FIRST LOOKS: CATAC'98

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"Nothing human is alien to me." (Terence, 180-155 BCE)

Western Humanists from Montaigne through Marx have used Terence's phrase to affirm their belief in a universally shared humanity, one grounded in a *reason* held in common - a belief as old as the Stoic philosophers of the Greco-Roman world.[1] Over against ethnocentrism (the belief that one's own language/culture/ worldview are the only 'right' ones, and those who adhere to differing languages/cultures/worldviews are simply wrong, inferior), the Stoic philosophers inaugurated an optimistic conception of a shared humanity. This shared humanity, they believed, would lead to the *cosmo-politan*; that is, the citizen of the world, not simply the citizen of a given country and culture.

This ancient Stoic conception finds powerful expression in the contemporary vision of 'the electronic global village,' a *cosmopolis* which is literally wired together by new computer-mediated communications technologies manifested by the Internet and the World Wide Web. The 'digitarati' (such as Howard Rheingold and Nicolas Negroponte) and their commercial variants (Bill Gates and AT&T) present us with rosy visions of this digital future in which everyone everywhere will be able to 'talk' to everyone everywhere. In the electronic global village, instantaneous and world-wide *communication*, mediated through computers and computer networks, will usher in a revolutionary new age of peace, prosperity, and democracy. Buddhist monks in Nepal will communicate through their laptop computers with the Pope in Rome (so IBM); Tibetan rug-weavers will communicate through videophones with their French and American customers (so AT&T).

Paradoxically, however, the anti-ethnocentric cosmopolitanism underlying this vision of the global village may itself emerge as ethnocentric in its own right. One hardly needs to be a postmodern deconstructionist (à la Derrida) to

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[1] Peter Caws (1998) points out that this passage originally means something quite different from its subsequent Humanist interpretation: in Terence's play, *Heauton Timorumenos,* Chremes uses this phrase to justify his poking into other peoples' business.

call into question just how universally shared some human *reason* may be - and with it, the suite of shared communicative skills, styles, and intentions required to participate in the *cosmopolis*.

An emerging pattern of scholarship and research suggests, on the contrary, that the optimistic vision of the electronic global village rests on a number of assumptions which may be culture-bound. For example, rather than necessarily inaugurating an egalitarian and democratic global village, the new communications media threaten to expand, rather than resolve, cultural conflicts. Specifically, conflicts may be heightened between Western commitments to democracy, free speech, and individualism, and the cultural preferences of many Asian countries for more hierarchical governance, control over culturally significant media, and the collective rather than the individual.[2] Similarly, there is some evidence that new communications technologies, used from the 'top down' to enforce cultural unity, often fail in the face of deeply entrenched cultural differences. On the other hand, these same technologies may be used to reinforce distinctive cultural identities in the face of various pressures to conform to a larger cultural pattern of beliefs and preferences.[3]

The *First International Conference on Cultural Attitudes Towards Technology and Communication* (CATaC'98), and its affiliated publications, seek to bring together current insights from philosophy, communication theory, and cultural sciences in an interdisciplinary dialogue. The synthesis of disparate scholarly ideas will shed greater light on just how culture impacts on the use and appropriation of new communications technologies. Beyond the individual contributions themselves, some of our most significant insights will emerge as we listen and discuss carefully with one another during the conference itself.

As a way of preparing for that discussion, I offer the following overview of the CATaC papers and abstracts, along with a summary of the insights and questions they suggest. On first glance, the research and analyses gathered here both reinforce and dramatically expand the understanding of the complex interaction between culture, communication and technology that is sketched above. Briefly, between the poles of utopian visions and dystopian effects of an inevitable democratizing through CMC technologies, many of the papers gathered here sketch a nuanced understanding of a bipolar interrelationship between culture and technology. The interrelationship exists in a relatively neutral 'Internet culture' that fails to embed or impose specific utopian or dystopian values in CMC technologies, while at the same time allowing for value choices, including the choice to reinforce and enhance local cultures.

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[2] See Goonasekera (1990), Low (1996), Wong (1994), Sussman (1991), Ang (1990).

[3] See Venturelli (1993), Tremblay (1995). And in the CATaC papers, Soraj Hongladarom in effect responds to both of these points, arguing that (a) Internet culture does not necessarily result in the imposition of Western values, and (b) the Internet may allow the selective appropriation of Western values while also reinforcing local cultures and identities. For a more extensive treatment of these issues, see Ess (1998).

Taken together, these analyses thus suggest that CMC technologies will not lead to a homogenizing Internet culture (imposing either democratic or authoritarian values), but rather a connected plurality of diverse cultures and languages. The pluralistic *cosmopolis* may prove the Stoics right after all.

These first looks, however, are by no means meant to be definitive, but only suggestive. They are springboards for the conversations in London.

Session 1: The Politics of the Global Village

Steve Jones, *Understanding micropolis and compunity*, reviews a number of familiar communication theorists, including Ong and McLuhan, as he develops his own metaphors of 'path' and 'field' to discuss the influence and meaning of Internet messages. In particular, he takes up Carey's distinction between ritual and transportation models of communication to address 'compunity,' the merger of computers with communities and our sense of community - a merger that is strained between the traditions and rituals of real life and the kinds of communication as transportation facilitated through CMC. Jones analyses four areas - privacy, property, protection, and privilege - as central to possible on-line communities. His analysis both effectively represents the postmodernist approaches which have dominated Anglo-American analysis of hypertext and CMC, and uncovers important ambiguities in the effort to recapture lost community on-line. Such efforts, according to Jones, are only partially successful, and they introduce in their wake new difficulties distinctive to cyberspace. (Such ambiguities, we will see, will be characteristic of several analyses and research projects.)

Herbert Hrachovec, *New Kids on the Net: Deutschsprachige Philosophie elektronisch*, documents several experiments with conducting philosophy on-line in the German-speaking world, illustrating "the force and limits of attempts to install a computer-mediated space of Reason." Hrachovec is critical of too closely identifying at least the current realities of hypertext with such standard postmodernist theorists as Barthes and Derrida (an identification made most effectively and prominently by George Landow). In particular, it may not be accidental that 'electronic philosophy' is very much at the margins of German academic life: "some features of the new discursive forms are incompatible with the current educational system." Hrachovec's study of the contrasts between the 'microcultures' (my term) of traditional academia and on-line discourse may point to similar contrasts in larger contexts.

Barbara Becker and **Joseph Wehner**, *Electronic media and civil society*. In contrast to mass media, which established a kind of global public opinion, interactive media seems to support the development of so-called *Teilöffent-lichkeiten* - discourses that are characterized by context-specific argumentation

strategies and special themes. We assume that interactive electronic media will not replace the traditional mass media, but will be useful for pre-institutional forms of public opinion, as they can be found in non-governmental organizations, community pressure groups, local activities and so on. Following this, electronic media will probably support movements of the so-called civil society.

The question remains still open, whether electronic media might help to find a more global political consensus within a society by overcoming the discourse specific perspectives.

Ken Friedman, *Building cyberspace: Information, place and policy*, …

Session 2: Homogeneity, Marginalization, and the Preservation of Local Cultures

Daniel Pargman, *Reflections on cultural bias and adaptation*, problematizes the relation between culture and CMC technologies in terms of: how American cultural attitudes (historically) and diverse cultural attitudes (today) shape the development and use of CMC technologies; and how diverse cultural attitudes manifest themselves in the implementation and use of MUDs in general and of SvenskMud (presented as the first vernacular MUD in the world) in particular. Pargman identifies important ways in which cultural biases are 'built in' to computer systems and the Internet (e.g., ASCII code and English as the Internet's *lingua franca*) and then identifies representative interactions between social practices and technological artifacts (the products of design out of a given culture) in the "social-technical design cycle." Pargman then provides a fine-grained analysis of the multiple cultures to be considered in thinking about culture and technology - Swedish culture, youth culture, hacker culture, fantasy culture, and CMC culture generally. Pargman's paper provides a specific instance of a <u>non</u>-English implementation of a significant CMC technology as it also reminds us that 'culture' is not a hermetically-sealed category, but a series interweaving flows of diverse beliefs, values, and behaviors.

Alexander Voiskounsky, *Internet: Cultural diversity and unification*, takes a sociohistorical approach to human mental development as his starting point for an analysis of Internet usage - a usage he finds to be both unifying and fragmenting in significant ways. Voiskounsky's analysis is distinctive insofar as he examines both techniques of hypertext browsing (something that is unique to CMC environments) and the influence of status/position/rank on holding the floor and turn-taking rules (traditional categories of discourse analysis, now applied to the new environment of CMC).

Voiskounsky further examines whether or not *emoticons*, ASCII-based icons intended to compensate for the emotively 'cool' content of e-mail text as ways of signaling basic emotions, are genuinely universal. Finally, Voiskounsky points out the complex results of English, as the *lingua franca* of the Net and

the Web, being taken up by non-native speakers, resulting in greater 'contamination' of other languages with English terms, as well as a new pidgin Network English. (This analysis suggests, consonant with Sapienza and other analyses gathered here, that *culture* and *language* are not monolithic and impermeable blocks of content and practice, but rather fluid and permeable entities in constant interchange with one another.)

Filipp Sapienza, *Communal ethos on a Russian émigré web site*, uses Aristotle's definition of *ethos*, involving a communal (more than individual) conception of rhetoric, as the starting point of his analysis of a 'transnational ethos' or 'ethnoscape' (his terms) constructed by Russians and Russian émigrés on a web site. Sapienza finds that the Web provides a unique combination of communicative forms and practices which both preserve and challenge traditional notions of community, identity, and ethnicity. This perspective leads to the suspicion, commonly shared by other CATaC presenters (Hongladarom), that the Web will change traditional senses of national identity.

Cyd Strickland, *Aspects of diversity, access, and community networks*, provides an ethnographic study of La Plaza Telecommunity in Taos, New Mexico, USA. La Plaza is an effort to realize the Clinton administration's early vision of a National Information Infrastructure accessible by all Americans in a community with an average income of less than $13,000/year and telephone coverage of 65%. In addition to economic obstacles, Strickland identifies cultural barriers that emerged between La Plaza Telecommunity, as a largely male/Anglo and thus individualistic enterprise, and the more communalistic culture of the Pueblos and the family- and relationship-oriented culture of the Hispanics. While the failures of La Plaza are disheartening for those who hope CMC technologies will facilitate greater communication and democracy, Strickland's analysis helps make clear both economic and cultural realities which must be faced to realize such lofty goals.

