

Diasporic Information Environments: Reframing Immigrant-Focused Information Research

Ramesh Srinivasan*

Department of Information Studies, UCLA, Graduate School of Education & Information Studies Building, Box 951520, Los Angeles, CA 90095. E-mail: rsriniva@gmail.com

Ajit Pyati*

Faculty of Information and Media Studies, The University of Western Ontario, North Campus Building, London, ON, N6A 5B7, Canada. E-mail: akpyati@gmail.com

Studies of immigrant information behavior need to be situated within the dynamic contexts of globalization and diaspora. Most immigrant-focused information-science research has focused on distinctly local, place-based scenarios, while diasporic research on information behavior, in contrast, focuses mainly on issues of transnational identity online. This article suggests a methodology that mediates between these two poles, by recognizing the place-based, lived realities of immigrant communities while also acknowledging the existence of complex, globalized diasporic information environments. We refer to this methodology as the Diasporic Information Environment Model (DIEM), and argue that local information-science research can be extended to address the globalized experiences of immigrant communities

Introduction

Accelerated movements of technologies, finances, and cultural migrants have generated an understanding of place and community that can no longer be considered in purely local terms. We suggest researchers consider the term *information environment* to express the context in which information research must be situated. Information environment research has been traditionally applied around defined spatial and institutional boundaries, but this perspective requires reexamination in the culturally globalized setting that defines modernity (Appadurai, 1996; Bhabha, 1994). Globalization, whether of the top-down, corporate-dominated variety (Kellner, 2002) or in its more grassroots conception, is concerned with the

increasing interconnectedness of social, political, economic, and cultural relations in the world. This interconnectedness is manifested in flows of capital and labor, especially with regard to immigration from the global South to the North. The importance of these dynamics, however, has not been given sufficient attention in immigrant-focused information-behavior research. Mean-while, in e-diaspora research (particularly in relation to the online behavior of South Asian immigrants), the contributions of information-behavior research are rarely considered.

We draw from Arjun Appadurai's discussion of the increasingly important role of Information and Communication Technologies (ICTs) in the process of maintaining and creating diaspora to reconcile these two research trajectories that fail to account for each other, and bring the discourse of globalization and diaspora into immigrant information-behavior research (Appadurai, 1996). Appadurai discusses how electronic media, in the context of mass migrations, has created ". . . a new order of instability in the production of modern subjectivities . . . as Pakistani cabdrivers in Chicago listen to cassettes of sermons recorded in mosques in Pakistan or Iran, we see moving images meet deterritorialized viewers" (Appadurai, p. 4).

The complex association between diasporic groups and ICTs has led to a concept of e-diasporas that actively utilize ICTs to achieve community-specific goals. A scenario of moving migrants has made e-diasporas critical for the formation and sustenance of community for immigrant groups. Appadurai argues that nation can be formed in cyberspace, and often cyberspace serves as the sole means of providing a sense of aspiration and hope to placeless migrant populations:

Media plays a critical role in the construction of the migrant archive . . . migrants thus often turn to the media for images, narratives, models and scripts of their own story, partly because the diasporic story is always understood to be one of breaks and gaps . . . Interactive media thus play a special role in the construction of what we may call the

Received June 24, 2006; revised December 12, 2006; accepted January 8, 2007

*Both authors contributed equally to the article.

© 2007 Wiley Periodicals, Inc. • Published online 17 August 2007 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/asi.20658

diasporic public sphere, for they allow new forms of agency in the building of imagined communities . . . Thus, what we may call the diasporic archive, or the migrant archive, is increasingly characterized by the presence of voice, agency, and debate, rather than of mere reading, reception, and interpellation. (Appadurai, 2003, p. 22).

Appadurai (1996) explains that along many lines, globalization is constructed via the deterritorialization and placelessness of many forms of human exchange and communication. He terms these processes “-scapes,” arguing that there is a decentering of movements of humans, images, finances, technologies (Appadurai). Appadurai argues that in many social locations throughout the world, especially those characterized by media saturation and migrant populations, “moving images meet mobile audiences,” disturbing the stability of many sender-receiver models of mass communication. These situations facilitate “works of imagination,” in which imagined worlds and imagined selves can be created within diasporic communities, both in local contexts and across national boundaries (Appadurai). The traditional notion of immigrant communities in isolated, localized pockets in different parts of the world therefore simply does not hold true in an age of accelerated media, information production, and ICTs. Instead, the global and local interact at levels of increasing complexity and fluidity.

In this article, we refer to the concept of “imagined community,” emerging from Benedict Anderson’s seminal text (Anderson, 1991), and alluded to above by Appadurai. This argument articulates how community can be constructed around “imagined” boundaries, circulated via institutions of memory (museums, archives), government and nation (censuses, maps), and media (print, television, Internet). The development of this concept is largely based around Anderson’s analysis of the newly formed nation-states of Southeast Asia from the late 19th to early 20th centuries. Unlike other factors of cultural homogenization, nation for Anderson is not grounded in a strong philosophical, intellectual, or mythological tradition. In Anderson’s words, the nation is imagined because

. . . the members of even the smallest nation never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion . . . Gellner makes a comparable point when he rules that “Nationalism is not the awakening of nations to self-consciousness: it invents nations where they do not exist.” (Anderson, 1991, p. 30)

Therefore, imagined communities are constructed around common imageries, circulated by economic and technological systems. “What, in a positive sense, made the new communities imaginable was a half fortuitous, but explosive, interaction between a system of production and productive relations (capitalism), a technology of communications, and the fatality of human linguistic diversity” (Anderson, 1991, p. 43).

Appadurai elaborates on the imagined community to explain that the production of locality is most directly affected by three factors—the nation-state, diasporic flows,

and electronic and virtual communities—which are themselves articulated in variable and sometimes contradictory ways that depend on the cultural, class, and historical setting within which they come together (Appadurai, 1996). Migrants therefore exist in a world of “in-betweenness,” negotiating cultural forms and identities at the crossroads of the nation-state and global diasporas.

We argue for the relevance of Appadurai’s ideas of globalization and diaspora to immigrant information-behavior and -services research. Most notable studies within this domain have focused on local, place-centered methods (e.g., Metoyer-Duran, 1991; Fisher, Durrance, & Hinton, 2004; Caidi & Allard 2005). The context of diaspora and globalization does not often enter the debate of immigrant information behavior, as immigrant groups and their information needs are framed within certain localized contexts that belie the reality of globalized -scapes. For instance, as the immigration debate continues to dominate the headlines in the United States and in other parts of the Western world, how do immigrants seek information to mobilize and advocate for their rights? If social movements for immigrant rights have a global nature, then how are the information environments for these movements constituted?

