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India.com: the construction of a space between

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Abstract: The study of information and communication technologies (ICT) by geographers has evolved over the past third of a century from a concentration on friction of distance and spatial organization toward a set of four interrelated social approaches: ICT as a set of contested terrains, ICT as a means of perception, ICT as a form of embodiment, and ICT as virtual places or spaces (distanciated social contexts). These approaches are complementary rather than contradictory. What is absent thus far from the ICT debate is attention to ethnicity, except as a surrogate of economic class or in vague allusions to a digital divide. Since people use ICT to build a sense of community and personal identity, both of which relate strongly to ethnicity, the topic deserves attention. The four approaches are integrated here to understand the appropriation of the internet by temporary and permanent immigrants to the USA from India (typically called Non-Resident Indians or NRIs). The concept of virtual space can be used to organize discussion of the use of the internet by NRIs. To better encapsulate the virtual space we employ a map of what we call 'bridgespace', a virtual space that supports flows of people, goods, capital and ideas between South Asia and North America. We consider the full range of sites involved in the bridgespace, then direct our attention in particular to 'matrimonial' sites, those sites designed to support the identification of marriage partners.

Key words: globalization, communication, internet, diaspora, India.

I Introduction

The concept of ethnicity implies a place of origin. An ethnic group consists of 'a people' with genetic and cultural similarities deriving from residence in a particular place. The concept of ethnicity also gestures to a real or imagined time when a 'people' lived together in a particular place. This anchoring of ethnic identity in 'there and then' does not rule out the appropriation of new ideas and technological innovations in the here

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and now by members of an ethnic group. People inevitably feel separated from others because both space and time contradict the ideal of community (Tinder, 1980). This is why technologies that appear to collapse space and time can make any community (including an ethnic community) seem more close-knit, and therefore closer to the ideal. Ironically, when 'place-transcending' technologies facilitate the creation of ties through space and reduce the separation between here and there, negating place, this can strengthen a sense of ethnic identity, which implies a tie between self and place. A further irony is that a new technology can be used to cognitively connect with what is a symbol of primordial essence.

The ethnic group we have chosen for this study consists of Indian citizens living in the USA as well as immigrants from India and their descendants. Collectively this group will be referred to as NRIs (non-resident Indians). The term 'ethnic group' implies not only a primordiality but a coherence, a 'groupness' that is imposed (from within and without) to strengthen one group *vis-à-vis* other groups, but not all groups are equally coherent. Because of the great number of ethnic groups in India (Fisher, 1980; Angelo, 1997) the Indo-American ethnicity in the USA consists of *a collection of ethnicities*. We acknowledge the diversity of our study population by employing the term 'subethnic' to indicate the groups defined by language, culture and the part of India from which they or their family have come. While Tamil, for example, constitutes an ethnicity in India it is clear that in the USA the host society does not generally recognize this ethnic identity or know of the place of origin that it indicates; this is our motivation in using the term subethnic in the US context.

Notwithstanding ethnic, cultural and linguistic variety among the subethnic groups, NRIs have certain characteristics, as a group, that stand out from other segments of American society. Because of the timing and conditions placed on their immigration (see below) many are comparatively comfortable with new technologies, particularly computers. This may be less true of Gujarati or Punjabi immigrants, who have created a niche in the American economy in the area of small-business management, particularly convenience stores, gas stations, restaurants and motels. In general, though, the legal and economic conditions on the immigration process have selected for those with scientific or technical expertise, particularly in computer-related fields, favoring the access of this group to new communication technologies. This helps explain why websites catering to NRIs are numerous, although only about a million persons born in India are currently living in the USA.

NRIs maintain websites for the purposes of cultural preservation and the maintenance of ethnic identity, and to support cosmopolitan, intercontinental lifestyles and consumption habits. Linked to these sites are a great number of sites in India: online versions of Indian newspapers, business sites, cultural sites and sites supporting the search for marriage partners. In India, these forms of content are easily available in other formats, so the demand for online versions is proportionally higher among overseas Indians for whom the internet is often the only means of access to news and culture from India. The vast, international complex of interlinked websites used by the 'Indian diaspora' and by residents of India is part of a more variegated space of international and multicultural communication that we call 'bridgespace'. The bridgespace incorporates the internet and other media such as such as music CDs and films, forming what Froehling (1999: 170) calls 'a number of overlapping communicative links in different media spaces'.

We have chosen 'bridgespace' over an alternative term, 'bridgeplace,' because 'place' implies a level of coherence that seems to be lacking in this collection of websites. The collection is not a 'center of care' for most of its users; it instead has the qualities typically attributed to space (Tuan, 1977). It is *a set of connections between here and there, in both a geographical and a cultural sense*, like a rail yard or an airport. Bridgespace can be reframed in the famous terminology of Appadurai (1996) as a mediascape, an ideoscape, a financescape and a technoscape all rolled up into one, and it serves the needs of a particular ethnoscape. In addition, it illustrates one of the fundamental aspects of globalizing culture identified by Appadurai, the quality of disjuncture, which is to say the mismatch between flows of culture goods, like music and films, and flows of political and economic power.

What a space 'does' to people or to society is impossible to say because that depends on how it is used. Likewise bridgespace does not act, but rather enables certain kinds of movements to occur; people, goods, capital and ideas are thereby channeled across the vast cultural and geographic divide between North America and South Asia. Before introducing the elements of the bridgespace and examining how they fit together, we must first introduce the ways geographers have understood information and communication technologies (ICT), then briefly explain the nature of the India-USA migration.

II Geographers' views of new communication technologies

Over the past decade, geographers have devoted a significant amount of attention to the diffusion and adoption of new communication technologies, under the rubrics of ICT, IT (information technology), 'cyberspace', 'telematics' and the 'information society'. As early as the 1960s, studies of time-space convergence had established the geographical importance of communication and transportation technologies (Janelle, 1969; 1973; Abler, 1975). While the transcendence of spatial constraints or the 'friction of distance' was the point of departure for early studies, most recent studies have taken this idea as a given and have placed friction of distance in a subsidiary role to questions of social contestation, perception, virtualization of space/place and embodiment (however, for a recent engagement with the issue of accessibility, see Janelle and Hodge, 2000). Voicing the concern that drives this shift in emphasis, Hanson (2000: 269) points out that: 'Traditional measures of access neglect the fact that people are embedded in networks of social relations through which information is exchanged, networks that shape norms and values.' Sui (2000: 109) also argues against focusing on accessibility: 'the real issue we need to tackle is, in my opinion, adaptability: to study how people or organizations actually creatively use accessible information to the best advantage and to the benefit of society and the environment.' Adaptation to a lifestyle with roots in multiple places is driving the creation of the virtual space we call bridgespace. To link this concern with established approaches to ICT, we review the four approaches in turn.

1 Power relations and contestation

Society must be understood in terms of power imbalances. New technologies play a clear role in accentuating social divides and favoring pre-existing authority structures.

Early in the debate on ICT, Gillespie and Robins (1989) declared that ' "distance-shrinking" characteristics of the new communication technologies, far from overcoming and rendering insignificant the geographical expressions of centralized economic and political power, in fact constitute new and enhanced forms of inequality and uneven development'.