Scott McConnell, *Internet Use in Uganda: A report on Internet Service Providers in Uganda and the NGO's that use them*, in his survey, identifies both availability of Internet service and actual use among non-governmental organizations (NGO's). His initial work identifies training issues and communication patterns by NGO's (local in contrast with international communication). At CATaC, McConnell will report on additional fieldwork results from early 1998.

Session 3: Communication in Cyberspace

Fay Sudweeks, *Cybersocialism: Group consciousness in cultural diversity* , …

Cameron Richards, *Computer mediated communications and the connection between virtual utopias and actual realities*, approaches cyberspace

through the genre of analysis defined by utopian and dystopian poles, so as to ask "how emergent notions of virtual utopia are related to the utopian functions of cultures generally." This calls into question, especially, the issues surrounding *embodiment* (my term); that is, are utopias envisioned for embodied human beings in 'real life,' face-to-face (embodied) communities entirely relevant to the virtual utopias made possible for disembodied entities in cyberspace? Richards further takes up two well-known postmodernist analyses of communication in cyberspace - Baudrillard's more pessimistic and dystopian perspective vis-à-vis Sherry Turkle's more non-committal, ambivalent position - and argues that Paul Ricoeur's reader-response theory offers a more fruitful framework for helping us distinguish between the use and abuse of utopian rhetoric in efforts to understand the new communicative possibilities of cyberspace. (Richards' turn to Ricoeur here may be compared with Hagan and Nayar's preference for 'reception analysis.')

Lucienne Rey, *Attitudes towards technology and communication across the multiple cultures of Switzerland*, focuses on Switzerland, which enjoys the 'luxury' of no less than four official national languages. This 'multiculturality' within a narrow space, however, is not often exploited fully, so as to enliven and enrich national discussions and debates. More often than not the public remains focused within its own language domain; facility in more than one language is the exception rather than the rule. It is hence little surprise that linguistic boundaries are at once cultural boundaries. This is often apparent in national elections; differences of opinion run along linguistic boundaries. The different linguistic communities also distinguish themselves one from another in their daily routines. Rey proposes a few differences can be ascertained in the communication of German- and French-speaking Switzerland. On the basis of a small study of letters to the editor, delivered via e-mail to various newspapers in German- and French-speaking domains, Rey develops some empirically grounded hypotheses concerning the different uses of electronic communication in German- and French-speaking Switzerland.

Session 4: Sociocultural Convergence of North, South, East and West

Michael Dahan, *National security and democracy on the Internet in Israel*, reviews several incidents in which 'freedom of expression' on the Internet led to what many see as serious breaches of Israel's national security (e.g., use of IRC channels and Usenet to 'broadcast' Iraqi missile points of impact, thus effectively serving as 'spotters' for the Iraqi military during the Gulf War). Dahan will address the conflicts between freedom of expression and information facilitated by CMC technologies and the specific political and cultural concepts of democracy and national security in Israel.

Jose Nocera, *Virtual environments as spaces of symbolic construction and cultural identity: Latin American virtual communities*, draws on Quentin Jones' definition of a 'virtual settlement,' along with symbolic interactionism and other social science approaches, to examine the group life of virtual communities in the Latin American context. It will be interesting to compare Nocera's results with those suggested by Jones and Richards.

Jason Rutter and **Greg Smith**, *Addressivity and sociability in 'Celtic men'*, take up 'Celtic Men,' a newsgroup originally specific to Shetland Isles (UK), as a both specific, culturally located example of developing communication and a more general example of newsgroup CMC. Their research explores how posters present themselves as agents with distinct identities and personas, and how this occurs within the frame of sociable interaction, specifically, the use of addressivity techniques to secure different 'footings' (drawing on the work of Goffman). Because their example is an on-line community originally developed out of - and still sustained by - a relatively isolated, close-knit community, this example may be suggestive for how CMC technologies both fray and preserve real-life cultural identities. This theme is taken up especially by Jones, Richards, and Hongladarom. This paper is also one of the few contributions to take up sexuality as a component of cultural identity, where sexuality touches on the theme of *embodiment* (which I suggest below.)

Jerome Heath, *Cultural attitudes and technology*, uses several different instruments to survey students in Hawaii, representing both Asian and US origins. His results indicate that acceptance of technology correlates most directly with gender, father's education, and area of national/cultural origin, in contrast with measures of interest in media, acceptance of newness and new people, and concern about public issues. These results suggest for Heath that old conceptions concerning what drives the growth of technology are flawed, and that we must include attention to belief systems or 'mind scapes.' Doing so, Heath argues, leads us to adopt a cyclic epistemology, described by Maruyama and adapted by Hegel, as a better way of understanding how technology is appropriated in response to needs.

Session 5: East/West cultural attitudes and communicative practices

Lorna Heaton, *Preserving communication context: Virtual workspace and interpersonal space in Japanese CSCW,* contrary to the view that technologies are value and culturally neutral, takes up two case studies to show how cultural values and communication styles specific to Japan are incorporated in the design of computer-supported cooperative work (CSCW) systems. She does so out of a social constructivist view, one that further suggests that technologies can be 'read' as texts, and drawing specifically on Bijker and Law's notion of

technological frame to explain how Japanese designers invoke elements of Japanese culture in justifying technical decisions.

Heaton highlights the importance of non-verbal cues and the direction of gaze in Japanese culture as an example of Hall's 'high context/low content' category of cultural communication style, in contrast with Western preferences for direct eye contact and 'low context/high content' forms of communication. She also notes in her conclusion the Japanese interest in pen-based computing, speech synthesis, virtual reality interfaces, etc., as resulting not only from the physical difficulties of using a Roman keyboard to input Japanese, but also the larger cultural preference for high context in communication.

Soraj Hongladarom, *Global culture, local cultures, and the Internet: the Thai example*, examines two threads of discussion developed in a Thai Usenet newsgroup, one dealing with critiques of the Thai political system and the other with the question of whether Thai should be a language, perhaps the only language, used on the newsgroup. In contrast with concerns that CMC technologies will erase local cultures and issue in a monolithic global cultures (cf. Keniston and Hall's 'bad dream'), Hongladarom argues that the Internet facilitates two different kinds of communication: (i) communication that helps reinforce local cultural identity and community (in part, as this communication fulfills what Carey calls the 'ritual function', i.e. strengthening community ties); and (ii) communication that creates an 'umbrella cosmopolitan culture' required for communication between people from different cultures. Hongladarom further suggests that we distinguish between a Western culture which endorses human rights, individualism, egalitarianism and other values of a liberal democratic culture (a 'thick' culture in Walzer's terms), and the cosmopolitan culture of the Internet as neutral (a 'thin' culture). The Thai experience suggests that the Internet does not force the importation of Western cultural values. Instead, Thai users are free to take up such issues and values if they wish, and they can do so while at the same time preserving their cultural identity.

This 'bipolar' result echoes and reiterates the findings of Jones, and possibly Pargman, Voiskounsky, and Sapienza.

Satinder Gill, *The cultural interface: The role of self*, …

Session 6: Culture and the Design of Technology

Adrie Stander, *Bridging the gap: Issues in the design of computer user interfaces for multicultural communities*, identifies several cultural factors at work in interface design, including: intracultural class differences in use of abstractions and generalizations, where such abstractions and generalizations are required to successfully navigate graphical interfaces; culturally variant senses of the 'locus of control' (either more internal or external), where an internal sense of control might be necessary for successful mastery of

computers; culturally-variant understandings of colors and symbols, as these are incorporated in the visual design of user interfaces; and the role of ethnicity, class, gender, and age in predicting individual success. Stander refers here to a study of South African students from eight different cultural groups and six languages, illustrating major differences in performance as correlated with cultural and linguistic differences.

Vanessa Evers, *Cross-cultural understanding of metaphores in interface design*, …

Andrew Turk, *Culture and participation in the development of CMC: Indigenous cultural information system case study,*…

Carleen Maitland, *Global diffusion of interactive networks: the impact of culture*, collected data on Internet diffusion in different countries and uses Hofstede's five dimensions of national culture, enhanced by the work of Herbig and Hall, to develop five empirically-testable hypotheses regarding specific cultural dimensions and the diffusion of interactive networks. Conjoining sociology and economics, Maitland argues that three of Hofstede's cultural factors may be indeterminate regarding network diffusion; that is, individualism vs collectivism, femininity vs masculinity, and long term vs short term orientation. Maitland proposes that diffusion of network technologies will advance more rapidly in cultures marked by weak uncertainty avoidance (cultures in which "What is different is seen as curious, as opposed to dangerous."), greater gender equality, and low ethnocentrism/high cosmopoliteness (orientation outside the social system). In direct contrast to the prevailing emphasis on equality and decentralization in postmodern analyses of CMC and hypertext, however, Maitland further suggests that network diffusion will also be favored by cultures with high degrees of power distance (i.e., preference for centralization and an acceptance of inequalities in power and status).

Session 7: Communication and Technology in Organizations

Diane Witmer and **Chutatip Taweesuk**, *Why people use the World Wide Web: an application of uses and gratifications theory*, rely on Csikszentmihalyi's notion of 'flow,' use and gratification theory, and additional theoretical considerations. Witmer and Tweesuk developed a survey instrument to measure functional uses, motivations, attitudes, and use of the Web and other media in a survey of public relations students and professionals in the U.S. and Mexico. Their results (limited in terms of sample size and representativeness) suggest that Mexican and U.S. business communicators are more alike than different in their use of the Web - probably because their professional needs override cultural differences which might otherwise affect Web use. They also suggest that the interactive character of CMC technologies may make the constructs of

flow more appropriate than use and gratification theory as a basis of future investigations.

Paul Tully, *Cross-cultural issues affecting information technology use in logistics*, reports on a survey of members of the Society of Logistics Engineers, an information technology professional group with chapters in nineteen countries. Given that 25%-50% of an employee's job behavior is culturally determined, understanding cultural differences and their potential impact on job performance is obviously crucial. Tully reports, first of all, that Americans value individual choice and achievement in contrast with other cultures' valuing the demands and accomplishments of family, clan or village. (These results intersect with Hofstede's category of individualism vs. collectivism - and are consistent with others' use of Hofstede in their analyses, i.e., Dustdar, Maitland, and Merchant.)