Understanding immigrant information behavior through the lens of diaspora expands the terrain for analyzing immigrant information behavior and raises a new set of research questions. In addition, much of the work on immigrants and information is based on the proposition that immigrants have certain needs that are not met (Appadurai, 1996). While this approach provides a useful lens for information behavior research and information service delivery, the focus on “lacking” negates discussion about the agency of immigrant groups in contributing to the work of building information environments that remain invisible to researchers who only consider local, place-defined domains. Our contribution to this debate is to propose the Diasporic Information Environment Model (DIEM). Drawing largely on Appadurai (1996, 2003) and Bhabha’s (1994) theoretical work on immigration, diaspora, and identity, we develop a conceptual framework that offers a new approach by dually considering local and global units of analysis. We will discuss our notion of a “diasporic information environment” later on in this article.

Our research addresses a gap between the research on e-diaspora and immigrant information behavior by mediating between local and global contexts. This article builds on the notion of e-diaspora and discusses notable immigrant information-behavior research, then closes by reconciling these two approaches in a convergent local-global Diasporic Information Environment Model (DIEM) while providing two specific examples to orient future researchers.

E-diaspora: The Discovery of Digital Media by Migrant Communities

Bhabha (1994) has described the dislocation faced by the mutual inclusion and exclusion faced by immigrants as a “third space” of enunciation (Rutherford, 1990). The third

space describes the reality of an immigrant group by its “cultural positionality, its reference to a present time and a specific space” (Bhabha, p. 36). This model challenges the understanding of a culture or a community as a homogenized entity that can be directly correlated to ethnicity (i.e., the experiences and realities for all those of Indian descent are common).

It is that third space, though unrepresentable in itself, which constitutes the discursive conditions of enunciation that ensure that the meaning and symbols of culture have no primordial unity or fixity; that even the same signs can be appropriated, translated, rehistoricized, and read anew. (Bhabha, 1994, p. 37)

Bhabha describes the displacement of the immigrant not only in terms of physical location but also via the varied -scapes, as articulated by Appadurai (1996), that impact different immigrant populations in different ways. Therefore, while common elements characterize an immigrant community to other immigrant communities in the same region, common elements may also characterize the migrant community to those in the homeland or those of the same ancestry in other regions of the world. “The social articulation of difference, from the minority perspective, is a complex, on-going negotiation that seeks to authorize cultural hybridities that emerge in moments of historical transformation” (Bhabha, 1994, p. 3).

Therefore, the new immigrant identity is hybridized, interweaving elements of the homeland and the new land. Emerging from these understandings are a number of case studies that focus on intersections between ICTs and different diasporic communities (e.g., Mitra, 1997; Gajjala, 2006). These studies have provided largely textual and anecdotal evidence of the complexities by which diaspora are defined and their uses of information technologies to bridge generational and spatial boundaries. For example, Mitra has focused on the Indian diasporic presence on the Internet, and its ability to provide “voice” (Bakhtin, 1975/1981) to the marginalized. This work examined how identity and community are formed around the cross-national virtual space of the soc.culture.india newsgroup where immigrants and homelander collectively meet. Mitra points out the potential of an information system to enable multiple authors to emerge in an ongoing dialogue. We highlight Mitra’s work in this case to show how diasporic identities and immigrant information-seeking behavior are being shaped by the Internet and ICT-enabled communication tools. Another aspect of Mitra’s argument is his assertion that online spaces provide a sense of “comfort” for immigrants to express themselves in ways that they would not feel comfortable doing in their physical contexts. In that regard, the Internet can serve as a democratic space of dialogue and response with multiple perspectives. The “external contexts” of the immigrant’s daily life are made visible via the information system. These allow immigrants to seek out others who share histories and practices that are similar to their own.

A theme that recurs is the way that the image of India and the identity as Indians in the West is constantly negotiated by entering into dialogues about the role that India and Indians

play in the culture, society, and politics of the West, particularly in America. (Mitra, 1997)

Mitra’s analysis reveals the fact that diasporic groups are interested in identifying with those with similar cultural ancestry. Immigrant users of information systems bring these priorities and patterns with them when they enter the Internet (Rai, 1995; Mitra, 1997). However, it is also clear that the newsgroup Mitra analyzes is, as he calls it, a “cacophony” (Mitra), a system that is disorganized because it is not truly contextualized according to immigrant community priorities or patterns of information seeking (Srinivasan, 2004). Instead, the newsgroup space attempts to homogeneously combine all those of Indian descent together without enabling those who have locally similar experiences as immigrants to actively connect and share resources (Srinivasan & Shilton, 2006).

A number of studies of diasporic connections to new Web-based information technologies are of a textual, cultural-studies type of analysis, wherein content within a site is connected via qualitative description and analysis to questions of power, agency, and larger cultural movements. Radhika Gajjala, who recently edited an edition of *New Media and Society* focusing on digital diasporas, argues that the key questions to be answered by this mode of analysis are as follows:

What kind of migratory subjects emerge in transnational spaces, at the intersection of the local and global? What “regulatory fictions” and theoretical frames discipline (in a Foucauldian sense) manifestations of identity formations and communities online? Further, how do we perform our embodiment in cyberspace? (Gajjala, 2006, p. 179)

Technologically mediated diasporas, however, are not merely entities in cyberspace, disconnected from the economic, social, and political realities of lived experience. Rather, these diasporas are connected to real social contexts. Research on the Indian/South Asian diaspora, for instance, is critically exploring how globalization simultaneously rearticulates and replays longstanding categories and struggles through the Internet (Gajjala, 2006). For example, the use of the Internet for identity politics, even amongst ideologically opposed groups such as Dalits and Hindu nationalists, rearticulates dominant modes of representing collective identity that exist in the physical world (Chopra, 2006).