The critical reading of ICT by geographers and some other social scientists holds that social structure provides the ever-present context for the deployment and appropriation of technologies. To understand the 'effects' of a new technology, one must understand the context(s) in which it diffuses and is adopted. Examples include studies of political oppression related to the deployment of a telephone system (Stein, 1999), the strategic rhetoric surrounding the privatization of telecommunications services (Larner, 1999) the urban bias in discourses on rural telematics (Ray and Talbot, 1999), and the appropriation of cyberspace by a peasant uprising (Froehling, 1999). Thus technologies are neither good nor bad in themselves, but rather 'The character of virtual geographies is dependent on what sort of virtual technosocialities one chooses to focus on' (Crang *et al.*, 1999: 5). Froehling shows how new communication media can be used by a marginalized group to fight oppression and exploitation, but the preponderance of such studies shows how old forms of social domination are perpetuated in new media.

This approach characterizes the exploration of telecommunications and the city by Graham and Marvin (1996). While admitting that 'there are certainly some examples of . . . liberating [ICT] applications, for example with "virtual communities" for marginalized and housebound groups', the authors generally defer to 'critical commentators' who 'stress that, on the whole, such technologies may in fact be a basis for exacerbating further the social and geographical polarization within urban places' (1996: 37). The idea that 'marginalized' might mean something different than poor is obscured, as is the fact that society cannot be understood from the point of view of the 'most disadvantaged,' since people are complexly positioned social actors. Many persons (like the majority of NRIs) are at once socially 'marginal' and 'central', depending on the situation in question and the type of power one looks for in the situation.

The 'cyberspace' issue of *Geographical Review* (April 1997) takes up the theme of social contestation, but it directs more attention toward the appropriation of ICT. In discussing self-promotion by small states (Brunn and Cottle, 1997), environmental activism (O'Lear, 1997), rave subculture (Taylor, 1997), a virtual diocese (Starrs, 1997: 208) and online Zapatista rebels (Froehling, 1997), the authors reveal the operation of what Warf and Grimes (1997) call 'counterhegemonic discourses.' Light (1999) and Froehling (1999) similarly highlight the politically indeterminate character of ICT. The critical approach to ICT studies has led to many insights, for example the recognition that websites (like other 'sites' of discourse) can be at once traditional and innovative, conservative and progressive. Still, it says little about the qualities of a medium that distinguish it from other media. This oversight can be partly addressed by focusing on issues of perception.

2   Perception and surveillance

Investigations of perception, particularly vision as a social practice, have revealed political, philosophical, aesthetic and moral issues (Graham, 1999; Hillis, 1996; 1999).

This line of investigation converges with studies of social contestation insofar as surveillance is a means to acquire power over certain persons through the dual operation of external coercion acting on the individual and an internalized discipline acting in the individual (see Foucault, 1979; 1980). Yet questions about perception do not stop with the ways technologies allow people to perceive the world and each other; they also encompass the ways people perceive technologies. In the case of the internet, people have deployed a range of models – frontier, outer space, architectural space – to try to understand the new social contexts created online (Adams, 1997). Perceptions of media, on the one hand, and perceptions *through* media, on the other, are paired concerns that intersect with the power-relations mentioned above: (1) surveillance conveys social power; (2) power imbalances lead to a 'need' for surveillance; (3) the metaphors popularly used to understand mediated perception reflect pre-existing power relations; (4) perceptions of media confirm certain groups' uses of media; and (5) perceptions of media legitimate certain users while de-legitimizing others. To raise such issues in power and perception in turn opens up the debate to counterhegemonic discourses, because the dominant perceptions of the world may be ignored, adapted and contested by those who lack direct control of political processes.

3   Embodiment

Analyses of embodiment in new technologies start from the premise that the solid and natural character of the body is, in fact, an illusion. The body is symbolically constructed as one incorporates socially constructed labels and assumptions relating to the body. These take on the weight of unquestionable fact once applied to self and others. Of great interest, then, is how technologies that extend or act on the body – everything from silverware to software – are given meanings by people and give meanings to people. Parr (2002) demonstrates that health information on the internet both challenges and legitimates 'official' understandings of the body. Holloway (2002) discusses virtual gardening, which allows one to 'get back to nature' by going online and commanding a worker on a distant garden plot to plant, weed, water, and so on, one's distant garden plot with the click of a mouse. Cutchin (2002) argues that telemedicine does not simply offer better access to health care, it may also accentuate the territoriality of dominant players in the medical care industry, consolidating the power of dominant players rather than improving service to patients. The embodiment approach complements the other approaches discussed previously. Cutchin and Parr both reveal the ties between perception (of the body), contestation (regarding health maintenance) and embodiment (health). Holloway reveals the ties between perception (of place) and embodiment (eating). Also evident is a concept of virtual place (the garden experienced online). This points to the final approach.

4   Virtual space and place

The fourth strand of geographical exploration of ICT assumes that places and spaces are no longer defined only in a physical sense; media contexts – particularly dynamic, multisensory contexts – can form a kind of virtual place or space. This approach offers ways to integrate the others. Starrs (1997: 198) argues that 'cyberspace is one realm where

geographers ought to bestir themselves to consider how information has become tantamount to space and is in the process of becoming an actual place'. Taylor (1997) explores the 'emerging geographies of virtual worlds', including entertainment devices, simulated battlefields and virtual shopping centers. The most extended exploration of the medium-as-place concept is by Adams (1992; 1995; 1997; 1998). In his view, to be a 'person' means to have a body which is 'rooted in a particular place at any given time, bounded in knowledge gathering by the range of unaided sensory perception and, in action, by the range of the unaided voice and grasp', but people cannot exist as people without also having 'any number of fluctuating, dendritic, *extensions* which actively engage with social and natural phenomena, at varying distances' (1995: 269). Only a person in solitary confinement is deprived of such extensions. These invisible extensions of sensation and agency are constituted through media of all sorts, from the spoken word to books to the internet (see also Chernaik, 1999). Personal identity itself is founded on occupying the world in an extensible way, which in turn allows one to build networks of mutual obligation, knowledge sharing and commitment across space. Places are not containers filled with people but are actually 'topologies' of relationships between people. The sum of all the one-way and two-way communication links between agents creates place. Physical places and virtual places (in the media) can be compared on the basis of the topologies of social relationships they support, despite radical differences in the means of bounding and shaping those topologies (Adams, 1998). The topologies in question involve networks of obligation, knowledge sharing and commitment. Any given medium – from book to internet – both constrains and enables its users, just as spaces constrain and enable agents. This concept of the geographical relevance of ICT is particularly flexible and powerful as it incorporates the others introduced above: perception can be seen as access to virtual spaces; embodiment is undergoing transformation due to increased means of virtualization; contestation can be interpreted as a territorial struggle taking place in both physical and virtual places. Thinking of media as places and thinking of places as media requires serious engagement because, as Bingham (1999: 245) notes, 'it will take much work to make the already too familiar strange again'.