Heejin Lee and **Richard Varey**, *Analysing cultural impacts of computer-mediated communication in organizations*, take up Hall's ten 'primary message systems,' as constituting culture in a way useful for organizational studies and Stamper's use of these systems in 'evaluation framing,' as the framework for investigating the impacts of implementing a CMC system in an organization.

Panel: Global Culture, Local Culture, and Vernacular Computing: The excluded 95% in South Asia."

Kenneth Keniston and **Pat Hall** observe that India is the world's largest democracy, containing almost one-sixth of the world's population. Yet, given the nearly complete absence of software in India's seventeen official languages (besides English), 95% of her citizens are excluded from computer use, the Internet, and the World Wide Web. Keniston offers his bad dream of 'the Rule of the Digirati,' a small elite who will rule the digital future as English speakers and producers/consumers of a 'lowest-common-denominator world culture,' over against the remaining 99% of the world's population. This 99% represents the 95% who do not speak English in India, and all the world's illiterate and innumerate, which includes the underclasses of the North of India and the vast majority of peasants, farmers, and workers in the South.

India thus stands as a fair example of the global challenges to any dream of an 'electronic global village' as facilitated by CMC technologies. Keniston and Hall discuss collaborative efforts towards software localization in India as steps towards the 'happy dream' of making computers and networks accessible to the vast majority of India's citizens. Recognizing the role of political and cultural factors in localization projects, Keniston and Hall leave us with a series of questions which must be faced in such efforts. They suggest that technology alone will not determine our responses to such questions; rather, what we choose to do, particularly in the collaborative effort to set standards for

localization that are 'global without being imperialistic', will determine which dreams are realized in our digital future,

This panel compares most immediately with Hongladarom's analysis of the Internet experience in Thailand. It further echoes the concern regarding the relation between democracy and freedom of speech, on the one hand, and CMC technologies on the other, raised in the Israeli context by Dahan.

Observations and Guiding Questions

Several thematic questions guided the organization and development of CATaC'98. For example, how far does the popular vision of 'the electronic global village,' while ostensibly cosmopolitan in its intention, in fact rest on culturally-limited assumptions and preferences, such as:

- belief in *communication* as a sufficient condition for bringing about global understanding and democracy;
- belief in some sort of *technological determinism*, so that providing the infrastructure of CMC technologies will encourage, if not inevitably lead to, the appropriation of democratic and egalitarian values; and
- belief in a universally shared *humanity*, one more or less transparently communicable via CMC?

These philosophical and communication theoretical assumptions are open to question.

- Do CMC technologies embed or encourage the appropriation of a given set of cultural values, and/or do pre-existent cultural values resist and reshape the use of such technologies?
- What culturally-related factors, including attitudes toward gender and gender roles, encourage and/or discourage the appropriation and use of CMC technologies?

Clarifying our responses to these sorts of questions then allows us to develop a refined, more empirically-informed understanding of the prospects of realizing an electronic global village and the culturally-related conditions we must consider *beyond* infrastructure alone if such a global village is to emerge, including

- a more comprehensive theoretical framework which incorporates philo-sophical, communication-theoretical, and cultural insights;
- a more informed understanding of the *limits* of communication, especially as mediated by CMC technologies, in the face of culturally-defined constraints on communication and related practices.

This first summary of papers and abstracts allows us to draw some preliminary responses to these questions, and to sketch out a more general understanding of the interrelationship between culture, communication, and technology.

Theoretical Considerations

THE NATURE OF 'CULTURE'

A number of understandings of 'culture' emerge here, ranging from Clifford Geertz to Hofstede's notion of 'national culture' as marked by five dimensions. Our contributors recognize additional cultural dimensions, e.g., Stander, and several observe that culture is not a fixed, monolithic entity. Pargman points to several cultures which intersect in a given user. Voiskounsky shows the dual impact of English as the *lingua franca* of the Net, such that English 'infects' local languages, while local languages shape a 'pidgin Network English'. Jones, and Richards, and possibly Pargman and Sapienza, document how cultural identity is both changed and preserved in cyberspace. Do these various definitions, enumerations, and observations give us an understanding of culture which is adequate for examining, much less predicting (à la Maitland), the complex interactions between culture and technology?

THE OMISSION OF RELIGION

'Religion', while ordinarily recognized as a major source either directly or indirectly of the worldview of perhaps all people, is striking for its virtual absence in these papers. Can we have an adequate theory about 'culture' and CMC without considering religiously-shaped components of culture and worldview? Or is 'religion' fully reducible to the components of culture identified by Hofstede, Hall, etc.? In particular, given the central role of Islam in defining the cultures of the Arabic-speaking and Islamic worlds, failing to take religion into account may partly explain the absence of research represented here on Arabic/Islamic countries. (Cf. Scope and limits of this research, below.)

TECHNOLOGY AS 'CARRIER' OF CULTURAL VALUES

Different contributors provide different views on the question, "do technologies *embed* specific cultural values?" Pargman says yes; Voiskounsky, Keniston and Heaton suggest that specific *designs* (including use of language, etc.) reflect specific cultural values; Hongladarom says no. This ambiguity of responses concerning whether technologies embed specific values parallels a similar variance in responses to the broader question, "do CMC technologies *necessarily* result in the importation of specific cultural values (the issue of *technological determinism*)?" More precisely, a pattern emerges here which suggests that CMC technologies do *not* necessarily impose specific cultural values. Rather, while CMC technologies allow for some level of cross-cultural communication which can expose their users to the values of other cultures,

they likewise allow for reinforcement of local cultural patterns and values (see The Future of the Electronic Global Village, below).

THEORETICAL ELEMENTS

Embodiment

Jones and Richards explore most overtly the connections and differences between virtual and real life, between on-line communities and communities of embodied people who sometimes interact face-to-face. Rutter and Smith's analysis of 'Celtic Men' also touches on the possible connections between virtual and embodied existence. Is *embodiment* otherwise taken for granted? Does the meaning of *embodiment*, including sexuality, need elaboration if our theories are to be more complete?

Gender

Gender is an important factor in the analyses of Rutter and Smith, Maitland, and Heath. What do these analyses imply concerning the prospects of gender equality in cyberspace? While Maitland suggests that network diffusion will proceed more rapidly in societies marked by gender equality, does this mean necessarily that the diffusion of networks will encourage gender equality?

THEORISTS AND FRAMEWORKS: HOW FAR POSTMODERNISM?

Communication theorists such as James Carey and Edward Hall are used frequently, along with more recent theoretical approaches perhaps more directly suited to the interactive character of CMC (Witmer and Tweesuk point us to Csikszentmihalyi, for example). Does a more complete theory emerge here? A theory more fully informed by more complete understandings of the meaning of 'culture, on the one hand, and by the wealth of empirical evidence collected here, on the other hand?

Are *postmodern* frames of reference, informed by McLuhan, Ong, etc. in communication theory (and addressed here especially by Jones, Hrachovec, and Richards in their references to Barthes, Baudrillard, Derrida, etc.), fully adequate for understanding the interplay between culture and CMC? Or, following the suggestions of Richards (pointing us to Ricoeur), and Hagan and Nayar (pointing us to reception analysis), do these postmodern frames need to be supplemented with different hermeneutical approaches?

Scope and Limits of this Research

These papers and research projects represent a considerable range of countries and cultures: Australia, Austria, Germany, India, Israel, Japan, Mexico and Latin America at large, Norway, Russia (and Russian émigrés), South Africa, Sweden, Switzerland, Thailand, Uganda, and the US (including Hispanics, and Native Americans). Despite this range, however, there are notable absences, e.g., China, France and (with the exception of Switzerland) francophone countries, and the Islamic countries of Africa, the Middle East, and Asia. What do these absences mean?

These absences *may* reflect real differences in how far CMC technologies have been appropriated and studied, at least with regard to some francophone countries (with the obvious exception of France, who led the world with its development of Minitel in the 1980s), China, and some Arabic/Islamic countries. If so, how far do Maitland's hypotheses - that diffusion will be high in societies marked by weak uncertainty avoidance, gender equality, and high power distance, and low in societies marked by high ethnocentrism - help predict and/or explain these absences?

Similarly, Hall's distinctions between high/low context/content, utilized by many contributors, would suggest that at least current Internet and Web communications are better suited to high content/low context cultures. Zaharna (1995) argues that Middle-Eastern cultures, specifically the Arabic-speaking Islamic countries, are marked by a communication preference for high context/low content. Just as Heaton has documented how this preference in Japan has led to the development of distinctive CSCW software and hardware that is better suited to capture the nonverbal dimensions of communication crucial to high context/low content cultures, will similar developments be required to encourage greater participation among Arabic-speaking Islamic countries?

Taken together, these papers and research projects represent philosophy, communication theory, cultural studies, linguistic analysis, and other social sciences. Are there apparent ways - and if so, how - of conjoining these theoretical approaches?

I would propose an epistemological pluralism which acknowledges the distinctive strengths and limits of each, while seeking to bring them together in a coherent whole using the strengths of each to complement the limits of the others. But what would this mean specifically?

The Future of the Electronic Global Village?

Finally, what are the prospects for the electronic global village? Over against what James Carey (1989) characterizes as the 'Manichean' dualism character-

istic of especially American discourse concerning new communications tech-
nologies (represented here by the 'angelic' cosmopolitan global village
envisioned by AT&T and Keniston's 'demonic' dystopian vision of a digital
future ruled by an elite) a more complex understanding of culture, communica-
tion, and technology emerges. First of all, it appears that while CMC
technologies can embed culturally-specific values (so Pargman and Heaton), it
is also possible to recognize these culturally distinctive values and reshape our
software and hardware accordingly (in addition to Pargman and Heaton, so
Keniston).