Additionally Kwok (1999) has argued that the Internet may enable migrant communities to react, communicate, and mobilize in reaction to global events. Marginalized discourses can be published without having to enter into the traditional hierarchies of power. Diaspora can introduce Web sites to present marginalized perspectives, but can also create electronic systems to present their culture and ideas to visitors and virtual tourists (Srinivasan & Shilton, 2006; Chan, 2005; Miller & Slater, 2000; Kwok; Ho, Babeer, & Khondker, 2002; Srinivasan, in press). Nationalism can be promoted from afar via these diaspora through the creation of sites that assert rights to territorial states (Bakker, 2001). This is exemplified by the work of Tekwani (2003) and Enteen (2006) on the Tamil diaspora. Situating his work on the impact a globalized

set of networks has on Sri Lanka, Tekwani argues that digital networks present the Tamil diaspora of Sri Lanka with the possibility of promoting their causes while organizing resistance movements to the national government. Enteen, in contrast, argues that Tamil (Eelam) diasporic online networks often take on a life of their own, and lack a situatedness that is land-focused, instead ultimately constructing an imagined, cybercommunity. She argues that the Eelam case study points to the fact that online networks around ethnicity need not solely be examined relative to their off-line, place-situated impacts. "Neither language, nor strategies for geopolitical recognition, nor Web site function are foremost in virtual Tamil Eelam. These sites reject space and its corresponding limitations, portraying the nation as a network, connected and sustained through and by its people" (Enteen, p. 245).

Online environments therefore provide a space for immigrant communities to articulate diverse and hybridized imaginations of home (Mallapragada, 2006). An example of this is the emergence of an Indian-American Web, which has disrupted hegemonic notions of Non-Resident Indian (NRI) identity by emphasizing concepts of "home" in relation to ideas of household, homeland, and homepage (Mallapragada). Mallapragada discusses, for instance, how certain Web sites targeting Indian-Americans have reinforced the construction of a gendered nationalism and a Hindu-centric, middle-class Indian immigrant identity during a period of increasing transnational mobility of capital. However, she contrasts this aspect of online social reproduction of dominant class interests with the presence of Indian-American Web sites that challenge this dominant view and envision alternative ways of imagining identity, belonging, and community in local, U.S. environments. Therefore, speaking of one technologically mediated South Asian diaspora is not accurate, nor is the idea that all online-mediated diasporic voices have equal representation, since class, caste, ethnicity, and gender are still important factors in this representation. Diaspora needs to be understood as multifaceted, an aggregation of different sub-cultural groups that vary across social categories including class, gender, religion, and region.

Current e-diaspora research, especially with regard to the South Asian e-diaspora, has significant shortcomings, however. For example, while much of the recent, critical research on the South Asian digital diaspora sheds light on the underlying power dynamics and social, political, and economic realities underlying online identity and community formation (Gajjala, 2006), much of this research does not offer a constructive vantage point for research in information behavior. Additionally, much of the research on South Asian digital diasporas does not address strategies for studying the information behavior of diasporic communities, or information services for these communities.

Locally-Centered Immigrant Information Research: The Need for Diasporic Spaces

There is a clear need to develop a research methodology that can situate the globalized impacts of information

technologies on migrant communities while still focusing on the importance of place. Depending on the location of the community and differences in economic status, information needs vary, covering a wide range including basic English literacy information, information about basic living skills in the new country, and information about maintaining cultural ties to the home country, to name a few. Given the importance of immigration to the United States, more studies that analyze the information-seeking behaviors and needs of immigrant groups are needed. The implications of these types of studies are important in improving the design of information services and ICT-enabled information resources that meet particular behaviors and needs of immigrants. With the reality and importance of globalization in today's world, these concerns are not just "minority issues" but affect society as a whole. While immigration occurs at all socioeconomic levels in the U.S., particular concerns arise regarding the needs of low-income immigrants and the reality of "information poverty" and the digital divide.

Many scholars have decried the unevenness of technology access that characterizes different immigrant groups and therefore engenders divides that cut along traditional strata of ethnicity, class, and nation (NTIA 1999; Mehra, Markel, & Bishop, 2004; Srinivasan, 2004; Srinivasan, in press). This literature argues that the resources that can be accessed via information technologies are critical to the development and nurturing of communities, and therefore distinctions and inequities are rectified simply by the provision of information access. A few voices have emerged to extend these arguments by arguing that access is only part of the process needed to stimulate resource sharing within ethnic and underprivileged populations (Fisher, Marcoux, Miller, Sanchez, & Cunningham, 2004; Srinivasan & Huang, 2005; Srinivasan, 2005; Fisher, Durrance, & Hinton, 2004; Chu, 1999; Su & Connaway, 1995). This may involve an understanding of the information flows and processes that are specific to the cultural group (Geertz, 1978; Fisher, Marcoux, et al., 2004), the ontological priorities and representations held within the community (Srinivasan & Huang, 2005), or its information ecologies, i.e., the interaction between the peoples, places, technologies, and values that are specific to the community (Nardi & O'Day, 1999). This is based on the understanding that while immigrant communities can indeed benefit from information systems (Srinivasan, 2004; Srinivasan & Huang, 2004; Matei & Ball-Rokeach, 2001; Ess & Sudweeks, 2001), the development of these systems must still acknowledge community-specific realities.

Complementing these studies, community informatics research (Bishop, Mehra, Bazzell, & Smith, 2000; Gurstein, 2000; Srinivasan, in press) has attempted to position information technologies within understandings of specific community literacies, needs and priorities, and knowledge-representations or ontologies (Srinivasan, 2005, in press; Srinivasan & Huang, 2005). Immigrant-focused information-services research has further complemented this research, uncovering important differences within immigrant communities across generation (Chu, 1999; Su & Connaway, 1995)

gender (Gujit & Shah, 1998), and subcommunity strata. Some of these approaches have essentially attempted to extend traditional information-seeking behavior models (and information-service models) irrespective of community, without explicitly addressing the complexity of factors that generate and sustain diasporic groups.

Important benchmark studies have focused on understanding the information-seeking behavior of immigrant groups, the work of Metoyer-Duran (1991) on ethnolinguistic gatekeepers being one important example. She argues such gatekeepers “act as agents of acculturation when they disseminate information within their communities” (Metoyer-Duran, p. 320). Thus, gatekeepers are key information agents and disseminators within these communities, operating within the cognitive and affective domains. She describes the cognitive domain in relation to established theories of learning that promote the hierarchical acquisition of knowledge, while the affective domain is concerned with the gatekeeper’s cultural orientation toward information needs and use. While the details of these domains are not important to this discussion, the subsequent “profiles” that Metoyer-Duran derives in relation to these domains has important consequences for understanding the information-seeking behavior of these groups. She defines six different profiles for gatekeepers as (a) Impeder; (b) Broker; (c) Unaffiliated Gatekeeper; (d) Affiliated Gatekeeper; (e) Information Professional; and (f) Leader/Executive.

