportunity (Akhtar, Charron, & Lee Hoon, 2003). Further, the potential migrants can offer in the new knowledge economy, in terms of their technical expertise, may not yet have been realised. Currently in New Zealand, the receiving community's attitudes and practices towards employing migrants means that migrants are unable to apply their digital expertise in the workplace. Further, New Zealand organisations may not be benefiting from migrants' networks in their home cultures through the possibilities afforded by digital connectivity. Following the direction of Leonardi, Jackson and Marsh (2004), future studies might also investigate how other groups of migrants, including those who use ICTs for business purposes, strategically manipulate distance to further their immigration and/or work-related goals.

Second, migrants used CMC as a meaningful way to engage in co-cultural communication. Through CMC they engaged in meaningful social practices (Warschauer, 2003) with respect to daily living and making sense of their immigration experience with family and friends. The most notable exponent of this practice was the Taiwanese woman who relied on CMC to communicate with her ethnic Chinese friends on a daily basis. Although from a high context culture, she negated the high context cultural preference of FFC over CMC. By contrast, the Latinos in Leonardi's (2003) study were concerned that computers would discourage cultural participation. They interpreted CMC (in that study, computers and cell phones) as detrimental to meaningful social practice and therefore chose not to engage in using them, instead preferring FCC. Leonardi's findings emphasised that a specific group (Latinos) have specific cultural communication patterns that underpin their assumptions about what constitutes meaningful social practice. Therefore, we argue that, where studies of migrants' uses of ICTs are concerned, each group needs to be studied separately.

Third, in interpreting how migrants' communication practices shaped their use of technology, the theme of trust emerged. Trust in CMC has been described in previous research on Internet and virtual communication. For example, Henderson and Gilding (2004) showed how the Internet provides an environment with unique qualities to enhance self-disclosure and risk-taking in communication situations. Thus, it is important to study the role of trust within the context of emotionally "safe" places for migrants to interact virtually (Mitra, 2006). In this study some of the participants from high-context cultures expressed a lack of trust in email communication and in the use of chatrooms. An inability to verify statements, to develop rapport in a lean medium, and to monitor contextual and nonverbal cues all complicated CMC. Further, the absence of trust–embodied in perceptions of lack of security in cyberspace, and in questions of identity construction via CMC–mitigated against the use of CMC as a tool for meaningful communicative practice beyond the circle of family and friends. Finally, the extent to which migrants were trusting of the Internet differed across cultural groups, with those from collectivist cultures appearing to be less trusting.

Further research might investigate the relationship between trust and CMC, particularly with respect to migrants' uses of the Internet for professional, entrepreneurial, and business purposes. These areas of inquiry may shed light on the unrecognised potential contribution of the migrant population, more generally stigmatised as being a problem rather than a solution to their host country's wealth creating effort.

Associated with the theme of trust is that of emotion. For some participants CMC suppressed displays of emotion, resulting in discomfort in the communication encounter (for the Korean participant) and deterring social interaction when trying to develop a friendship (for the South African woman). Yet, the Web camera drew the Chinese woman and her family in China together. She had used CMC to strategically manipulate distance (Leonardi, Jackson, & Marsh (2004) by bringing a Chinese cultural celebration into her New Zealand living room. Therefore, we cannot make assumptions about how technology facilitates meaningful social practice across cultures without investigating the cultural, social, and communication patterns and context of the individuals engaged in using the technology. These two themes of trust and emotion reiterate Waschauer's (2003) call to explore people's emotional responses to CMC. The findings show that ICTs are not neutral tools in communication, at least for some of the participants in this study.

Beyond the above outcomes, this study has two further implications for migrants' uses of computers: the first concerns intercultural communication, and the second points to the ambiguity of CMC in cyberspace.

The study showed that CMC did not provide opportunities for these migrants to communicate with people in the host culture. The findings illustrate that email and the Internet were less effective as tools for enabling migrants to develop or enrich their social contact with people in New Zealand. This outcome raises questions about the social/interactive potential of CMC in engendering intercultural communication across culturally diverse groups. Co-cultural computer groups, or digital diasporas (Gajjala, 2003), comprised of men and women who share linguistic and socio-cultural backgrounds, may provide a safe haven for co-cultural communication and information seeking. Yet, such groups may not provide opportunities for intercultural communication and cultural inclusion in the receiving community, in particular, for those who are excluded either through language or their cultural communication practices.

Second, we have demonstrated the transformative power of email and the Internet as a communication tool used in smoothing the adaptation/adjustment process for migrants, and providing a safe place for co-cultural communication. Although gender and age appear to transcend ICT engagement in this study, just as they did in Richardson et al's (2005) study, cultural norms remain strong markers of how these participants socially constructed their daily use of the technology. Building on Bhabha's (1994) notion of a third space, we argue that email and the Internet provide a "third cyberspace" for reconstructing and renegotiating self through co-cultural communic-

ation, and a sense-making tool in the adaptation/adjustment process. In a metaphorical sense, this third cyberspace is a borderless community where these participants explored–through co-cultural communication– migration, transience, hybridity, and even difference. Yet, in practice, it is a bordered community, a digital diaspora, where cultural Others find no meaning; often, because of linguistic and cultural differences, they are excluded.

Conclusion

This study has revealed how a small group of migrants to New Zealand have used the Internet and email as a communication tool to participate in the information society and make sense of their immigration and settlement experience. The key outcome of this study is that migrants' communication practices shaped their use of computers and email in a way that suggests a digital opportunity.

Our findings demonstrated a range of enabling factors around the communication practices of migrants vis a vis ICTs. First, non-native speakers still relied on same language Web sites, despite the ubiquitous nature of English on the Internet. Ownership was wide spread, and technical knowledge did not appear to mitigate against computer use. The findings also demonstrated impacting factors such as the way migrants' communication practices shape their use of these technologies. Our analysis showed how migrants actively use computers in their daily lives, for example, to access information, search for jobs, and purchase online. Computers also fulfilled specific social needs, that is, decreasing migrants' sense of distance from their countries of origin and feelings of isolation from friends and family. Migrants, however, displayed differing perceptions of CMC and FFC, preferring the latter for interaction with people from the receiving country in the hope of facilitating their adaptation process. This was expressed either via functional or emotional reasoning. Trust, for instance, was noted as impacting migrants' use of these technologies, especially for communication experiences at all levels and for co-cultural communication.

Thus, while ICTs did not necessarily facilitate the migrants' cultural integration, they were used to pursue long term economic integration with potential widespread results for success in the host society. Most migrants described in this study took charge of their economic absorption experience via these technologies and contributed to the receiving community by using email and the Internet. Our findings support the social constructionist view of technology as thoroughly instilled with human action and interpretation (Jackson, Poole & Kuhn, 2002). The findings also stand in contradiction to previous descrip-

tions of migrants, inspired by deficit models that problematise them both socially and economically, and in their uptake of computer use.

On the contrary, the findings support a radically different view of migrants—the waste of potential value they might add to their receiving country. In the New Zealand context, a recent report (Skilling & Boven, 2006) stressed that New Zealand underestimates the value of its large migrant community in contributing to the country's economic success; further, only a minute proportion of migrants are using their well established offshore networks to help local businesses to break into global markets. The result is a disproportionate loss of potential for New Zealand firms. The report concludes that New Zealand should make much more deliberate efforts to involve the migrant community in global market development efforts. The outcomes of this study are testimony to this perception. Further research should examine the extent to which migrants make economic and social contributions to their host community through ICT uptake.

Acknowledgements

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