This suggests that neither the utopian nor dystopian visions of our digital
future are *necessary* consequences of adopting new technologies. Rather, a
considerable range of *choice* seems open to us with regard to how we shape and
use these technologies. In particular, the possibility of localizing hardware and
software to meet local cultural preferences and requirements suggests that CMC
allows for an 'umbrella' Internet culture. This 'umbrella' culture is 'thin' or
culturally neutral in many respects, as it allows for cross-cultural
communication while leaving intact individual/cultural worldviews and values.
It allows local cultures to use these technologies in ways which both reinforce
and expand initial cultural identities (so Hongladarom; cf. Jones, Becker and
Wehner, Richards, Pargman, Sapienza, Rutter and Smith).

Implications for the Praxis of Implementation

If such a complex pluralism of cross-cultural communication coupled with
preserving local cultures is both possible and desirable, we may then ask: what
steps can we take, beyond localization of software and hardware, towards such a
pluralistic global community? Many responses will be necessary here but, along
with the many contributors who use Hall and Hofstede's schema, Maitland's
initial correlations between cultural factors and network diffusion may also
provide concrete guidance for how to proceed.

This emergent conception of a global community - one connected in
unparalleled ways by a technology that simultaneously preserves local cultures
in dialogue with the larger world - stands as at least one alternative to the
Manichean poles of utopia and dystopia forced upon us by an ostensibly
autonomous technology. Interestingly, this conception meshes well with earlier
observations regarding the inability of communication technologies to enforce
'top-down' models of cultural identity, while they enable 'bottom-up' efforts to
reinforce distinctive cultural patterns. Perhaps the Stoics were not so far off,
after all?

But these are simply first comments - one first reading among the many
readings and views we will enjoy and debate at CATaC'98. Safe travels!

References

Ang, I.: 1990, Culture and communication: Towards an ethnographic critique of media consumption in the transnational media system. *European Journal of Communication*, **5**(2-3), 239-260.

Carey, J. W.: 1989, *Communication as Culture: Essays on Media and Society*, Unwin Hyman, Boston.

Caws, P.: 1998, E-mail to the author, 16 May.

Ess, C.: 1998, Cosmopolitan ideal or cybercentrism? A critical examination of the underlying assumptions of 'The Electronic Global Village.' *American Philosophical Association Newsletter on Computers and Philosophy* 97, **2**, 48-51, http://www.drury.edu/faculty/ess/papers/cybercentrism.html.

Goonasekera, A.: 1990, Communication, culture and the growth of the individual self in third world societies, *Asian Journal of Communication* **1**(1), 34-52

Low, L.: 1996, Social and economic issues in an information society: A Southeast Asian perspective, *Asian Journal of Communication*, **6**(1), 1-17.

Sussman, G.: 1991, The 'Tiger' from Lion City: Singapore's niche in the new international division of communication and information, *in* Sussman and J. Lent (eds), *Transnational Communications: Wiring the Third World*, Sage Publications, Newbury Park, CA, pp. 279-308

Tremblay, G.: 1995, The information society: From Fordism to Gatesism. *Canadian Journal of Communication*, **20**(4), 461-482.

Venturelli, S. S.: 1993, The imagined transnational public sphere in the European community's broadcast philosophy: Implications for democracy, *European Journal of Communication*, **8**(4), 491-518.

Wong, K.: 1994, Media, culture, and controlled commodification: The case of peripheral Singapore, *Advances in Telematics*, **2**, 144-165.

Zaharna, R. S.: 1995, Understanding cultural preferences of Arab communication patterns, *Public Relations Review,* **21**(3), 241-255.

PART 1

THE POLITICS OF THE ELECTRONIC GLOBAL VILLAGE

UNDERSTANDING MICROPOLIS AND COMPUNITY

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Abstract. This article begins with an analysis of virtuality and virtual culture as forms of social flow and build toward an analysis of the elements of micropolis, fractalized metropolis, as the setting for postmodern (sub)urban life. The construction and organization of "links" on the Internet is akin to Forster's (1948) request in "Howard's End" that we "only connect." What makes the Internet and its promise of "only" connection so compelling is "compunity" (the merger of computers and community), and its power lies in its promise to (fractally) recreate something we believe has been lost, namely, community. But the fractalized image-ination of community online is akin to the gated community offline, or, one might say, is itself a "Gates-ed" community. Its (un)reality is understood to make it somehow apart from the social, and this paper will argue that the opposite is more often the case: the management of connection that preoccupies social life online is itself the interface between one fractal and another.

In my book *CyberSociety: Computer-Mediated Communication and Community* (Jones, 1995), I argued that terms commonly used to describe the Internet, such as "information highway" and "national information infrastructure" in the U.S. are unfortunate but telling metaphors. They bring with them much intellectual and social baggage, largely on account of the startling parallels between the current project, this "information superhighway," and the one spurred on in the States by both World Wars, the interstate highway system - not the least of which is the reliance on the word "highway" and the romantic connotations of the open road. Another important parallel is the initially military motivation for highway building (as established by Thomas Jefferson, among others (Patton, 1986)) and the military origins of what is presently the most prominent information highway, the Internet, in defense department computer networks linked to university research centers. And yet another parallel is to the 1960s "space race" and our quest to lead in new technologies and science.

And race ahead we do. I think racing, to push the motoring metaphor, serves to well-characterize a social bias based, in essence, on movement itself. We can acknowledge several things that compose it; competitive spirit perhaps, a modern need for mobility also, and curiosity as well. It is a movement based on speed, rooted in transportation, and oblivious in large part to that which is transported. To put it another way, loyalty is to the movement of something (often ourselves, but not always) from one place to another, to flow, and not to that which is being moved (the last word's *double-entendre* intended), to content.

I believe this quest for movement is well-illustrated by our early understanding of electricity, and can be most easily recognized in the work of Nikola Tesla (Cheney, 1981). In the late 1890s Tesla envisioned a world linked by electricity. He proposed the development of a global electrical network to facilitate communication. Tesla believed that anything could be coded into electrical impulses and transmitted via electricity. In that sense he presaged the current trend toward digitization. But one might say that he also foresaw the postmodern shift from meaning to Deleuze and Guattari's (1980) concept regarding flow, from a social space within which signs took shape, metamorphosed, disappeared and reappeared, to a space where meaning shifts while signs remain. Meaning itself is fluid, mobile, and nothing should have meaning *for long*.

Another reason I find our use of the highway metaphor unfortunate is that it leaves aside the issue of power: It focuses our attention on the road, the infrastructure, and away from the people and "vehicles" that traverse it, away from the road-side, away from the interaction of road and place. It focuses our attention away from the gaze of others, the sense that we are as surveilled as we are social (Foucault, 1977). We are led to believe we are in power, we are the ones "surfing," or "using," and others cannot see us, just as we cannot be seen when we watch television. The seeming absence of the other focuses away from economic and political issues, and directs us toward ourselves.

But there is evidence of the "other" online. Perhaps a metaphor from boating would serve better than on based on automobile transport. As we travel along an information "path," we leave behind a wake, though we may not leave behind tangible and permanent markers. One of the earliest discoveries in electromagnetics was that as an electrical current flows in a wire a magnetic field is generated *around* that wire at a right angle. The forces not only interact, they are dependent on each other, and the wire's "content," the movement of electrons through it, creates a "field" of force around it. The creation of those fields is itself dependent on movement. Such may be the case with messages we send via Internet (or for that matter via other media as well); they travel from place to place but also create a "field" of influence and meaning around themselves.

Many others (McLuhan, 1965; Carey, 1989; Ong, 1982; Eisenstein, 1979; Goody, 1986) have assayed this territory, but perhaps it is necessary to do so again, as we have become far more savvy media users and producers. McLuhan's once oft-repeated phrase - the medium is the message - contains a new twist: We are not interested in the message *per se*, we are interested in getting the message across. We have less interest in what we mean and more interest in how we mediate what we say. What medium shall I use, and what will the consequences be of my choice?

Carey (1989) links the study of communication to the study of social relations, noting two trajectories along which we think about communication. The first trajectory is along the lines of the "transportation" metaphor of communication. In this model communication is, in the main, the movement of messages from one place to another. This is the model I have thus far characterized, and the model on which the communication industry itself is built.

Carey contrasts the transportation model to the "ritual" model of communication, the latter intended to connote communication as the sharing of ideas and beliefs. Whether for a particular purpose or not, whether for transmission of information or participation in those activities that make us human, be they mundane or special, the ritual model points out that communication is the medium within which we exist, as much as is the air we breathe. Again we find a twist on McLuhan - the medium is the message because the medium is not one of communication *per se* but rather it is the ground in which human connectedness can grow and flourish.

But the ritual model does not enter into our public conversation about new media, and it does not fit industry models and methods of communication technology development. To put it another way, when one is asked "Did you hear?" these days, the question connotes something about whether we are connected, wired. Forster's admonition that we "only connect" has been taken too literally. Rarely does being connected anymore carry the connotations of community, gossip, storytelling. What is connoted is instead "compunity," a merger of computers with communities and our sense of community. We long for the community and communion that the ritual model holds dear as these are elements inseparable from communication. But we are given instead the ability to send messages to and fro as disconnected and disembodied texts. The ritual model emphasizes that communication is the means by which we build our understanding of the world and ourselves, and the transmission model's emphasis is on moving messages around as an end unto itself. The latter activity is more easily quantifiable and commodifiable and much better suited to the marketplace and to industry.

It is also a cynical activity, insofar as it reduces values to numbers, by valuing only numbers. Others have noted this development by examining the

substitution of marketing for collectivity, or, as David Marc's (1984) wry comment on Walt Whitman tells us, we are in an age of "demographic vistas." The result is a fueling of our distrust of the myth of progress and modernity, and fear that though we may never again be out of touch, we will rarely again feel touched by what someone communicates to us. That fear keeps us clinging to the communities within which we feel a sense of trust, of safety. In physical terms these are, increasingly, gated communities. In terms of computer-mediated communication these are "Gates-ed" communities, ones in which we hold keycards in the form of passwords, connectivity and access. In cyberspace these are what I believe is an analog of "metropolis": "Micropolis," namely, smaller and smaller groupings of people, fractal metropolii. I use the term "fractal" in this case both in the sense of a figure with self-similarity at all spatial scales, and as a play on words, a concatenation of "fractured" and "partial." Micropolis is a fragment, a fractured substitute in our lives for a polity. But it is also a fractal in the sense that social groupings in geographic, physical space, and ones in cyberspace, are gaining in self-similarity at and through all levels. Online, micropolii are gated in an oddly interlocking fashion (a gate opens into a community, but may also, like a cosmic wormhole, open into still another community seemingly very different and separate, though linked via interest (Jones, 1995). Micropolii are, I believe, the result of what Marshall Berman (1982) identified as "The innate dynamism of the modern economy, and of the culture that grows from this economy, annihilat(ing) everything that it creates - physical environments, social institutions, meta-physical ideas, artistic visions, moral values - in order to create more, to go on endlessly creating the world anew" (p. 288).