In reference to the model we are proposing, this taxonomy is useful for exploring the role of gatekeepers in the local contexts of diasporic South Asian communities. However, as we propose, the increasing importance of electronic sources for this type of information may circumvent some of these local, gatekeeper-mediated information sources. Thus, gatekeeping may be useful in understanding some of this information behavior in local contexts, but may not be as useful a theoretical construct in the context of online information-resource seeking.

Another strand of research in the immigrant information-seeking literature of import to this discussion is the work on “information grounds.” According to Fisher, information grounds are “environment(s) temporarily created when people come together for a singular purpose but from whose behavior emerges a social atmosphere that fosters the spontaneous and serendipitous sharing of information” (Fisher, 2005, p. 185, as quoted in Pettigrew, 2000, p. 811). The key qualities of information grounds are their temporality and existence in “nontraditional” information environments. Examples of information grounds include restaurants, hair salons, buses, medical offices, and lines at the grocery store, to name a few. One example of this particular kind of information-grounds research is found in “Information Grounds and the Use of Need-Based Service by Immigrants in Queens, New York: A Context-Based, Outcome Evaluation Approach” (Fisher, Durrance, & Hinton, 2004). The researchers in this article focus on exploring how programs in literacy and coping skills run by the Queens Borough Public Library in New York City might function as information grounds. The researchers conclude that these programs constitute a “grand context,” and a rich

information grounds for immigrant populations. Some gains achieved in these programs include improved coping skills and technology skills, and better preparation for employment.

The concept of place has also been demonstrated to be of importance in the notable information-behavior research conducted via the Metamorphosis Project (Metamorphosis Project, n.d.). In studies of the online behavior of ethnic communities, research has shown that online social ties are related to offline social and cultural ties (e.g., see Matei & Ball-Rokeach, 2001). Hampton and Wellman (2003) have shown, for instance, that increased online social communication is related to stronger social ties within a local community. Thus, contrary to predictions that computer-mediated communication would be most beneficial in increasing contact with distant social ties, wired residents experienced the greatest increase in social contact with those who live nearby (Hampton & Wellman). This research presents us with a seeming contradiction: while we are arguing for global, diasporic information sources and information behavior, research has shown the importance of online environments to local environments.

This apparent contradiction can be resolved by exploring the work of Wellman (2006) further. As one of the leading Internet and social network researchers, Wellman has developed a typology for understanding the Internet landscape. For instance, he uses the terms “little boxes,” “glocalization,” and “networked individualism” to describe three distinct, but contemporaneous Internet phenomena (Wellman).

“Little boxes” refers to traditional forms of communication and information transfer, contained within localized groups, neighborhoods, and communities. “Glocalization,” on the other hand, refers to intense local and extensive global interaction, characterized by “place to place” interactions. Networked individualism, however, as Wellman argues, is now the leading edge of Internet phenomena: individuals and their networks are now more important than groups (Wellman, 2006). This idea of networked individualism runs counter to McLuhan’s (1964) global village idea, as the Internet facilitates physically close local ties as well as physically distant ties (Wellman & Hogan, 2004). For instance, the Internet is helping to promote e-diasporas of all sorts, as immigrants use the Internet to stay linked with their old country, communicate with friends and relatives, read newspapers online, and access uncensored information (Wellman & Hogan). The global village and networked individualism concepts, however, may not necessarily be oppositional. For instance, electronically enabled diasporas may at once promote individually motivated information-seeking behavior, while in the context of a globally defined sense of group identity. Thus, the concept of glocalization helps us transcend the apparent local/global contradiction in immigrant online behavior: while local environments remain important, immigrant information behavior cannot be confined merely to local contexts, for global information environments are more and more ubiquitous.

Of the locally based information services to immigrant groups, library programs and services have received attention

in the research literature. However, while librarians and other information service professionals for the most part show an active interest in serving immigrant populations, studies have shown that the library often does not rank high as an information source in immigrant communities (Chu, 1999; Metoyer-Duran, 1991). Despite some of these findings, Caidi and Allard (2005) cite the importance of the library as an agency directly involved in facilitating the social inclusion of immigrants. As these authors argue, libraries can take a more active role in making their services more relevant to immigrant communities, from partnering with local community organizations to including archival material of immigrant communities. The task of partnering with local immigrant community organizations reflects an information and referral (I&R) services approach advocated earlier in the library world (Metoyer-Duran). In including local immigrant archival material in library collections, Caidi and Allard are hinting at Appadurai's (2003) description of archives as an active project that searches for and disseminates memories that are explicitly relevant for the community itself, rather than collecting memories based on the significance of other stakeholders in the homeland.

We believe this orientation is useful, seeing librarians and information science researchers as active facilitators of local immigrant information resources, and agree with Caidi and Allard (2005) in the development of a more holistic approach to immigrant information services. However, our point of departure is that social inclusion is not the only pertinent goal: recognizing the diasporic space that these archives inhabit and promoting the possibility of the diasporic imagination is another goal as useful as social capital development and social inclusion. As Appadurai (2003) reminds us, locality is a process of constant negotiation; the locality that we take for granted is part of a larger global context. Recognizing and framing research questions and information services around the transnational, fluid identities of immigrant communities is an essential component of a holistic approach to immigrant information behavior. This approach acknowledges the contribution of immigrant communities to transnational diasporic information environments, and more accurately situates immigrant information issues within the diasporic contexts they create and inhabit.

A New Convergent Model: Diasporic Information Environments (DIEM)

After considering the material discussed above, key questions emerge that remain unanswered. These include

1. How can a new media system¹ impact local educational and cultural goals within a diasporic immigrant community?
2. Are transnational, diasporic information resources relevant to immigrant information behavior? If so, how do they influence immigrant information behavior?

¹By new media system, we are referring to the wide range of ICT-mediated technologies—Internet-enabled spaces, mobile phones, etc.—that are creating and mediating e-diasporas.



FIG. 1. Diasporic Information Environment Model (DIEM): Research methods.

3. What types of ICT-mediated diasporic information sources are various immigrant groups accessing? How are these information sources related to and interacting with local contexts and local information sources?
4. What forms of information lend themselves more easily to diasporic contexts? Are certain information behaviors and needs associated primarily with diasporic information sources?
5. How can a diasporic new-media system impact the performance and ability of libraries and other “public” information institutions to serve diverse community needs? Does it impact the information flows between different members and institutions?

We propose our model, the Diasporic Information Environment Model (DIEM), as a means for answering these types of questions and as a tool for analyzing the information reality of diasporic immigrant communities. A visual representation of the research methods utilized in the DIEM model is given in Figure 1. The entire field of the diagram represents the diasporic information environment. Information-research methods, such as reflexive ethnography, social network analyses, and community-based information services and action research serve as a metaphorical bridge between the local and global information environments of immigrant communities. These methodological tools capture the diasporic information realities of many immigrant communities.