We can capture insights from all four approaches by stating that geographers understand new communication media and the institutions associated with them as *contested terrains* in which various groups compete for a strategically advantageous position. Some geographers choose to focus on the process of contestation, some on the perceptions being contested, some on the place/virtual place of contestation and some on the body that struggles and is struggled over. Struggle alone cannot encompass the range of social relations, however, and the concepts of virtual place and space push us toward a broader understanding of the other three approaches.

5   Introduction to bridgespace

We will call the context for international identity formation, sensation, social relations and embodiment a 'bridgespace'. This bridgespace in general is a collection of interconnected virtual places that support people's movement between two regions or countries and the sustenance of cultural ties at a distance. The bridgespace we study is not the internet or part of the internet; it is a space built in and through the internet and

other media. It is only one of many bridgespaces. A subtle but important point is that bridgespaces do not create links between places; links are created by people – but people's actions require channels, and these channels may be static structures like roads, or dynamic systems like airline flight schedules or the internet (Gould, 1991). Thus bridgespace is an environment, not an actor. We consider it from a geographical perspective that expects environments to at least shape the limits of the possible or the probable, but that always returns to the question of human agency and the time-space routines and environments that constrain and enable that agency (Adams, 1998; 2000; Kwan, 2000). So a fundamental question is who is constructing the bridgespace and for what reasons and purposes.

III   The India-USA migration flow

In 1960, barely 12,000 persons living in the USA had been born in India. The 1965 Immigration and Nationality Act replaced the national-origin quota system with a system of preferences based on work skills and family ties to naturalized citizens, initiating a wave of immigration. By 2000, the number of Indian-born in the USA had increased to approximately a million persons, an 80-fold increase in 40 years (Segal, 1998: 332).

Immigration from India is somewhat distinctive in comparison to other groups currently entering the USA at high rates, such as Latin Americans, because temporary work visas and student visas are the main routes to permanent residency and citizenship for NRIs. Indian immigrants also demonstrate an unusual concentration in highly skilled professions such as engineering, medicine, scientific research and computer programming, a trend which was apparent as early as the 1980s (Dasgupta, 1989: 162; Saran, 1985: 29). Aside from family members of existing US citizens, the immigration stream consists of a large number of college students who find employment after graduation and subsequently change their visa status, and temporary workers in technical fields who also manage to become naturalized citizens (Department of Justice, 1999: 210). In the 15-year period 1981–96, India ranked sixth among national origins of immigrants to the USA overall, and fourth among Asian source countries (Department of Justice, 1999). By 1996, India had overtaken all other source countries except Mexico and the Philippines. Much of this immigrant stream ends up in high-tech growth poles such as San Francisco/Oakland/San José, Los Angeles, New York, Washington/Baltimore, Chicago, Houston and Dallas/Fort Worth (India Network Foundation, Inc., 1987–2002).

The skills and education of the immigrant population reflect the H-1B visa: a temporary work visa for persons with a sponsoring employer, available since 1990. The H-1B was created in response to claims of employers in the USA that certain workers were in short supply: specifically computer programmers, engineers and professors, as well as, oddly, fashion models. The H-1B visa has a limited term of three years, with a possible renewal for a second term before the holder must return to his or her country of origin, though many are able to convert to permanent resident status. The annual admission cap was originally set at 65,000 new visas per year, then raised to 115,000 per year for 1999 and 2000, and again to 195,000 per year for the period 2001–2003. The companies sponsoring the most H-1B visa holders are, not surprisingly, high-

tech giants such as Motorola, Oracle, Intel and Microsoft, each of which sponsored more than 200 H-1B visas per year in the late 1990s (US Immigration and Naturalization Service, 2000). A number of universities, including Harvard, Yale, University of Washington and University of Pennsylvania, also sponsored more than 60 per year, with a high of 113. Although H-1B visas are not designed to favor a particular nationality, citizens of India comprise about 43% of the H-1B visa migration flow, while China is a distant second place at 10%, and other countries contribute less than 4% each. India's massive population and the prevalence of English as a second language in this former British colony are two factors leading to this disproportion. The migration also reflects push and pull factors. Push factors in India include India's low per-capita GNP (far behind Japan, Taiwan, South Korea, Hong Kong and Singapore), intense labor-market competition, slow economic growth, unresponsive bureaucracy, problems with infrastructure and low public and private investment in research and development (Biers and Sidhva, 1997). Structural, ethnic and gender barriers to individual advancement are also important. Success is not unattainable in India if one is male, talented, well-educated, fortunate in one's family background and living in one of the main conurbations, but temporary or permanent relocation to the USA provides faster advancement, particularly if one is female, from a lower caste, or otherwise socially disadvantaged (see Westwood and Phizacklea, 2000). Pull factors in the USA include salary and benefits, opportunities for career advancement, an existing support community and a relatively accessible linguistic environment. The high skill level and professional aspirations of this immigration stream helps explain its high receptivity to the adoption of computer technologies not just at work but also for personal and community use.

IV   The intercultural bridgespace diagram

Figure 1 shows the internet portion of the bridgespace used and constructed by Indian citizens and NRIs. The most obvious elements are the divide between North America and South Asia running across the middle and the three types of nodal sites that form the largest ovals. Virtual occupants of the bridgespace are likely to enter the space via one of these nodes on a regular basis, or at least until somewhat familiar with the more specialized and peripheral links.

1) Indian Online Nodes (ION): multipurpose sites with high numbers of links designed for a non-specific Indian audience throughout India and overseas.
2) Ethnic Group Online Nodes (EGON): multipurpose sites dedicated to a particular ethnic group in India, usually written in the language of the group mixed with a little English, and accessible from overseas by members of this group.
3) Local/Regional Sub-Ethnic Group Organizations (LRSEGO): websites constructed by local or regional organizations in the USA, for which the primary purpose is to support and encourage the maintenance of subethnic identity as opposed to assimilation in US culture or dissolution in a generalized Indo-American ethnicity.