Interconnected though micropolii may be, they rarely form a collective via their interconnectivity, instead serving groups just slightly different one from the other. We experience a fragmentation of community just as we have on introduction and spread of cable television, magazines, and numerous other media. Our sense of others is very wide, our experience of others not very long. Perhaps this is due in some part to the approaching end of the millennium, a time when life seems to simultaneously speed up and slow down, the former feeling aroused by our sense of the length of time, the latter brought on by our sense (to borrow from Laurie Anderson's observations during her perform-ances) of time's width. As we sit on the cusp of millennial change, we not only feel that time stretches very far back, that it has a retrograde trajectory, but that it stretches very far ahead, too, perhaps so far ahead that we cannot comprehend, and as we near the year 2000 the millenium becomes a handy marker for us, a time buoy if you will. It bobs along, always at a seemingly unchanging distance from now, though I wonder how that distance will affect us in 1999 when we can no longer use years a measure that keeps us distant from millenial change.

Perils and Parallels

A friend once remarked that "no one ever said that change had to make any kind of sense at all," a statement both true and revealing. Its truth is rooted in the randomness of change, in the inability to, God-like, will everything into place. It reveals that we nevertheless try to make sense of change, whether we try to will change into being or not. And perhaps we work even harder at sense-making as we become ever more sensitive to the ephemeral nature of meaning. The activity of sense-making has, in the case of life in compunities, made clear four areas that are common, forming a consistent narrative pattern illustrating where social concerns lie:

1. Privacy
2. Property
3. Protection
4. Privilege

That these themes are central to our discourse about new communication technologies is telling both because it makes our concerns clear *and* because it points out the mythic nature of technology's promise. The former is not difficult to discern, as these themes are easy to find in our conversations about the Internet and compunity. The latter is no more difficult to discern either, but requires the historicizing of these narrative patterns to help explain the role of new communication technology in social change.

PRIVACY

Much of the current discussion about the information superhighway revolves around privacy. It forms the core of many a government's concern that a "back-door" must be created for every computer and network (using the "Clipper chip" in the U.S.A., for instance) to allow access for the computer equivalent of continual surveillance and eavesdropping. In more commercial terms, one can ascertain corporate interests in gathering information electronically from us as well, and perhaps the most notable such attempt via computer-mediated communication was Microsoft's intention to include as part of its Windows 95 operating system a program element by which, upon electronically registering the software, information about a person's hardware is transmitted to Microsoft.

Privacy also forms the core of concerns about how information about ourselves will traverse the highway. Will anyone be able to "tap" into the data stream and fish out our credit or medical records? Will they be able to intercept credit card information as it zips from Internet site to Internet site? How will we prevent that from happening? What will happen to all the data that we send? Since data is relatively easy to store, will every message we send and receive find a place in some great universal archive? In place of gossip and hearsay,

features of community, we find control and manipulation, features of com-punity. These issues have followed the development of each new communica-tion technology, from the advent of writing and printing, through the invention of television, when we thought others would see into our living rooms via the picture tube, and are symptomatic of a larger social issue, namely the ebb and flow of the boundary between public and private. To borrow from Walter Ong, what drives our concerns is the seeming permanence of methods of communication beyond the oral. As regards the spoken word, once something is uttered, it is also lost to all but memory, and as we have become less trusting of our own memory (illustrated by brisk sales of Dayrunners, personal organizers, etc.) we also become inversely more trusting of our ability to deny that which was once spoken as having been misheard, misrepresented, misinterpreted or simply incorrectly remembered.

In essence, our privacy concerns are based on the need for externalizing (or commodifying), in a more or less permanent fashion, information about ourselves. It too needs to travel, to be transported, and it needs to do so independently of us. We cannot be in more than one place at a time, but social relations, particularly ones formed and maintained by bureaucracies, demand that we be. And once information about us is external to us, it is also out of our control, just as the picture once taken of us is no longer ours but the photographer's.

It is important to note that one perspective on privacy issues runs parallel to what Jean Baudrillard (1983) has written in regard to the hyperreal, the "realization of a living satellite," in which "each person sees himself at the controls of a hypothetical machine, isolated in a position of perfect and remote sovereignty, at an infinite distance from his universe of origin." Our privacy is to a large degree not based on the need to control what is "inside" us already, but to control what escapes us and enters domains other than our own "private," and to conversely control that which *does* enter our own private sphere. Internet technologies are the electronic component (and a natural evolution of the telephone) to the triumvirate of technologies of the Fordist project of suburbanization. The first component was the development of the modern house, removed from the street, fenced off (and in some cases within gated communities) from others. The second component was the automobile that allowed movement along a physical network of roads and highways that managed to provide access to places outside the house while maintaining minimal contact with others. The metaphor of the Internet as "information highway" thus has another parallel, to Fordism, particularly as it engages Fordist notions of efficiency, supplanting a mechanical system with an electronic one.

But to control information to the extent that we can manage not only its movement from our own selves into the public realm but its subsequent

metamorphosis in and during public discourse is nearly impossible, and denies that we are public beings, denies our essential humanity. We can no more control information, once externalized, than we can control the propagation of waves from a raindrop that has fallen into a pool of water. Of particular concern, then, is that continuing emphases on privacy concerns, by engaging us in a frenzy of largely unproductive activity to ensure that we control our inner and outer worlds, do, to some extent, more than symbolically privatize us more than we may want or need.

PROPERTY

Relatedly, once information about us is made external to us, and subsequently made digital and available electronically, its dissemination is relatively not complex. Copying files on disks or sending them over networks is electronically and mechanically much, much easier than photocopying a book, for instance.

But more interesting than simply the ease with which we can accomplish copying is that ultimately, given that information in the digital domain is essentially string upon string of ones and zeros, we are beginning to redefine the term, and perhaps very nature of, "property." To put it in simplest terms: Who owns a numeral or a "bit"? We have some evidence of the nature of that question from experience with software and compact audio discs. When we can not only copy but clone things, how will we identify "originals"? And, more importantly in industrial (and again, Fordist) terms, how will we restrict production and acquisition to effectively control the marketplace? Copyright law from its very beginnings relied on adjudication, not enforcement, by the government. For enforcement it relied on technology. In the past copying a book was labor-intensive, and the process itself mitigated against copyright infringement. It was simply easier to buy a book than to copy it. The photocopying machine changed that equation of time and money, just as the cassette deck changed the relation between consumption and copying for music, the VCR changed it for films and TV shows, and the computer changed it for software.

The most often asked question in this regard is: What will authors and publishers do to ensure income from their work if it's available on an electronic network? The issue is not in the first instance one of economics, but again one of control. Who will have the *right* to do something with a work is not a decision inherently connected to determining who will profit from it. As with aforementioned privacy issues, control is the root concern, for as soon as we have externalized (commodified) a work, it can migrate away from us in the same fashion that credit and medical (or any other) information can be passed around.

Moreover, control is the primary concern of entertainment and electronic industries that struggle with the structural overcapacity of production whose only traditional solution (one in name only, for each solution has begotten another problem) has been the evolution of distribution. Consequently, the development of distribution channels has outpaced the ability of the socio-legal complex to maintain a civil order that has traditionally offset the tension between publisher and author, the two sides of the production chain that co-exist least easily. The Internet is thus a project alongside that of the opening of markets and borders, epitomized by the GATT and the NAFTA, trade agreements that provide the greatest freedom to movement of abstract commodities, or, namely, intellectual property. The development of the Internet has bumped up against legislative issues, and is only further evidence that the decentralization of distribution as an aid to mass production and consumption, is in fact inimical to control by legislative means.

PROTECTION

Thus, if legislative means are unable to protect us from the flow of information, what might? To return to the concept of electromotive force, the lines of magnetic force created by a current flowing through a wire are directional, and move in the same direction as the current's flow. Moreover, these magnetic lines of force are elastic, and cannot be broken. One might imagine that the current is that which is created, distributed and consumed, and the magnetic force is the sociocultural change occurring external to such a Fordist system.

Historically, protection has been understood as the attempt to regulate the "current," in this case, namely, the content of what flows through the system. Consequently, authors have long sought protection for their work, but it has been producers, manufacturers, and distributors who seek ways to ensure income, and to do so requires some form of protection against copying. However, experience (particularly recently with Digital Audio Tape and its Serial Copy Management System) has shown that a technological anti-copying solution is rarely a final solution. For many authors the concern over copyright has as much or more to do with having their work re-, or de-contextualized than it does with financial gain (the U.S. is one of the few countries that does not recognize an author's moral rights in a work).

There is another way to think about protection *vis a vis* content, as that which protects the integrity of a work. The technology that enables both new forms of creative activity (desktop publishing, collaborative writing, computer-aided design, digital audio and video, for instance) also enables its distribution via new media like the Internet, and enables its ready editing and recombination. What, if anything, can protect the integrity of a work that new technologies make so malleable?

In fact the socio-legal system has had less difficulty with these issues than it is now having, and is going to have, with issues related to the "magnetic fields" (to return to the metaphor of electromotive force) created by content. To put it another way, the technologies of content distribution also deliver meaning to us. We will likely want to avoid some of it, we will want to screen some of it, and some of it we may, for good or ill, feel a need to censor. We will seek protection in the same way some now seek it from violence, obscenity, and the like found in older, traditional forms of media. We may also seek protection from the equivalent of "crank" phone calls, and from the inability to verify identity of the senders of messages. These are the concerns of legislation such as that found in portions of the Telecommunications Bill passed in the U.S. in 1996. What such forms of legislation seek to protect against is not content *per se*, but the consequences of content. We sought (and continue to seek) such protection from the telephone, television, radio, telegraph...from virtually all other media, for they are not merely "media" in any kind of passive sense, delivering information and nothing more, they are active intruders into our mental processes, requiring our attention, which, whether freely given or not, is not returned.