A visual representation of some of the information grounds utilized in the DIEM model is given in Figure 2. This list is not exhaustive, but highlights some examples of potential information grounds when studying diasporic information environments. We use Fishers (2005) concept of information grounds, and also extend this concept to include “virtual” diasporically mediated grounds, such as diasporic Web sites (e.g., chat rooms, news sites, social networking sites, etc.). Other information grounds of interest include community centers for immigrant groups, public libraries, and other nontraditional information grounds such as restaurants and shops that cater to diasporic immigrant communities.

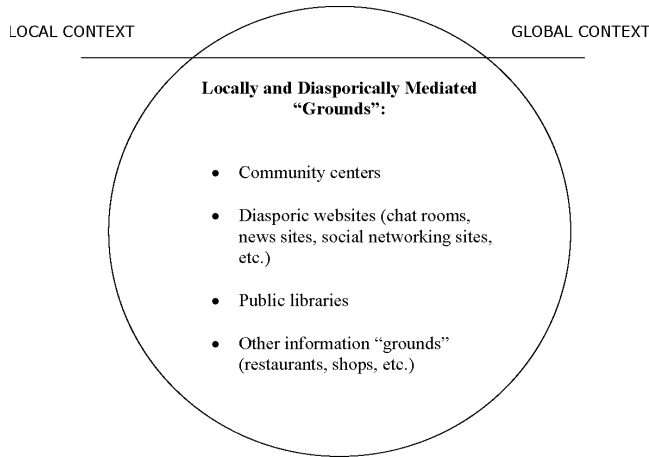


FIG. 2. Diasporic Information Environment Model (DIEM): Locally and diasporically mediated information "grounds."

Figure 3 represents the overall concept for the Diasporic Information Environment Model (DIEM). The information-research methods and locally and diasporically mediated information grounds that are diagrammed in Figures 1 and 2, respectively, are used in concert to develop the DIEM. These research methods, as indicated by the arrow, are used to analyze these information grounds. The result is the creation of the DIEM, which develops an analytic perspective that

captures mutually the local and global dynamics of immigrant information environments. The collective DIEM therefore can be effectively and comprehensively applied across diasporic-information initiatives:

- Reflexive Ethnographies (Hammersley & Atkinson, 1983): This research approach asks the researcher to tell the story of the community from its own members' points of view, while recognizing that the data they receive will place him or herself into the community and attempt to elicit a detailed understanding of community members' networks and interactions. By bridging across and working with different community members, more inclusive data can be gathered and common patterns can be identified.
- Social Network Analyses: Social network questionnaires can provide a glimpse into the details of community members' networks. These questionnaires can be based on established methods reviewed by Marin and Hampton (2005), Wasserman and Faust (1994), and van der Poel (1993). The survey instrument could incorporate both a name-generator free-recall method to collect data on personal-support networks (ego networks; Marin & Hampton; Fischer, 1982; Wellman, 1979) and a position generator to collect information on network size and diversity (Lin, Fu, & Hsung, 2001). Surveys can also explicitly focus on media and communication technologies used by community members. This allows researchers to identify which technologies connect members to which other individuals and institutions within the social

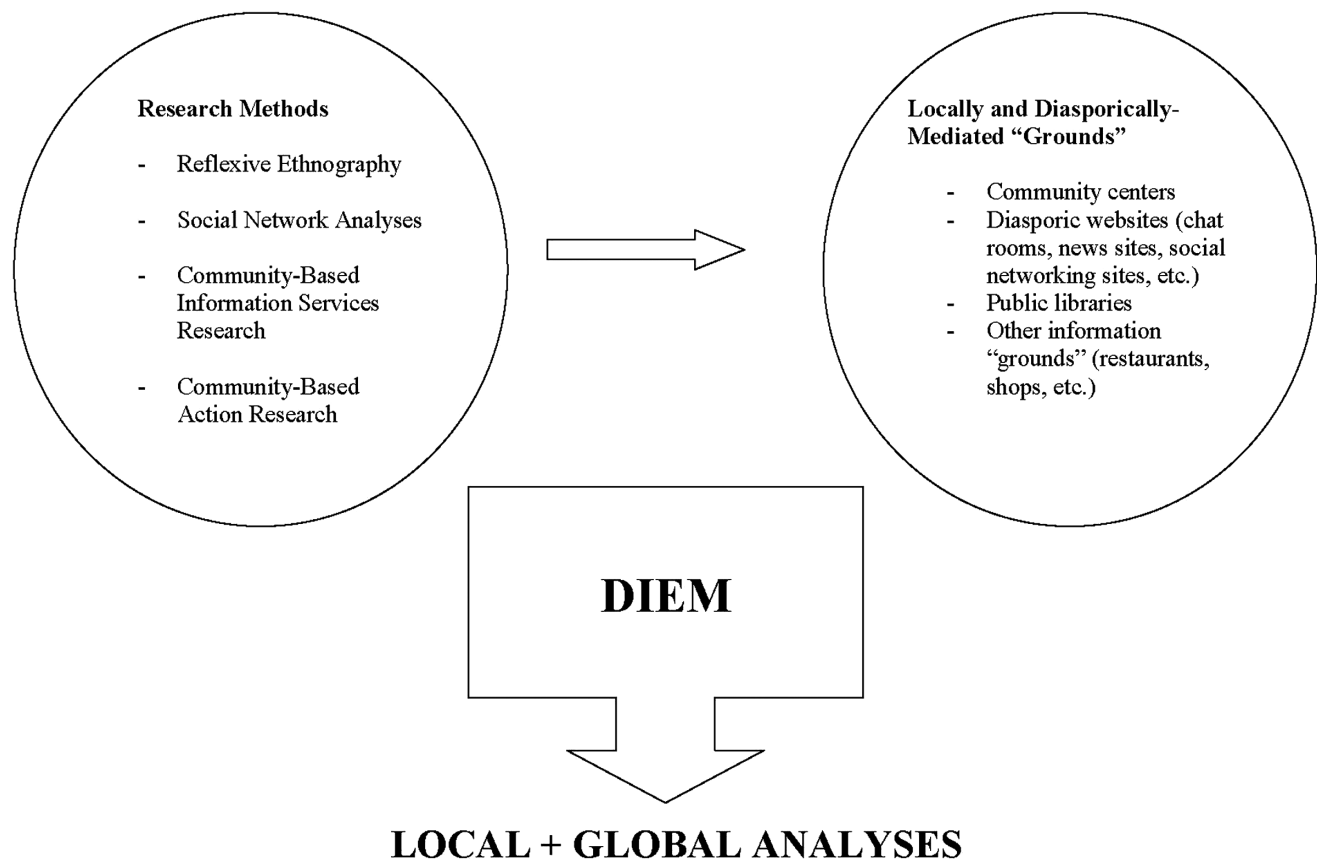


FIG. 3. Diasporic Information Environment Model (DIEM): Linking global and local contexts.

network. Once network analyses are conducted with a cross section of community members, researchers may be enabled to trace the constitution and nature of community networks and determine which are important for the provision of information services.