In Figure 1, ION and EGON are shown superimposed because they contain the same basic features and provide the same basic type of centrality within the bridgespace. The
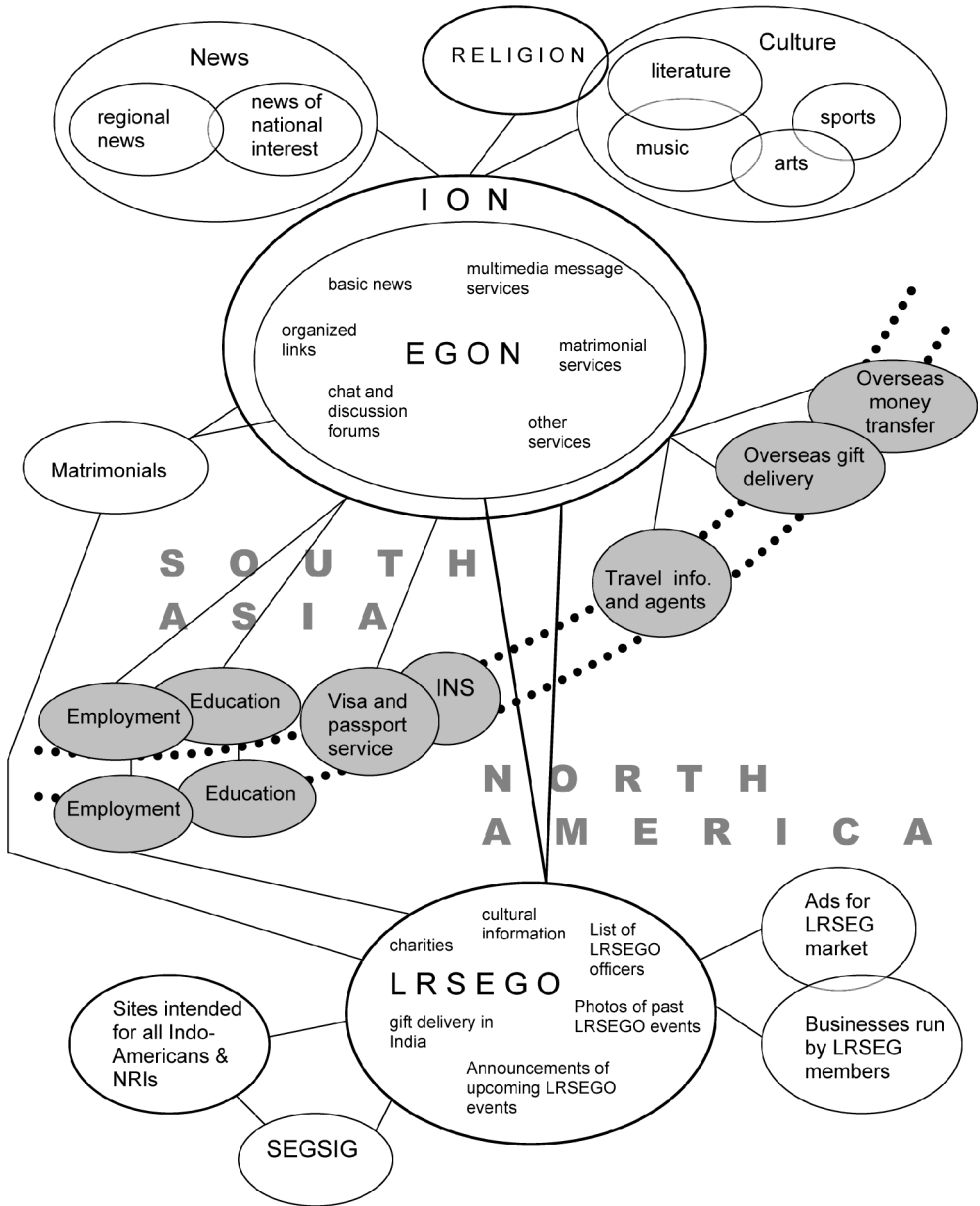
Figure 1   Main types of websites used by NRIs to maintain social and experiential elements of their diasporic identities: Indian Online Nodes (ION) are designed to help users navigate quickly to sites of interest to Indians in India and overseas; Ethnic Group Online Nodes (EGON) are multipurpose sites dedicated to a particular subethnic group; Local/ Regional Sub-Ethnic Group Organizations (LRSEGO) are websites constructed by local or regional organizations in the USA, defined by location in the USA as well as subethnic identity.

smaller ovals are the kinds of sites most often linked to the nodal sites. Only the most common types are shown here. Sub-Ethnic Group Special Interest Group sites (SEGSIGs) attempt to fulfill the needs of a particular subethnic identity but are limited in subject matter to a particular area of interest, such as literature, religion, business or music.

A number of sites directly address the experience of moving through space or between cultures. Such sites are dedicated to visa and passport services, travel agents, overseas money transfer (remittances and investment) and overseas gift delivery (for example www.ttkbharatplanet.com, www.flowers2india.com, and the wonderfully self-explanatory www.cash2india.com). These sites are shown in gray, and straddle the South Asia–North America divide. These sites often reflect specific characteristics of Indian cultures: strong family ties and a tradition of filial support motivate gift-giving, frequent return visits and the sending of remittances to parents in India. Sites dedicated to employment and to education are also on or near the intercontinental gap since they cater to prospective immigrants. An example is www.ttkbharatplanet.com (Bharat means India in Hindi), which markets varied services specifically to NRIs: travel arrangements, mailing, e-mail services and legal services.

The diagram conveys a sense of the bridgespace but we must raise a number of caveats:

1) many more links exist than can be shown;
2) more categories of site exist than can be shown;
3) much more redundancy across the divide exists than is shown (Indian news, culture and matrimonial bubbles are sometimes managed from the USA);
4) to some degree, all bubbles could be positioned directly on the divide (like the shaded ones) rather than on either side.

What Figure 1 demonstrates is that the websites collectively and individually provide a bridging function, but a person need not move in a predetermined linear fashion from one end to the other. The bridge metaphor applies in the more general sense; a bridge supports movement in both directions, and the bridgespace is likewise a conduit for diffusion from the USA to India even as it allows NRIs to remain in touch with Indian culture and Indian subethnic culture. If a bridge suggests something static we must, however, recall that websites are ephemeral creations. It would make no sense to attempt to construct an exhaustive list of the sites that make up the bridgespace, particularly since our goal is to demonstrate the character of the space. We have provided a few examples below (and more in Table 1) in the hope that readers who are interested in exploring the bridgespace can follow our leads.

V   Nodal sites in India

By far the most well-connected sites of the bridgespace are nodal sites based in India and intended as either multipurpose sites or news sites with access to many links. These are indicated on Figure 1 as EGON and ION. In the terminology of Adams (1998) these are radial communication topologies, with one-way and two-way flows, and high connectivity. Some examples are www.khoj.com, www.indya.com and

Table 1 Sample websites in the bridgespace

Type of site	Sample URLs	Intended audience
Indian Online Node (ION)	www.khoj.com	Indians, NRIs, Indo-Americans, etc.
	www.indya.com	Indians, NRIs, Indo-Americans, etc. (younger)
	www.sify.com	Indians, NRIs, Indo-Americans, etc.
	www.indiatimes.com	Indians, NRIs, Indo-Americans, etc.
	www.hindulinks.org	Indians, NRIs, Indo-Americans, etc.
Ethnic Group Online Node (EGON)	www.orissaindia.com	Oriya in Orissa and abroad
	www.deepika.com	Malayalee in Kerala and abroad
	www.aaraamthinai.com	Tamils in Tamil Nadu and abroad
	www.banglalive.com	Bengalis in Bengal and abroad
	www.sikhnet.com	Sikhs in India and abroad
Local/Regional Sub-Ethnic Group Organization (LRSEGO)	www.prabasi.org	Bengali in San Francisco Bay area
	www.baga.net	Bengali in the Atlanta area
	www.metroplextamilsangam.org	Tamils in the Dallas-Fort Worth area
	www.gcabayarea.com	Gujarati in the San Francisco Bay area
Sub-Ethnic Group Special Interest Group (SEGSIG)	www.tie.org	Pakistani entrepreneurs in California
	www.bichitra.org	Bengalis in the Detroit area
	www.probashi.org	Bengali Christians in NY, CT, and NJ
	www.parabaas.com	Bengali literati in India, Bangladesh, and abroad
News	www.anandabazar.com	Bengalis in S Asia and abroad
	timesofindia.indiatimes.com	Indians, NRIs and Indo-Americans
	samachar.com	Indians, NRIs and Indo-Americans
	www.deccanherald.com	Kannada in Bangalore, in Karnataka and abroad
Travel and immigration	www.immnet.org	emigrating Indians, particularly USA-bound
Shopping	www.namaste.com	Indo-American consumers
	www.indiaplaza.com	NRI consumers
	www.flora2000.com	anyone buying flowers for international delivery