Thus it is, I believe, that we seek protection from what we have termed "information overload" (no matter how much, on some level, perhaps only the commercial, we may wish to be the ones doing the overloading). The question here is: How do we attend to the social connections impinging on us, the connections we at once desire (e-mail, telephone, fax, etc.) and despise (for they take up more and more of our time and energy)? These are the lines of force created by the "current flow" of content. We couldn't be more in touch and yet the telecommunication industry promises us ever closer, faster and greater contact. It is necessary to think through the implications for a society whose members face ever-greater demands on their time and thought. These demands make it more difficult than ever to engage with others by non-technological means, and shave away the time we allot to personal interaction. They are but one form of communication, perhaps neither better nor worse than any other, but they do carry with them their own structuring forces.

PRIVILEGE

Among the structuring forces is that of access and it will not be equal and uniform. To have it so would mean, in social terms for instance, not only provision of hardware and connectivity, but operating systems so sophisticated as to be stupid, that is, sophisticated enough to know when users are unsophisticated and then able to "dumb themselves down." It would mean the technological equivalent of "a chicken in every pot." It would mean the establishment of universal literacy, for, if nothing else, using computer

networks requires good reading and writing skills. But, most importantly, it has *already* meant the definition of computing as a social necessity.

Will we have information "haves" and "have-nots"? Probably (we already do, with our without computers). What will be the consequences? That is more difficult to determine. We already have such a class separation - in some sense those reading this essay are likely to be "haves," and others, from different backgrounds, different experiences, different opportunities, may be destined to be "have nots." There are at least two important questions resulting. First: What will you do with what you have? Second: What will what you have to be like?

There is also the matter of privilege in its more mundane sense, and for those in education, publishing and related fields, this is critical to understand. Again, the latter sense of privilege is directly related to the initial lines of force created by the passage (movement, transportation) of content across new networks of communication. The more common sense of privilege I wish to invoke here is related to the lines of force created at right angles to that initial force, the "magnetic" instead of the "electrical" in terms of electromotion. We do not have information elites in the sense that the "haves" simply have more information than others, but in the sense that it is the "haves" that are organizing information for others, and by so doing they are undertaking a profoundly socio-epistem-ological act, generating the maps, indices, tables of contents, bibliographies, hypertext links, that others will use to organize not only their research and writing, but their thinking and knowledge as well. We have witnessed these past few years (at least) the eruption of critical scholarship that, for instance, critiques New World narratives and seeks to restore understanding of indig-enous cultures and knowledge. May we be self-critical as we undertake an enterprise similar to that of New World explorers, who came, saw, and categorized?

Conclusion

It is by a very slow and gradual process that social change motivated by new technology, and new media technology in particular, occurs. We do not shift from one paradigm to another, from one process (mental or physical) to the next, at all quickly, and, I would argue, we often do not notice change when it does occur, because it does not happen in the expected social arena. So, for instance, the widespread use of the printing press and the spread of literacy lead to increased education and awareness, which we expect, but they also lead to isolation, which we expect less, even though we have greater awareness, for as we attend to our reading material we attend less to those around us at the time we are reading (which we often find useful when we sit next to strangers on an airplane, for example). Consequently, I am quite unsure about the potential to

harness any technology for predictable social change. Our technologies are designed in anticipation of their effects, but the effects themselves are not ones that are informed by history, rather they are woven from our hopes. We seem to be taking a step toward privatization and polarization through use of new communication media like the Internet, but is that symptomatic, causal, or...?

Irrespective of the answer to that question, ultimately we need to examine our assumptions about how new media technologies will affect our society. We seem to hold some common beliefs (Thornburg, 1992), that they will:

1. Benefit education and learning;
2. Break down barriers and hierarchies (social and other kinds);
3. Create new social formations, typically in opposition to dominant ones;
4. Make participatory democracy feasible and easy;
5. Make the interface between man and machine seamless;
6. Create new legal and ethical problems outside the parameters of existing policy and legislation.

We must ask: From where do these assumptions spring? Have we tried to achieve these things already, by other means, and with what success? Or do they remain assumptions (or hopes), realizable or not? Our ethics must spring from our beliefs, and as yet our beliefs about technology are uncertain, just as the technologies we envision are not certain, and indeed are consistently in flux. But we do not need the technology to look inside ourselves, we need only to inspect our beliefs and reflect on them, for they, and not the technology, represent what we desire.

Other outcomes are just as possible, and to an extent are already making themselves present. Our use of an index, for instance, is being replaced by a point/click/search paradigm establishing itself through use of hypertext, electronic databases, the World Wide Web, and the like. In education the busywork that teachers once handed out via paper is often being supplanted by busywork via computer and touted as somehow more beneficial to students on account of its "interactivity," though in such cases interaction is so loosely defined as to mean anything from pushing a button on a computer's mouse to attending to an audiovisual presentation. These are outcomes, to use the concept of electromotive force a final time, at "right angles" to the ones most visible. They affect our everyday lives in innumerable ways, are elastic but not breakable, affect our thinking and very thought processes, but do not come at us in one fell swoop, and are often difficult to describe, much less to wish for.

It is particularly important to note that, on reflection, each of the above beliefs is rooted in the transportation model of communication, which is itself based on the primacy of the movement of current through a wire and unreflective of the "right-angled" lines of force. Each belief in its way has as its

premise that moving messages around more effectively will make these beliefs metamorphose to reality. Perhaps this is not surprising, for in Western societies, to a great extent, transportation has been a ritual activity. Unlike in our public social lives, in many ways one of the few activities over which we have a great deal of control is transportation. Our own bodily "technology" evolved toward mobility, and we have used technology to augment it. We are at the wheel of our car, our control panels in front of us, regulating our own private environment. And cars and driving are not the only area in which we increase control of transportation - we effectively increase it via the new technologies of communication, by using fax machines and e-mail, time- and date-stamping messages, packages and memos, ensuring that our words and information get where we want them to go, and do so on time, through a variety of control mechanisms. In fact, one of the most touted aspects of the combination of telecommunication and computers is that it will somehow supplant transportation altogether and result in a great increase in telecommuting. That, so far, has not happened, but it presents an interesting, and heady, mix of metaphors that have driven (pardon the pun?) national conversations in western countries, and continue to fire the futurist manifestos of many politicians, particularly ones in the U.S. Congress (as well as marketing pundits).

We still lack control over what will happen to the messages we create and send when they get where they are going, because they are essentially out of (our) control. I do not believe any form of technology can assist us to better create and interpret messages - only we ourselves have the capacity to better those abilities. It is most disheartening, perhaps dangerous, to believe that since machines have replaced some forms of human labor they will replace human thought. Perhaps the greatest force mitigating against telecommuting, and ultimately against most technology, is that people *like* people, seek to be with other people, and seek to maximize interaction. Developers of tools like those associated with the Internet's use succeed best, it seems, when they recognize that, and put technology in service of conversation rather than communication, in service of connection between people rather than connection between machines, and in service of understanding rather than movement.

References

Baudrillard, J.: 1983, The ecstasy of communication, *in* H. Foster (ed.), *The Anti-Aesthetic*, Bay Press, Port Townsend, WA, p. 128.

Berman, M.: 1982, *All That is Solid Melts Into Air*, Simon & Schuster, New York.

Carey, J. 1989. *Communication as Culture,* Unwin-Hyman, Boston.

Cheney, M.: 1981, *Tesla, Man Out of Time*, Prentice-Hall, Englewood Cliffs, NJ.

Deleuze, G. and Guattari, F.: 1980, *Milles Plateaux,* Minuit, Paris.

Eisenstein, E.: 1979, *The Printing Press as an Agent of Change,* Cambridge University Press, New York.

Forster, E. M.: 1948, *Howard's End,* A. A. Knopf, New York.

Foucault, M.: 1977, *Discipline and Punish: The Birth of the Prison* (trans A. Sheridan), Pantheon, New York.

Goody, J.: 1986, *The Logic of Writing and the Organization of Society*, Cambridge University Press. New York.

Jones, S.: 1995, *CyberSociety: Computer-mediated Communication and Community,* Sage Publications, Newbury Park, CA.

Marc, D.: 1984, *Demographic Vistas,* University of Pennsylvania Press, Philadelphia.

Marvin, C.: 1988, *When Old Technologies Were New,* Oxford University Press, Oxford.

McLuhan, M.: 1965, *The Gutenberg Galaxy: The Making of Typographic Man,* University of Toronto Press, Toronto.

Ong, W.: 1982, *Orality and Literacy,* Methuen, London.

Patton, P.: 1986, *Open Road,* Simon & Schuster, New York.

Thornburg, D.: 1992, *Edutrends 2010: Restructuring, Technology and the Future of Education*, Starsong Publications, Mountain View, CA.

NEW KIDS ON THE NET

Deutschsprachige Philosophie elektronisch

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Abstract. The old, albeit hackneyed, computer expression 'GIGO' - Garbage In, Garbage Out - has been removed from vocabulary and rhetoric at a time when it seems most needed. The hype about the Internet has in fact created a new enchantment in Western societies. Dealing with the realities of virtual reality, however, will be a process of progressive disenchantment wherein the limits of communication and information as the essence of emancipation become clear. The Net, then, has attained a status much like God … before rationalization.

Interrogate the Internet

The Internet protocols offer several modes of global, digital data- transfer by procedures like telnet, ftp (File Transfer Protocol) or SMTP (Simple Mail Transfer Protocol).[1] Some modes are designed to enable exchange of information between single users or to allow access to remote operating systems. There are, on the other hand, a number of techniques specifically developed to support social interaction: "Chats" (Internet Relay Channels) or "MUDs" (Multi-User Dimensions). Mailing lists fall somewhere in between those two categories, basically building on the person-to-person SMTP, but enhancing it (often by extensive use of mail aliases) to establish electronic discussion groups. Discourse on such lists is generally more civil and substantive than on Usenet, but still considerably more chaotic than any traditional form of written public exchange. While chatters may open or close new "channels" at will and participants in Usenet's alt-hierarchy indulge in their freedom to create and discard any number of quixotic newsgroups, list-owners need some administrative support to install and configure the necessary

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[1] For technical information see Tanenbaum (1996). The motto is taken from Shields (1996, p.131).

software which makes for a comparatively stable, restrained communicative environment.