- Implications also exist for enhanced information services to diasporic immigrant communities, particularly through methods such as asset-mapping (Pinkett, 2003) and participatory, community-based action research (Lather, 1986). This type of active, community-based research follows on what Caidi and Allard (2005) advocate with regard to maintaining local community archives in information institutions such as public libraries. Librarians and information professionals can work with diasporic immigrant communities in maintaining local community archives and information sources with attention to the global dimension of immigrant information sources and environments. The methods we describe can enhance these types of active, community-based information services.

Rather than describing the model in abstract terms, we will use two case studies to illustrate the dimensions of this model. The first case relates to work done with a Somali refugee community in Boston, while the second refers to an instance of cultural-heritage information, specifically information related to the Indian festival of Diwali. Each case study will be analyzed with reference to the methodological tools and conceptual framework of the DIEM.

Somali Refugees in Boston

We point to Srinivasan's research (2004) with a refugee community from Somalia/Somaliland as an example community where information-services research may benefit from the Diasporic Information Environment Model. Somalis have been displaced into different global pockets due to an ongoing civil war. As a result, the traditional clan-based structure of these communities has been broken, as refugee pockets span groups that were traditionally considered distinct within the homeland. Srinivasan, who worked extensively with refugees in Boston, noted in his research that these individuals should not be considered a tightly-knit community; instead, individuals were in constant communication with others in refugee pockets in other parts of the United States, Kenya, Italy, and so on. We also note from this research that for community members to acknowledge a baseline of common experience with other refugees in Boston, attention would have to be turned to activities in the homeland, or in other locations. We believe that the provision of information services to such a community must therefore be based around a model that acknowledges that refugees in Boston maintain a globalized set of networks and priorities. Some examples of these priorities and networks include the following:

- Citizenship goals as stated by various refugees often involved expressing an interest and/or need to trace their genealogies, which involved developing methods by which

they could communicate with others in the homeland or other refugee pockets.

- Economic enterprises would be based around the need for buying and selling to other Somalis across the country and globe, rather than the five to ten thousand living in the Boston region.
- Clan-based structures impact students' senses of authority and kinship; educational initiatives need to consider these structures.
- Cultural initiatives were inherently global in scope, and based on documenting and reinterpreting histories from the homeland, as well as the various contemporary realities faced by different Somalis in other refugee pockets.
- Political initiatives involved impacting elections in the homeland. Finances and propaganda were being channeled from different individuals to others in the homeland and other refugee pockets.

How could the DIEM work in such a scenario? We believe the following to be relevant applications:

- Reflexive Ethnography: These methods can help us establish and map out community-specific information goals and needs. In particular, it will allow us to acknowledge the different subcultural components of the community, without first approaching the community with a predetermined model for needs assessment. Reflexive ethnography will simply involve engaging members of the community to tell their stories, and from the range of material we receive, we decide on other data collection methods as well as relevant information grounds. In the Somali case, we would anticipate important information grounds being local cable access television programming, mosques, high schools (after-school programs devoted to Somali youth), local Somali-owned shops/restaurants, and the larger African services centers.
- Social Network Analyses: We believe that understanding the nature of social networks within this community would be significant, particularly because resources are often shared across a set of urban nodes throughout the United States and Canada. Demographers have uncovered that Somali communities have established pockets within such diverse local environments as San Diego, Minneapolis, Lewiston (Maine), and Toronto. A social network survey can allow us to acknowledge how significant connections are within Boston and in relation to these other nodes. If we find, for example, that there is a significant skew toward networks across cities, information services, such as business data for all Somali enterprises across North America, can be provided to community members in Boston. On the other hand, if networks are largely skewed toward the local (even bridging to other communities within Boston), information services that are more centered on geographic realities can be developed (such as a GPS-driven information resource, etc.).
- Community-based action and information services research: This approach could be quite empowering for the Somali community in that it could ask Somalis (much as the Village Voice project did) to document their own experiences, whether around cultural, economic, political, or other themes. This community-centric authorship holds great potential to mobilize community members. Additionally,

engaging communities to directly take action around identified obstacles to development is a key element of action research. We hypothesize that the social documentation created by community members could allow for identification of both capacities and shortcomings (Srinivasan, in press), and allow for the DIEM to mobilize community action.

Diwali: An Indian Festival

The case of cultural-heritage information also provides an example of the usefulness of a DIEM approach. Diwali, a primarily Hindu festival, is celebrated in different forms throughout India, but has taken on a prominent role in diasporic communities as a major Hindu holiday. Also known as the “Festival of Lights,” Diwali is held on five consecutive days, and is based on a Hindu calendar, with the festival occurring on the advent of the New Year in a lunar calendar of North India (Religion Facts, n.d.). While the festival occurs at the same time in different parts of India, it does not necessarily coincide with lunar New Years in other parts of India, particularly South India (Religion Facts). Thus, while the festival named Ugadi refers to the New Year festival in the state of Karnataka (in South India), this festival is not synonymous with Diwali in this part of India, even though Diwali is celebrated in this region of India as well.

Therefore, finding information about this festival is not a simple task of finding the “one” authoritative source on Diwali, as different communities celebrate it in different ways. Moreover, Diwali is not a holiday of Indian Muslims or Pakistanis, therefore, referring to Diwali as a pan-Indian holiday is not correct. In addition, Diwali is celebrated in different religions, such as Sikhism and Jainism, but with different cultural and religious referents (Wikipedia, n.d.). Diwali has also become a significant holiday in other parts of the world; in countries such as Trinidad and Tobago and Malaysia, for instance, it is a national holiday.