Category	Website	Description
Business	www.aahoa.com	Indo-American hotel and motel owners
	www.ibpw.org	Indo-American business women in San Francisco area
	www.netip.org	Indo-American professionals in N America
	www.netsap.org	South-Asian professionals in Washington DC area
	www.sipa.org	Indo-American professionals in Silicon Valley
Religion	www.eprarthana.com	Hindus abroad
	www.hindunet.org	Hindus in India and abroad
	www.hindu.org	Hindus in India and abroad
	www.sikhnet.com	Sikhs in India and abroad
Women	www.bawarchi.com	women who cook Indian-style cuisine
	www.hinduwomen.org	women in India and female NRIs
Men	www.khel.com	men from India interested in Indian sports
Popular culture	www.freemusic2u.com	Indians, NRIs and Indo-Americans
	www.planetbollywood.com	Indians, NRIs and Indo-Americans
	www.bollywoodworld.com	Indians, NRIs and Indo-Americans
	www.b4utv.com	Indians, NRIs and Indo-Americans
	www.indianmasala.com	Indians, NRIs and Indo-Americans
	www.smashits.com	Indians, NRIs and Indo-Americans
Higher education	www.indnet.org	NRIs and non-Indian researchers studying India
	education.sify.com/final/colleges_abroad.asp	Indians planning to attend college outside India
Matrimonial	www.suitablematch.com	westernized Indians, Indo-Americans and NRIs
	www.matrimonialonline.net	traditional Indians, Indo-Americans, and NRIs
	www.sindhimatrimony.com	Indians, Indo-Americans, and NRIs
	www.tamilmatrimony.com	Tamils in Tamil Nadu and abroad
Other	www.sulekha.com	NRIs and Indo-Americans
	www.ttkbharatplanet.com	NRIs and Indo-Americans
	www.cash2india.com	NRIs and Indo-Americans
	www.pittsburghindian.com	NRIs and Indo-Americans in Pittsburgh metro area
	www.ipnatlanta.net	NRIs and Indo-Americans in Atlanta metro area

www.hindustan.net. The purpose of such sites is to provide a set of organized access points to more specialized sites for NRIs and residents of India relating to the arts, business, computers, culture, education, entertainment, family, government, health, news, reference, regional interests, science and sports. Such nodal sites also directly provide certain services, most commonly matrimonial services (see explanation below), daily astrological readings, online shopping and chat rooms. Rarer services include downloadable software and games, real-estate information, travel information, online auctions and personal-ad listings for dating (though dating remains a novelty in India, and is not universally embraced among NRIs).

The ION sites serve as the most important type of 'crossroad' in bridgespace, and, like the traditional gathering space (*forum*, *plaza*, *piazza*, etc.) at the town crossroads, they also support random encounters, debate and discussion. An exchange following the distribution of the movie *American Pie* on www.hindustan.net illustrates this process in action. One participant writes:

> Why do American youngsters drink till 5 in the morning and talk their silly heads off ??? And they call it partying. Half the people there don't want to drink. They just drink to keep up appearances. And most talk is about how they smoked dope and speeded on the highway. Sometimes I wish I could slap some of them . . . And those tittering females. Silly idiots and they call themselves civilized. Ha.

Another responds:

> I think the American media portrays the youngsters in a negative manner and it is not like that at all. Sure they all drink when they are still in school but they also study, by the time they are 18 they are out there in the real world supporting themselves, unlike in India where we still depend on our folks for every damn thing. America teaches you how to be independent and does not look down on you if you sweep the roads or pick up garbage, at least you have a job and it is 'your' money. Hats off to America.[1]

This exchange illustrates how two-way, radial flows of communication can construct a space for ideological contestation not just about the USA and Americans but about cultural values such as autonomy, alcohol use and interdependence. Behind the contestation is the process of building community by trying to reach a common perspective on contentious issues, which in turn suggests the social engagement made possible by a gathering place. The 'place' in this case is a vantage point outside American culture (if not always outside American territory) from which an English-speaking group can critique that culture.

The primary competition to the ION sites comes from sites designed mainly for the population of a single Indian state, marked EGON (Figure 1). EGONs are also nodes in a radial topology. Usually these are in a non-English language such as Hindi, Bengali, Marathi, Gujarati, Punjabi, Rajasthani, Kannada, Malayalam, Telugu or Tamil interspersed with a bit of English. A fairly accessible example is www.orissaindia.com, which caters to people from Orissa (a state in Eastern India). Like indya.com, this site offers a wide range of links. Information on this site includes the history of Orissa, maps of that state and even a railroad timetable. Services on the site include matrimonial listings, horoscope service, e-mail to phone messaging (a message can be sent by e-mail for subsequent 'delivery' by phone), e-mail to mail messaging (like the above but delivered by postal mail), electronic greeting cards, personal page creation and 'Kid's Corner' (illustrated rather startlingly with characters from the American TV program 'South Park'). Again we see various two-way applications as well as many one-way. The EGON sites have an advantage over the ION sites in their ability to construct a

sense of place and community. The virtual place metaphor applies here, while contestation, surveillance and embodiment issues take the back stage. The technology's main purpose is to provide access to community: links are provided on www.orissaindia.com to NGOs working in Orissa on disaster relief, consumer protection and sustainable development. EGON sites also promote online shopping, enabling NRIs to purchase cultural products from their ethnic region in India.

Since the EGON sites deal with topics of local concern (though readers may be emigrants, far from the locale in question) it is natural that they include websites set up by newspapers published regionally in one of India's 18 main languages. An example is www.anandabazar.com, an online version of Eastern India's largest daily newspaper, that offers not only detailed news of Calcutta and Eastern India in Bengali, but also specific services such as overseas funds transfer and online shopping for books, magazines and art. Links to dozens of local news sites and other types of news from India can be found on samachar.com. The topology of a news site is again radial, and primarily one-way since people are seeking information rather than conversing.

VI   Nodal sites in the USA

Nodal sites on this side of the South Asia/North America divide are generally constructed and maintained by Local or Regional Sub-Ethnic Groups. The organizations that provide a support network for LRSEGs are shown on the diagram as LRSEGO. An example of such as site would be www.prabasi.org (the Bengali word *prabasi* means one who lives in a foreign land). This site is the online presence of a large, successful and well-educated community of Bengalis in the San Francisco Bay area. A major objective of the organization (and the site) is maintenance of Bengali identity, particularly within the second generation, to prevent total assimilation into American culture.