Mailing lists tend to be shaped by core groups of dedicated participants, developing their interests and opinions in front of a predominantly receptive audience of subscribers. A new kind of communicative praxis is established on top of some guidelines on how computers should exchange data: participation in quasi-instantaneous, globally distributed, non-hierarchical discursive interchange. Computer networks, as is well known, are not confined by any historical or geographical borders. As a consequence, the cultural impact of the technical devices seems to affect arbitrary collections of users availing themselves of the necessary equipment and know-how. One of the most dazzling experiences of communication on the net, it has correctly been pointed out, is its global egalitarianism. While it is true that large parts of the planet are still excluded and the predominance of the English language imposes important constraints on the participants, it is difficult to avoid an initial euphoria, a cosmopolitan state of mind, as one becomes familiar with a machinery that can support spatially unlimited cooperation between equals with a minimum of administrative overhead.

The rules of TCP/IP have been laid down in one country, at a particular time, under particular circumstances, but the scope of their application is universal. Their inherent capacity to transform information-exchange all over the world seems much more powerful than any special pleading in favour of local sensitivities. This way of looking at the Internet is, obviously, reminiscent of well-known philosophical debates centring on the universality of Eurocentric Reason. There is a tension, if not a paradox, in one country determining the address space for all of the world. Hegemonical attitudes are very much in evidence as the participants - government, big business and trans-national agencies - struggle for authority and their share of bandwidth. Appeals to "international standards" are often quite partial. But it is equally important to realize that nobody *forced* the Internet on the non-US part of the globe. The universalised rules of TCP/IP are acknowledged and, indeed, put to use, by numerous local communities drawing profit from international standards they have not, admittedly, been asked about.

My topic will be quite specific, namely an overview of German-language mailing lists in philosophy. The purpose of the discussion is, however, a more general one: to explore the tension inherent in implementing a tool for global communication in a very particular geographical and professional context. *give-l*, which ran from December 1994 to September 1996,[2] was the first attempt to establish an electronic discussion forum for German-speaking philosophers on the Internet and it exhibits much of the - slightly half-baked - enthusiasm I just

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[2] The list is archived at http://hhobel.phl.univie.ac.at/gl.

alluded to. Eventually *give-l* could not contain the contradictions between its naive universalism and its *de facto* clientele. A more discriminating approach seemed to be called for. My second focus will be the story of *real*, an e-mail forum intended to support lecture courses I gave at the Department of Philosophy at Vienna University starting in fall 1996.[3]

Methodological reflection had by this time set in and I shall report the consequences of a more sober approach to the technological challenge. *give-l* was a success while it lasted, *real* was sometimes lively, but very often sluggish and in constant need of prompting. These difficulties encountered with *real* will lead to a discussion of the inevitable disenchantment with de-contextualized, but necessarily local implementations of global communication software. A more pragmatic approach suggests itself. My third example will be *philweb*, a Hamburg-based list that has been very active recently.[4] The vast majority of its members are students of philosophy at various German universities. *Philweb* is a second-generation mailing list, sometimes containing echoes of foundational moments, but more often busy to explore the newly discovered opportunities. This talk will be a small-scale *Bildungsroman* starting with the blissful coincidence of the general and the particular and eventually leading to a more detached assessment of the prospects of an initial synthesis of technology and culture.

1. *give-l*

The designation "*give-l*" and the original purpose of the list are in themselves indications of the tension I have indicated. The acronym was supposed to stand for "Globally Integrated Village Environment", referring to a local Viennese research project trying to put Marshall McLuhan's ideas to the test. The list was established to support the activities of the research team and I spent some of my seminars discussing their agenda. The result was a strange mix between universal reach and local circumstances.[5]

Several scholars, searching the net for keywords like "global" and "village" were in due course directed to *give-l* -- only to be disappointed when they discovered that German was the dominant language on the list. English was also acceptable and was indeed used by some participants feeling more comfortable in their native language. Reading German was, however, a prerequisite of actively participating, a fact that had simply been overlooked when the acronym was chosen to attract an international audience.

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[3] Cf. http://hhobel.phl.univie.ac.at/real/realarch.

[4] For information see http://www.sozialwiss.uni- hamburg.de/phil/ag/philweb.html.

[5] Mitchell (1995) includes a fine phenomenological description of this feature of electronic agoras: pp.6-24.

It took list members several month to become aware of this dilemma and some more time until a new reading of give was proposed: "Gehirne in vollem Einsatz" (roughly "Brains giving their best"). This playful echo of the original meaning of the list's name did not, however, remove a more fundamental ambivalence acutely felt at the time. Viennese students were all of a sudden exchanging their opinions and pursuing their academic curriculum in front of a word-wide audience. Describing the situation in these terms might sound unduly pathetic. Still, I want to argue that the description is -- up to a certain degree -- legitimate. Compare the thrill of suddenly talking to 10,000 people over a microphone. An individual voice is suddenly broadcast by an enormously powerful medium. To disregard the fantasies such scenarios evoke makes for a severely restricted philosophy.

Foundational experiences are not for keeping, but neither are they just discardable by-products as history unfolds. Starting January 1995 a lot of traffic on *give-l* was concerned with administrative troubles as well as with several papers written on the occasion of a symposium sponsored by the City of Vienna. But there was a less pragmatic undercurrent: No one had done this kind of thing before.[6]

Some (largely implicit) account of what the activity amounted to was presupposed in our practice. In the background of computer-mediated transactions a proto-theory of mailing lists was taking shape.

I was, as it happened, at that time commuting between Essen, Germany and Vienna, using the list for some tele-teaching. The list itself eventually included about 150 persons of which approximately 50 were based in Vienna, often knowing themselves personally, e.g. from taking part in my seminars. Under these circumstances a certain technologically induced euphoria took hold of several contributors. It has often been remarked that e-mail combines features of writing and conversation, producing "texts" that carry some of the immediacy of face-to-face encounters. This feature was certainly appreciated, but another, more conceptual peculiarity of e-mail discourse impressed itself even more deeply on the group. Texts (or tele-events), when broadcast all over the world, often produce an inherently passive audience that has no choice but to accept whatever the distributors make available. Local meetings, seminars for example, provide opportunities to shape events in person. Technically speaking mailing lists are trivial extensions of SMTP, but they offer entirely new social dynamics.

The notion of a "global audience" has in the past, somewhat metaphorically, been applied to people reading their daily paper or sitting in front of television sets. With the invention of mailing lists the term can be given a much more literal meaning. Real-life audiences are distinguished from "audiences" in a derived sense by their member's actual awareness of each other. Public events

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[6] For an overview of the general principles of digital socialisation see N. K. Baym (1995).

in their most basic form demand bodily presence and enable people to react to each other's interventions spontaneously, whereas a media event synthesises numerous single addressees into a more abstract social gathering. The mechanism of mailing lists, as it turns out, goes a long way to combine the requirements of global reach and local awareness. One might be able to watch one's neighbours watching TV, or notice the book one's friend just bought, but there is no way to know in general who, at a given moment, is watching a particular program or what persons are reading one's favourite book.

In contrast to this, every mailing list has a simple "review" command, enabling each member to automatically retrieve the names of all fellow-participants. This is, admittedly, not the bodily co-presence characteristic of on-location meetings, but it is one of its closest approximations by means of media-technology yet. Participants in mailing lists de facto know precisely whom they are addressing themselves to and they know that those addressed know that they are noticed in this way. Furthermore, if the system works, electronic mail is practically simultaneous on a global scale, so that responses to a message can in principle be given in real time. A group of people might be dispersed all over the planet and still each of its members can know of each other, address the group at any time and receive instant feedback, which is itself subject to quasi-immediate comment. As these possibilities dawned on some of the members of *give-l* exchanges on the list acquired an importance far exceeding the issues at hand.

For a time it seemed that one could have the best of two worlds: instantaneous social interaction without bodily presence.[7] Key members knew each other and physically met; still they were thrilled by the opportunity to communicate via e-mail messages, sometimes sitting next to each other in the computer lab. Their real-life existence had somehow acquired an electronic supplement as their identity as participants on *give-l* exerted increasing influence on their actual life. I had loosely associated *give-l* with a seminar I held at the Department of Philosophy expecting it to enhance traditional forms of learning/teaching. But the list quickly developed into a melange of discussions only temporarily focused on single topics. High-quality contributions were running side by side with beginners' questions and silly comments, mirroring a student's checkered experience at an academic institution in a way conventional media are unable to match.

Inevitably, as a group identity was forged, a social hierarchy imposed itself on the participants.[8] This lead to predictable tensions on-line and in real life. One list member, to mention the most controversial case, intermittently attacked

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[7] Chris Chesher writes convincingly on *The Ontology of Digital Domains* involved in this experience (Holmes, 1997, pp.79ff)

[8] Robert Hanke uses categories proposed by Pierre Bourdieu to give an account of these developments: http://hhobel.phl.univie.ac.at/gl/gl9506/msg00062.html.

his fellows quite rudely, even though he could be seen a reasonably well-mannered, if idiosyncratic, student in the context of the seminar meetings. Knowing this person's peculiarities a majority was prepared to tolerate his transgressions on the list. But when newcomers from outside the local circle were also fiercely attacked the affair threatened to get out of hand and, after several warnings, I removed the offender from the list.

The consequences of this removal were dramatic and served as a first reminder of the more problematic aspects of on-line meetings. Two weeks after the event a member, resenting my decision, asked "whether all *give-l* members are fascists?" This provocative question shattered the (up-to-now) largely innocent preconception of a more productive, civil life in cyberspace, leading to a bitter flame war among several proponents. On reflection the reasons for this nasty confrontation turn out to be closely connected to the possibilities praised in my previous remarks. The questioner, actually a rather withdrawn, courteous person, was simply unaware of the impact a single word could have in an environment that carries no collateral information on the personal bearing and attitude of the speaker/writer. This sort of disembodiment is quite possibly a remedy against stifling prejudice, but it can also severely disturb social interaction.[9]

One ambivalent phrase, not embedded within the usual context of situated know-how, dropped into a digitally enhanced community, can trigger a completely unforeseen chain of reactions, possibly leading to the self-destruction of the group. Electronic communities are (somewhat miraculously) built upon transmission-techniques and words alone, and can just as easily be destroyed by hardware-failure or a single inappropriate utterance. Luckily, *give-l* survived this crisis and continued to provide a learning environment for many of its participants. When, for example, teachers and students at the University of Vienna went on strike against severe budget cuts proposed by the Austrian government in spring 1997 *give-l* featured some excellent conceptual and economic background-information as well as extensive discussion of the options facing the academic community.[10] Yet, after having run for over three semesters, the list showed distinct signs of wear.