The connections that local Hindu communities make with Diwali, therefore, are rooted in an understanding of Diwali based on local and regional inflections. In addition, with the diasporic importance of Diwali, local Indian populations are creating a new importance for Diwali as a form of Hindu identity in their adopted lands. Thus, the local and the global interact to create a Hindu immigrant community’s understanding of Diwali. Information sources about Diwali will consequently be both local and diasporic. This festival is becoming part of local practices, but is connected to a sense of global Hindu identity. Limiting research on the cultural information behavior of Hindus to just local contexts, therefore, does not speak to the diasporic information reality of this community.

The research methods and information grounds we discuss as part of the DIEM model can be applied specifically to this example of the Diwali festival. The following provides some potential applications of the model in the study of this diasporically mediated cultural and religious practice:

- Reflexive Ethnography: This method will help in understanding the various practices of Diwali from a community-defined

perspective. Researchers will need to build trust with Indian immigrant communities, helping to gain insights into the diverse meanings of this cultural practice from a wide range of participants, based potentially on such factors as age, gender, and cultural heritage (especially given the immense cultural, linguistic, and religious diversity of India). Focusing on different communities within the larger Indian population (e.g., in India and other parts of the world) could also form the basis of an insightful comparative study of cultural and religious practices associated with Diwali. Information grounds could include Indian/South Asian community centers, Hindu temples, community Web sites, and Hindu religious Web sites.

- Social Network Analyses: How does a particular Indian immigrant community develop social networks and information practices around this holiday? Social network analysis provides insights into the cultural and religious information network of this community. Beyond this particular example of Diwali, we can begin to understand how information about other Indian holidays is transmitted in this community. For instance, how does a newly arrived Indian immigrant in a particular community develop the information networks to help her construct/recreate the cultural practices associated with certain holidays? These networks can be studied in information grounds specific to the community (cultural association meetings, temples, shops, etc.), but the role of ICT-mediated networks such as chatrooms, blogs, and religious Web sites should be studied as well.
- Community-based action and information services research: One manifestation of this research emphasis is work with local communities focused on documenting information about this holiday. Public libraries, for instance, can serve a particular Indian immigrant community by selecting materials that are relevant to the community’s cultural and religious practices. Many public libraries in multicultural and large immigrant population communities have realized the importance of these types of activities, as they are increasingly needed in a diverse society. While developing culturally relevant collections validates the social inclusion of this immigrant community, other activities, such as archiving material related to the local immigrant community’s holiday practices (fliers of public celebration events, religious hymns, festival photographs, etc.), offer further opportunities for the community’s voice to be included in local information institutions.

Conclusion

We believe the two cases presented demonstrate the need for a new research orientation in immigrant information-behavior studies that is responsive to and accepting of the ever-shifting global dynamics that impact our understanding of community. Global forces are constantly affecting and creating new productions of locality (Appadurai, 1996), and immigrant information research must respond to this reality. We have begun a research project, entitled the South Asian Web (Srinivasan & Shilton, 2006), that attempts to study the means by which a Web-based information system can be designed to impact the Los Angeles-region-based South Asian diaspora. By following the specific components of DIEM, we hope to gain insights into the

possibilities and impacts of designing ICTs that are both local and global. Data from this project will be collected over the next two years and presented in future publications. Our contribution is to highlight the global and diasporic nature of immigrant information environments, and present a preliminary model and call for a research agenda that captures this reality.