LRSEGO sites range from sophisticated, like www.prabasi.org, to simple, like www.gcabayarea.com (Gujaratis in the San Francisco Bay Area). Most contain at least a mission statement, a schedule of upcoming social events (gatherings in physical place), photos of past events, a list of the board of directors and instructions on how to become a member of the organization. Most of these sites share with the SEGSIG sites an attention to subethnic identity, but not all do. Also evident is the construction of a hybridized culture: the website of the Gujarati Cultural Association of the Bay Area, for example, announces events ranging from Navratri and Holi, traditional celebrations, to a New Year's Eve celebration and a Youth Dance which reflect 'the traditions of adopted land' (www.gcabayarea.com).

A few nodal sites in the USA ignore subethnic divisions and try to appeal to all Indian ethnic groups rather than a particular subethnic group. Examples are www. pittsburghindian.com, directed to NRIs in the Pittsburgh area, and www.ipnatlanta.net directed to NRIs in the Atlanta area. We might also include some business-orientated sites, like Indian Business and Professional Women (www.ibpw.org), and Network of Indian Professionals (www.netip.org). Some, like the Asian American Hotel Owners Association (www.aahoa.com) are not officially dedicated to one subethnic group but are heavily dominated by a particular group. While the community-building function of virtual place dominates these sites, contestation is evident in, for example, the site of

the Indian American Center for Political Awareness (www.iacfpa.org), a group dedicated to raising the political awareness of NRIs and encouraging them to act as a coordinated interest group in the American political scene.

The community-support function is especially evident at www.sulekha.com, a remarkable site that began as an online literary magazine and now plays host to a wide range of discussions on topics from family to politics. It features a collection of over 1000 photographs ranging from nature to cityscapes to daily life in the USA and India, showcases 70 artists, and archives reader-submitted news items. The site bills itself compellingly as 'The Indian Experience in a Connected World', but the majority of NRIs would dispute the existence of 'the Indian experience' and look for a site dedicated not only to their subethnic group but also to a segment of that group with special interests, in other words, a SEGSIG.

1   Not bowling alone

In *Bowling alone*, Putnam (2000) raises concern about the decline of voluntary associations in the USA; the title captures the image of a lifestyle where people no longer bowl in leagues, join clubs for the purpose of socializing or contribute to charities as part of organized groups. Americans still bowl, party and contribute to charities, but generally without the traditional associational frameworks. Exceptions to this pattern are ethnic groups with high levels of foreign-born, which are still likely to construct their activities according to the 'bowling league' pattern.

NRIs have created a wide variety of voluntary associations, which in turn have a presence in bridgespace. These associations act in aggregate (1) to promote the perpetuation of cultures associated with the various immigration streams, (2) to encourage the development of NRI and subethnic identities, (3) to facilitate economic advancement, (4) to organize charitable giving to recipients in the USA and India, (5) to arrange trips, sporting events and outings, and (6) to facilitate adjustment to and assimilation into American society. Objectives 1 and 2 need not be opposed to objective 6; the crucial question is whether a person is able to discover a context in which he or she can preserve an ethnic and/or subethnic identity and overcome feelings of social isolation and estrangement while also engaging as much as desired with American society. Voluntary associations fulfill this role, acting as contexts for making connections between different cultures.

While the web presence may be only a small part of the activities of any particular Indo-American voluntary association, the web is the space in which voluntary associations are linked to each other and to related Indian and NRI associations as part of the international system we have already introduced. The websites constructed by voluntary associations, whether subethnic or special-interest, act primarily as access points (or nodes) to the bridgespace at the North American side of the bridge, with links in both 'directions': toward broader South Asian cultures and society and toward North American culture and society. As nodal topologies (Adams, 1998), these sites are rather limited in connectivity, serving special-interest groups within ethnic and subethnic minorities.

An example of a SEGSIG site would be www.probashi.org (a different spelling of the word *prabasi*), the online presence of an organization for Bengali Christians living in the

tri-state area of New York, New Jersey and Connecticut. Since most Bengali-Americans are Hindu (if from West Bengal) or Muslim (if from Bangladesh), Bengali Christians are a minority within a minority. *Probashi* aspires to look after the 'welfare of the community . . . nurture family values . . . and encourage . . . good social, cultural, intellectual and spiritual growth' (www.probashi.org). Another example of a SEGSIG is www.parabaas.com, a well-organized and well-established literary journal on the internet catering to the Bengali audience. It connects Bengalis living abroad (*parabaas* means life in a foreign land and is a cognate of *prabasi/probashi*) with Bengalis in India and in Bangladesh, in the dual roles of writer and reader.

The SEGSIG sites provide compelling examples of cultural creolization (Chernaik, 1999: 90) and hybridity, aspects of communal relations, much more than the science-fiction nightmare of 'hive mind' (Hillis, 1999) which suggests complete subservience and omnipresent surveillance. People actively appropriate bits of available cultures to construct a hybrid space of personal identity, using these sites and other elements of their lives. Bichitra, a Bengali-American charity, explains on their website that the group 'conducts regular fund raising activities . . . to assist the needy in India, Bangladesh and Detroit' (www.bichitra.org). Bridging consists not merely in creating communication links, facilitating travel or trying to cushion culture shock. It also entails a two-way street – interaction with the host culture.

VII   Specialized sites as places of cultural preservation

Let us recall again that one function of all the nodal sites listed above is to provide links to various more specialized sites. It is here that we find a form of congregation indicated by Warf and Grimes (1997: 263): 'Marginalized people who are unable to express their needs and identities in the so-called real world, . . . can share interests and experiences in interactive discussion forums (chat rooms), forming classic "communities without propinquities," spaces of shared interest without physical proximity.' We turn now to those sites, which relate to the whole bridgespace as cozy retreats along a noisy and confusing concourse.

Some of the most important online places provide NRIs with access to culturally important goods, through a wide range of shopping opportunities. The commodities include traditional Indian clothing and jewelry, food items, music recordings, videos, DVDs and books, all from the cultures of India. Leading examples are www.namaste.com and www.indiaplaza.com, which each offer tens of thousands of items for NRI shoppers. Since material culture in general supports the perpetuation of traditional constructions of community, personal identity and embodiment, online shopping may assist in the slowing or negotiation of the assimilation process. This suggests resistance to homogenization and may be equated with struggle, but it is no less the maintenance of communal bonds that would eventually be torn by the paucity of interaction in the absence of technology. Here virtual place stands in for physical place.

Not all cultural products from India must be purchased. Some of the most popular specialized sites (such as www.hindu.org or www.hindunet.org) help NRIs preserve Hindu spirituality and practices. On www.eprarthana.com one can conduct virtual *pooja* (prayer or ritual offering), to any of the principal Hindu deities. This involves an

interactive screen where one causes a 'coconut' to be cracked, a 'temple bell' to be rung, 'flower petals' to be sprinkled, and so on, all with the click of a mouse. Deity and religious community apparently translate easily to cyberspace (see also Starrs, 1997), perhaps because they are intangible in any case, but in the process a kind of sacred place is created where one least expects it – in or around the computer.