References

- Anderson, B. (1991). *Imagined communities: Reflections on the origin and spread of nationalism*. London: Verso.
- Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. Minneapolis: University of Minnesota Press.
- Appadurai, A. (2003). *Archive and Aspiration*. In J. Brouwer & A. Mulder (Eds.), *Information is alive* (pp. 14–25). Rotterdam, Netherlands: V2 Publishing/NAI Publishers.
- Bakhtin, M.M. (1981). *The dialogical imagination*. (M. Holquist, Ed., C. Emerson & M. Holquist, Trans.) Austin: University of Texas Press. (Original work published 1975)
- Bakker, P. (2001, February). *New nationalism: The Internet crusade*. Paper presented at the International Studies Association Annual Convention. Retrieved May 10, 2006, from <http://www.tamilnation.org/selfdetermination/nation/bakker.pdf>
- Bhabha, H. (1994). *The location of culture*. London: Routledge Press.
- Bishop, A., Mehra, B., Bazzell, I., & Smith, C. (2000). *Socially grounded user studies in digital library development*. *First Monday*, 5(6). Retrieved May 15, 2006, from http://www.firstmonday.org/issues/issue5_6/bishop/index.html
- Caidi, N., & Allard, D. (2005). *Social inclusion of newcomers to Canada: An information problem?* *Library and Information Science Research*, (27)3, 302–324.
- Chan, B. (2005). *Imagining the homeland: The Internet and diasporic discourse of nationalism*. *Journal of Communication Inquiry*, 29(4), 336–368.
- Chopra, R. (2006). *“Global primordialities: Virtual identity politics in online Hindutva and online Dalit discourse.”* *New Media and Society*, 8(2): 187–206.
- Chu, C.M. (1999). *Immigrant children mediators (ICM): Bridging the literacy gap in immigrant communities*. *The New Review of Children’s Literature and Librarianship*, 5, 85–94.
- Enteen, J. (2006). *Spatial conceptions of URLs: Tamil Eelam networks on the World Wide Web*. *New Media and Society*, 8(2), 229–249.
- Ess, C., & Sudweeks, F. (2001). *Culture, Technology, Communication: Towards an Interultural global village*. Albany, NY: State university of New York Press.
- Fischer, C. (1982). *To dwell among friends*. Berkeley: University of California Press.
- Fisher, K.E. (2005). *Information Grounds*. In K.E. Fisher, S. Erdelez, & L. McKechnie (Eds.), *Theories of information behavior* (pp. 185–190). Medford, NJ: Information Today.
- Fisher, K.E., Durrance, J.C., & Hinton, M.B. (2004). *Information grounds and the use of need-based services by immigrants in Queens, New York: A context-based, outcome evaluation approach*. *Journal of the American Society for Information Science and Technology*, (55)8, 754–766.
- Fisher, K.E., Marcoux, E., Miller, L.S., Sanchez, A., & Cunningham, E.R. (2004). *Information behaviour of migrant Hispanic farm workers and their families in the Pacific Northwest*. *Information Research*, 10(1). Retrieved March 4, 2006, from <http://informationr.net/ir/10-1/paper199.html>
- Gajjala, R. (2006). *Editorial: Consuming/producing/inhabiting South-Asian digital diasporas*. *New Media and Society*, 8(2), 179–185.
- Geertz, C. (1978). *The Bazaar Economy: Information and Search in Peasant Marketing*. *The American Economic Review*, 68(2): 28–32.
- Gujit, I., & Shah, M. (1998). *Waking up to power, conflict, and process*. In I. Gujit & M. Shah (Eds.), *The myth of community: Gender issues in participatory development* (pp. 1–23). London: Intermediate Technology Publications.
- Gurstein, M. (Ed.). (2000). *Community informatics: Enabling communities with information and communications technologies*. Hershey, PA: Idea Group.
- Hammersley, M., & Atkinson, P. (1983). *Ethnography: Principles and practice*. London: Tavistock.
- Hampton, K., & Wellman, B. (2003). *Neighboring in Netville: How the Internet supports community and social capital in a wired suburb*. Retrieved March 1, 2006, from http://www.chass.utoronto.ca/~wellman/cgi-bin/counter.php?url=http://chass.utoronto.ca/~wellman/publications/neighboring/neighboring.netville.pdf&f=neighboring_netville&mode=1
- Ho, K.C., Babeer, Z., & Khondker, H. (2002). *“Sites” of resistance: Alternative Websites and state-society relations*. *British Journal of Sociology*, 53(1), 127–148.
- Kellner, D.K. (2002). *Theorizing globalization*. *Sociological Theory*, 20(3), 285–305.
- Kwok, K.W. (1999). *Globalisation and Singaporean transmigration: Re-imagining and negotiating national identity*. *Political Geography*, 18(5), 563–589.
- Lather, P. (1986). *Research as Praxis*. *Harvard Educational Review*, 56(3), 257–277.
- Lin, N., Fu, Y., & Hsung, R.M. (2001). *The position generator: Measurement techniques for investigations of social capital*. In N. Lin, K. Cook, & R. Burt (Eds.), *Social capital: Theory and research* (pp. 57–84). New York: Aldine De Gruyter.
- Mallapragada, M. (2006). *Home, homeland, homepage: Belonging and the Indian-American Web*. *New Media and Society*, 8(2), 207–227.
- Marin, A., & Hampton, K. (2005, February). *Simplifying the collection of support network data: Evaluating a middle road between multiple and single name generators*. Paper presented at Sunbelt XXV: International Sunbelt Social Network Conference, Redondo Beach, California.
- Matei, S., & Ball-Rokeach, S.J. (2001). *Real and virtual social ties: Connections in the everyday lives of seven ethnic neighborhoods*. *American Behavioral Scientist*, 45(3), 552–566.
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. Cambridge, MA: MIT Press.
- Metamorphosis Project. (n.d.). Retrieved June 1, 2006, from <http://www.metamorph.org/>
- Metoyer-Duran, C. (1991). *Information-seeking behavior of gatekeepers in ethnolinguistic communities: Overview of a taxonomy*. *Library & Information Science Research*, 13, 319–346.
- Metoyer-Duran, C. (1993). *The information and referral process in culturally diverse communities*. *RQ*, 32(3), 359–371.
- Miller, D., & Slater, D. (2000). *The Internet: An Ethnographic Approach*. Oxford, UK: Berg Publishers.
- Mitra, A. (1997). *Virtual commonality: Looking for India on the Internet. In Virtual Identity: Identity and communication in cybersociety* (pp. 55–79). Thousand Oaks, CA: Sage.
- Nardi, B.A., & O’Day, V. L. (1999). *Information ecologies: using technology with heart*. Cambridge, MA: MIT Press.
- National Telecommunication and Information Administration (NTIA), U.S. Department of Commerce (1999). *Falling through the Net: Defixing the digital divide*. Washington, D.C. Available from: <http://www.utia.doc.gov/utiahome/ftn99/contents.html>. Accessed June 1, 2006.
- Pettigrew, K.E. (2000). *Lay information provision in community settings: How community health nurses disseminate human services information to the elderly*. *Library Quarterly*, (70)1, 47–85.
- Pinkett, R. (2003). *Community technology and community building: Early results from the Creating Community Connections Project*. *The Information Society*, 19(5), 365–379.
- Rai, A.S. (1995). *India online: Electronic bulletin boards and the construction of a diasporic Hindu identity*. *Diaspora: A Journal of Transnational Studies*, 4(1), 31–58.
- Religion Facts. (n.d.). *Diwali: Hindu Festival of Lights*. Retrieved June 10, 2006, from <http://www.religionfacts.com/hinduism/holidays/diwali.htm>
- Rutherford, J. (1990). *The third space: Interview with Homi K. Bhabha*. In *Identity: Community, Culture, Difference* (pp. 207–221). London: Lawrence & Wishart.
- Srinivasan, R. (2004). *Reconstituting the urban through community-articulated digital environments*. *Journal of Urban Technology*, 11(2), 93–111.

- Srinivasan, R. (2007). Ethnomethodological Architectures: Information systems driven by cultural and community visions. *Journal of the American Society of Information Science and Technology*, 58(5), 723–733.
- Srinivasan, R., & Huang, J. (2005). Fluid ontologies for digital museums. *International Journal on Digital Libraries*, 5(3), 193–204.
- Srinivasan, R., & Shilton, K. (2006). The South Asian Web: An emerging community information system in the South Asian diaspora. In G. Jacucci & F. Kensing (Eds.), *Proceedings of the Ninth Conference on Participatory Design: Expanding boundaries in design* (pp. 125–133). New York: ACM Press.
- Tekwani, S. (2003). The Tamil diaspora, Tamil militancy, and the Internet. In: K.C. Ho, R. Kluver, & K.C.C. Yang (Eds.), *Asia.com: Asia encounters the Internet* (pp. 175–192). New York: RoutledgeCurzon.
- Van der Poel, M. (1993). Delineating personal support networks. *Social Networks*, 15(1), 49–70.
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge, MA: Cambridge University Press.
- Wellman, B. (1979). The community question: The intimate networks of East Yorkers. *American Journal of Sociology*, 84, 1201–1231.
- Wellman, B. (2006). Little boxes, globalization, and networked individualism. Retrieved March 1, 2006, from <http://www.chass.utoronto.ca/~wellman/publications/littleboxes/littlebox.PDF>
- Wellman, B., & Hogan, B. (2004). The Internet in everyday life. Retrieved March 1, 2006, from http://www.chass.utoronto.ca/~wellman/publications/inet_everyday/inet_everyday.pdf
- Wikipedia (n.d.) Diwali. Retrieved June 10, 2006, from <http://en.wikipedia.org/wiki/Diwali>