Many of the special-interest sites are dedicated to Indian popular culture. A profusion of sites have developed to provide downloadable Indian music (e.g., www.freemusic2u.com and www.musicindiaonline.com) in different Indian languages and styles. Many sites are dedicated to films, particularly products of the massive Bombay film industry dubbed 'Bollywood'. These include www.planetbollywood.com and www.b4utv.com. Here a visitor can find the latest film reviews, film clips for viewing, downloadable 'wallpaper' (computer-screen decoration) of film stars, film gossip and online sales of Indian films in video and DVD formats. The demand from NRIs is not insignificant, and is apparently great enough to affect the film industry in India (Shah, 2002). Here we can see themes of contestation and embodiment intersecting: Bollywood idols reflect not only patriarchy but subethnic and colonial power relations, as the average complexion of Bollywood stars is lighter than the average complexion in India. Yet resistance to the objectification of women is evident at www.hinduwomen.org, which is meant as a resource as well as an inspiration for women in India. It provides biographies of famous Indian women in science, politics, the arts and other endeavors. We must, however, recall Froehling's point regarding the internet: 'It is a conduit, not a conscience' (1997: 304); a range of social constructions of gender coexist in bridgespace, projecting the woman-as-object[2] and woman-as-agent and everything in between.

The sites mentioned thus far cover the range from traditional to popular culture. Somewhere near the midpoint of that continuum is cooking ('located' at www.bawarchi.com). In this function, the role of bridgespace is clearly both conservative and innovative. Innovation takes the form of cultural 'creolization'; for example, 'Mexican' and 'Italian' recipes appear on bawarchi.com with odd ingredients like ginger, paneer and nutrella, while more traditional Indian recipes appear alongside. The tension between tradition and innovation, between 'cosmos' and 'hearth' (Tuan, 1996), is evident in this site. Like a physical place, it supports active engagement with others through contribution, borrowing and consumption. People are expected to make themselves at home here. We turn to an analysis of online matrimonial ads in order to further explore the themes of contestation, surveillance and embodiment, and how they can be woven together in one type of virtual place and space.

VIII   Matchmaking in bridgespace

Arranging marriage is evidently one of the most important uses of the internet by the NRI community at this time. A single matrimonial site we studied currently has over 88,000 members, so a full count of participants in the online Indian matrimonial market would certainly number in the hundreds of thousands. The matrimonial sites are often used by families located in India looking for eligible men and women in the USA, Canada, Britain and other countries as well as India, and the betrothals arising from this part of bridgespace form a dense web of transoceanic family ties. Their ability to

integrate domestic and international marriage markets indicates an important cultural role: they accelerate intercultural contact and diffusion into India as marriages create a proliferation of extended families that are split between two or more continents, but they may also slow assimilation in the USA and other immigrant destinations by inhibiting marriages across ethnic or subethnic lines.

Defined simply, matrimonial sites are designed to support the selection of a suitable match. Matrimonial sites range from the conservative, family-directed market (www.sindhimatrimony.com, www.tamilmatrimony.com and a host of other ethnically presorted sites) to the culturally unorthodox self-directed marriage market (www.suitablematch.com) which closely resembles western matchmaking and dating sites. Matrimonial sites sometimes include a small, low-resolution photograph, but they always include *high-definition information* relating to caste, religion, ethnicity, education and employment, which are considered by families to be of greater relevance to marital happiness than physical appearance. While Americans use internet sites for dating purposes, that is, to identify persons with similar interests who are mutually attracted, this use of the internet is rare in Indian and NRI society because of traditional Indian attitudes toward the body (Dasgupta, 1989: 74; Angelo, 1997: 103). Dating violates the traditional Indian understanding of sexuality as something to be encountered only in marriage. The internet has been appropriated within this social construction of the body, and has in fact made it possible to channel sexuality toward traditional divisions of caste and ethnicity. A 'suitable' match is one with the right geographical-genetic origins, and communication technology appears to permit this construction of suitability despite the challenges created by transportation technology. Time-space compression subordinated to the traditional construction of the body protects genetic purity and economic competition. The same applies to caste-based discrimination. Via the internet, a family can find their daughter a boy from a good school, with professional promise, a favorable position in the caste system and the 'right' ethnolinguistic background.

The phenomenon of the online matrimonial market raises interesting issues related to social contestation and perception. In Foucaultian terms, the internet facilitates an 'analytical space' (1979: 143). It bypasses the reign of body-knowledge based on sight and touch, which leads (or perhaps misleads) young Americans into forming passionate premarital attachments and 'love marriages' (as they are called in India). A traditional Indian construction of the unmarried individual as a not-yet-fully competent agent, perceiver and body is translated into a digital realm. Fully competent family members, particularly parents but also older siblings, make use of disembodied data such as astrological signs of the young persons, caste and college degrees to create an ideal match without the distraction of physical appearance or sexual (dis)interest on the part of the participants. Caste remains a surprisingly important factor in determining acceptability, and many sites leave room to specify subcaste, as well. The scroll-bar where one indicates 'caste' when registering on www.matrimonialonline.net lists an astonishing 520 options.

Although physical appearance is vastly less important in bridgespace matrimonials than in the US marriage market, ICT-mediated perception emphasizes at least one physical feature: complexion. Matrimonial ads invariably include a fill-in space describing complexion; most are listed as 'wheatish', which no doubt is stretched to encompass a range of skin tones. A dark complexion may require a special explanation:

'NEGATIVE POINTS: My daughter is not of fair complexion. Of course she is not very dark, but with no amount of extrapolation she can be called as fair' (matrimonial ad on www.bharatmatrimony.com). The regret in this admission is a form of complicity with discrimination by complexion. Similarly, narrowly specifying one 'acceptable' caste for the prospective partner shows complicity with the exclusionary caste system. The decision some applicants make to indicate 'no preference' in the caste space is, conversely, a type of social resistance. Caste bias comes under another type of challenge, as well. The educational and professional qualifications of the prospective bride or groom, as well as the prospective in-laws, form a competing hierarchy.

> Doctor Parent seeks groom – with good family status, less than 29 yrs, US employed, – BE with M.B.A. OR Ph.D. (-OR-) CA & MBA (from reputed institutns.) – OR Doctor with MD or MS – for their first daughter . . . B.Com, A.C.A. (National Ranker in C.A. – Foundation, Inter and the Finals.) – Did her C.A. articleship in a (top five) MN Firm. – Writing final yr M.Com. (Corres) in May 2002. Now employed in the same company (Rs.3L/pa) Joining MBA – Carnegie Mellon – Pittsburgh – in Aug 2002 – Basic Horoscope matching required. (matrimonial ad on www.tamilmatrimony.com)

This Brahmin family has taken the conservative path of finding a match for their daughter, rather than letting her control the process, and the list of suitors will be limited by subethnicity (Tamil), caste, astrological sign and American college credentials, though the latter might be expected to sow doubt on the relevance of the former. Instead, American value structures are 'domesticated' to support traditional constructions of the individual. Users of new technologies do not necessarily become cyborgs (placeless beings whose bodies are blended with technology (Chernaik, 1999; Imken, 1999)) but instead remain tied to place-based and racially embodied constructions of self-identity.

To cite Foucault's description of the prisoner in the panopticon: 'He is seen, but he does not see; he is the object of information, never a subject in communication' (1979: 200). Indian brides and (to a lesser degree) grooms fit this description rather well. The internet functions as a 'machine for dissociating the seeing/being seen dyad' (Foucault, 1979: 202), as a 'panopticon' with a matchmaking purpose. The internet does more, however, than substitute for word-of-mouth or the written matrimonial ads (which have been popular in India long before the 1990s); it also expands the geographical range of the matrimonial project and allows traditional (place-based) constructions of identity and sexuality to endure in the face of what would otherwise be a fatal condition of spatial dispersion. Place, in the form of subethnicity, remains an element of identity in absentia. If geographical dispersion and transplantation into an alien culture threatens to shatter the traditional place-based marital panopticon, the internet offers a technological fix. Virtual place now buttresses physical place and the panopticon is reconstructed rather than deconstructed (see also Hillis, 1999; Graham, 1999).

The construction of the self as a subethnicity, as a position in the caste system, and as a set of professional and academic credentials does not go uncontested in India, much less in bridgespace. The dating section on www.indya.com crows: 'Looking for a doe-eyed beauty? Want a guy with Bruce-Lee biceps and Bryan Adams' voice? Just fill in this search form, hit enter and find out if the right one's on the next page . . . waiting just for you.' Here the Indian body is measured against a new, 'western' hierarchy of desirability, and subjected to a different mode of perception. The individual is invited to take pleasure in the desire for another's body and re-interpret courtship as play. The social sanctions on re-inscribing the body in this way are, predictably, lower for men

than for women. A total of 467 men from Maharashtra had registered at the indya.com dating site as of 1 June 2002, but only 11 women. Other Indian states revealed similar gender imbalance. Clearly the redefinition of embodiment means little unless it applies to both sexes.

Matrimonial ads show again that, like other places, physical and virtual, bridge-space supports a particular way of knowing and a particular social order. Like other technologies, it has no determinate character but takes on a character as it is appropriated. It can impose a traditional matrimonial panopticon or a novel western panopticon.

IX   Discussion of implications

New technologies are often portrayed as intrinsically placeless and their diffusion is supposed to be a homogenizing force. What is neglected in these accounts is the particularity of the cultural adoption of technologies – the way they become entrained in particular forms of embodiment, community, power relations and perception. More elusive still is the recognition that not only are technologies appropriated differently in different places, because of cultural differences, but that people in essence *make different kinds of spaces in technologies*. Like physical spaces, these virtual spaces become contexts for all the familiar social processes, including social contestation, embodiment and the perception of self and others. By exploring virtual places and spaces, we can develop a deeper understanding of social processes and how contestation, perception and embodiment are transformed and reproduced in face of the globalization of ideas, goods, capital and people. We can also track the geographical agent through his/her moves between physical and virtual space, to better understand the nature of self and identity.

Not all groups are as likely to build a virtual space to support their international movements and activities. We have argued that the NRI population, because of its selective admission to the USA based on skill level, is unusually quick to adopt new technologies. Data indicate that black and Latino populations are underrepresented online (Warf and Grimes, 1997). NRIs demonstrate that an ethnic group can in fact develop a 'space' by using media in its own ways to pursue communally defined ends, and it suggests that this 'space' is culturally specific in form and content, no less than a physically defined space. Simply because 'American internet users are over-whelmingly white and middle class' (Warf and Grimes, 1997: 262) does not mean that this user population has a 'first effective settlement' that determines internet 'settlement patterns' of others. Still open is the question of how other ethnic groups may have constructed (or will construct) online spaces and places and precisely how these might differ from the one we have considered. As Starrs (1997: 214) observes, 'there is plenty of humanity to work with the Web, and cyberspace may yet come around'.

Bridgespace is a space of connection supporting various types of flows and providing access to virtual places where specialized interests and identities can be preserved. It is a terrain of social contestation as demonstrated by the persistence of caste and other marks of status in the matrimonial sites, and no less by the refusal of some users to specify caste. It is a structured arrangement of 'gazes', as demonstrated by the classification schemes that are imposed in matrimonial sites, though in this gaze the visual is

downplayed and knowledge of the other is disciplined along nonvisual lines. Bollywood fans demonstrate a more visual type of 'gaze'. Bridgespace is also as a means of embodiment and disembodiment, where the process of biological reproduction is framed (in marriage) and subordinated to social value scales and imperatives; after marriage the body can be fed and clothed as an Indian body. These forms of agency require an organizing structure to support perception and action. In short, the idea of a virtual space (which we choose to call bridgespace) is essential to coordinating other ideas about ICT. Unlike other cyberspace models, like the battlefield, museum and shopping mall (Taylor, 1997) or the western frontier and outer space (Adams, 1997), *the bridge implies community*. The presence of community in cyberspace (e.g., Smith and Kollock, 1999) deserves more attention from geographers.

The virtual-place approach opens up intriguing questions, such as how the combination of physical and virtual gathering will be appropriated by the diverse participants in multiethnic societies in the long run. Rather than bringing everyone together in McLuhan's optimistic vision of the 'global village' (McLuhan and Fiore, 1967: 67) communication technologies can be used to maintain cultural fragmentation. Opposing trends of cultural homogenization and diversification are both supported by the new technology. Place becomes at once less constraining of agency (due to time-space compression) and symbolically more potent (as a source of enduring subethnic identity).

Physical place remains important in another way. Bingham argues elliptically: 'The difference that computer-mediated communication makes is always different' (1999: 258). Each context of technological appropriation is different; the same technology has different effects in different places and situations. If there is a bridgespace for each different ethnic community in the USA these certainly differ in general character and details. Probably some hardly involve the internet at all. A group that is dense 'on the ground' (like Hispanics in the USA) may have little need for virtual places and spaces. A group that is diffuse, like NRIs, probably has greater need to substitute virtual place for physical place to overcome physical separation.

The possibilities for further research into the place-like and space-like qualities of this virtual space are compelling. The differences between subethnic groups in their use of the internet deserve study, as do the daily routines of individuals who interweave place-based and distanciated communications (see Adams, 2000; Kwan, 2000). Attention also should be given to the way many media come together and develop not only *intertextual* themes but also a particular sense of place. For a generation, geographers have adopted a model of society-environment interactions in which changes in society lead to alterations of environments, and these, in turn, produce alterations of society, in a dialectical cycle. Linking this cycle to a second cycle – one built of virtual places and virtual presence – would help to clarify both geographical and social processes. Our study, then, contributes to the literature on ICT by demonstrating a framework for integrating the analytical frameworks employed thus far in studies of ICT, and it points toward new ways of linking ICT to the society-space dialectic.

Notes

1. First comment 12 January 2000 from 'Partying as it should be done'; response 26 April 2000 from 'Sashsa'.
2. Predictably, there are pornography sites.

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