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[9] On the issue of disembodiment compare Paul James and Freya Carkeek, *This Abstract Body: From Embodiment Symbolism to Techno-Disembodiment*, as well as Michelle Willson, *Community in the Abstract: A Political and Ethical Dilemma*? (Holmes, 1997). See also Featherstone and Barrows (1995)

[10] A chronicle of events and several political assessments can be found at http://www.univie.ac.at/philosophie/facts/sparfl/sparfl.html.

2. *real*

At the establishment of *give-l* all its members had shared a certain amount of curiosity and a fair measure of ignorance regarding the whole enterprise. As the list developed this background obviously changed. At the beginning the very fact of "being connected" was felt to be of overwhelming importance and mutual encouragement was as welcome as carefully prepared arguments. But the pursuit of academic learning and indulgence in the unconstrained voicing of opinions do not easily fit together. There were some attempts to impose a more conventional structure onto the discussion, all of which failed. Mailing lists, rather like lively meetings of friends, do not easily allow for this kind of administrative regulation. As a consequence contributors who had spent considerable energy in setting up a philosophical discourse gradually grew disenchanted, unwilling to deal with the concurrent "gossip" on a daily basis. With the original excitement subsiding a different arrangement was decided between the Viennese proponents of *give-l*.

The list was to be split in two, one part retaining the "brand name", offering a club-like atmosphere for students at the department, whereas the other part was meant to supplement my Viennese teaching, carrying theoretical discussions exclusively. The new list give, I am sorry to report, proved an instant failure. The special mix of personalities and mechanical gadgets that had produced and supported *give-l* could not be duplicated in this quickly changing area. The second list, *real*, proved more enduring. It took its name from the lecture course it was to support − "Wirklich, möglich, virtuell" − but there was also a hint at the list being more realistic regarding the possible functions of electronic discourse. Still, with a lot of interest in tele-teaching and experimental use of the new media, expectations were high.

"Virtuality" is an intriguing concept and *real* started with a prolonged discussion of how digitalised representation should be distinguished from "reality" and "possibility". The spectrum of contributions was fairly broad, ranging from physics to postmodern theory and self-referential comments on the "virtual" nature of the list itself. Cooperative philosophical explorations seemed to be possible within this framework. But when the topic of "virtuality", after two month' time, had lost its attraction, the list could not maintain its initial momentum. It did never, in particular, produce the kind of group-consciousness that had been a hall-mark of *give-l*.

The highlights of *real* occurred when, for some largely unpredictable reason, an issue or an event caught the imagination of some participants, leading to a short, intensive exchange which usually broke off as abruptly as it had begun. And when I tried to repeat my attempts at tele-teaching, arranging for two groups of students from Vienna and Weimar to share the list for mutual comments on lectures I had given in both cities, the proposal did not meet with

any significant interest. Mailing lists are, according to this experience, of only limited use in supporting comparatively high-focused academic cooperation. This seems to be the opposite side to their very informality. It is precisely because they enable people to react to other people's interventions quickly and spontaneously that they do not easily provide an environment conducive to doing "serious" philosophy.

My notions of seriousness can, of course, be challenged at this point. A certain species of "media philosophy" is intent on explicitly rejecting the traditional professional standards that I am implicitly invoking here.[11]

According to their pronouncements future philosophical efforts should make the most of multi-media, hypertextualized technology, breaking free from the confines of one-step-after-the-other linear argument. I do not deny the attractions of those manifestos and tend to follow their advice, once in a while. But I am not prepared to overlook the severe limitations imposed on academic endeavours by technologically mediated unconstrained exchange of opinions.

Mailing lists are a valuable tool as long as having an equal voice and communicating with a minimum of administrative hassle are the most important requirements. It is not impossible to employ them for bona fide educational purposes like tutorial guidance or careful slow readings of classical texts. Yet, the inherent egalitarianism of the procedural substratum of mail aliasing seems to be somewhat at cross-purposes with attempts to build the stable, mildly hierarchical structures known from ordinary teaching. Precisely because the usual framework of time and space is drastically altered and physical presence replaced by written communication the metaphor of an "electronic classroom" is of limited use. The hesitant conclusion from running *real* is, therefore, that it is probably a mistake to expect much philosophical content even from special-purpose mailing lists. Since this is a somewhat negative result the question of its relevance to the vision of a global, unrestricted, well-informed exchange of ideas naturally arises.

Questioning students about their reluctance to involve themselves with *real* produced some straightforward pragmatic reasons for the partially disappointing developments. In 1994/95 the World Wide Web had not yet achieved the overwhelming importance it was to reach by the second part of 1996 when *real* was started. To students fascinated by links, graphics and animation simple e-mail seemed somewhat austere and could not capture the imagination to the extent necessary to engage in prolonged philosophical dialogue. Confronted with a seemingly unbounded supply of intellectual free-ware most users found it increasingly difficult to concentrate on complicated issues when on-line. The omnipresence of web-browsers, most of them including e- mail functionality, overshadowed the notion of a mailing list which does not, after all, offer

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[11] Mark Dery (1996) has written lucidly on the post-modern rhetorics of Cyberspace.

anonymous surfing to the general public. Putting *real* on the Web did not, incidentally, help. Hyper-mail is helpful in making technical support accessible or in simply sharing some information with a broad audience. It is not, for this very reason, well-suited to the purposes I tried to put it to.[12] Such are the risks one has to reckon with when entering unexplored territory. But there is a more substantial philosophical lesson to be drawn from reflecting on the development of *give-l* and *real*.

In comparing the two lists some of the enthusiasm surrounding *give-l* can be seen from a different perspective. I have hinted at the ambivalent nature of exempting the body from what is otherwise a characteristically communicative setting. This holds for mailing lists (or chats and MUDs) in general. There is, however, an additional aspect unique to foundational moments in global electronic communication. When first confronted with a technical tool like the Listserv software an almost automatic reaction is to run together two different projections, namely the procedural advantages of the technology and its perceived usefulness to the particular situation one finds oneself in. Such technologies, at first encounter, present themselves as a hybrid between context-independent promises and very specific expectations. Typing at her keyboard a person can reach a global audience. I am not denigrating this hybrid form. It seems to me that, on the contrary, its power has to be acknowledged and its presuppositions have to be scrutinized.

One might say, tentatively, that an imaginary cross-fertilisation is at issue here. The rules of SMTP contain nothing to inspire widespread fantasies, whereas the fantasy of all the inhabitants of the planet communicating unrestrictedly has probably been around for as long as humanity itself. Inconspicuous moments like making an appointment at the computer lab, determining the parameters of a mailing list's configuration files, can, surprisingly, acquire pivotal importance by short-circuiting technological capacity and an external content that is imaginatively superimposed upon the working of the machinery. This is not, to repeat my point, meant to be a deconstruction of such incidents. Examining their inherent structure we learn about the force and the limits of attempts to install a computer-mediated space of Reason.

It is tempting to put the point in Hegelian terms: mailing lists exhibit the principle of widely-distributed, democratic, simultaneous discourse *an sich*, i.e. formally, by virtue of their technical definition. The corresponding philosophical notions remain, on the other hand, *für sich*, confined within the realm of theoretical design. In order for the promise to work itself out both sides would have to be mediated, exploring the power of operational, but abstract procedures to shape and transform imagination via actual discourse. This, of

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[12] For multi-media experiences cf. Chapter 7 in Jones (1997) and Barrett (1995).

course, is where the hybrid construction is put to a test it cannot possibly pass. Philosophical talk of rationality, generality and social symmetry is not meant to be taken in the literal sense a mailing list exemplifies. Some enthusiasts, it is true, start off with a simplistic understanding of terms like "universality" and "immaterial" -- their punishment consisting in having to deliver papers tracing their disenchantment. Yet, as Wolf Biermann, a German song-writer, put it in a different context: "Wer sich nicht in Gefahr begibt, kommt darin um." Not taking risks is living dangerously.

To mention a similar dilemma, it is, at a first glance, a very plausible proposition that Roland Barthes and Jacques Derrida (among others) are prophets of digitalised hypertext which neatly materialises their conceptual design. (Landow, 1994) But, taking a closer look, it becomes obvious that the architecture of a book like Roland Barthes' *S/Z* is completely foreign to the current realities of hypertext. Writing about "nodes" and "networks" in a traditional context is importantly different from designing HTML-pages and similarities between these two activities are extremely superficial. The meanings of the term "global" in the parlance of media theorists and philosophers are, likewise, related by family resemblance, at best. The general topic of this conference is the impact of globally distributed technologies on local communities shaped by history and custom. Some suggestions emerge from the preceding discussion.

With the benefit of hindsight it is comparatively easy to find a familiar pattern in my account of *give-l* and *real*. Life is not more enlightened since electricity is generally available and foreign countries are not necessarily better known to us since we can get there by plane. Continental philosophers have warned us all along against being fooled by formalisms devoid of content and even software designers are beginning to inquire after the needs of particular users before implementing their programs (Winograd, 1996). It seems to follow that the entire procedure − establish a mailing list, ask questions later − was misguided, a typical example of falling prey to mere appearances. I do not want to dismiss the charge out of hand and I certainly concede that I'd do things differently the second time. Yet, such more cautious approaches are themselves built on presuppositions that are at least as dubious as the myth of empowerment by mere technology.

Conventional wisdom has it that there is a realm of Science and Technology which holds great promise for mankind, even though it is simultaneously perceived to be a dangerous force, quite likely to trigger enormous devastation. In order to check the techno-experts we need prudence, the power of good judgement, the Humanities. This is because history and the Social Sciences teach us about the constraints every society and every cultural environment imposes on the machinery it needs for its survival. But notice the dualism deeply entrenched in this point of view.

The strategic recourse to the powers of the mind is, it seems to me, just as problematic as unguarded technophilia. In preserving a domain of detached reflection it simultaneously renders technology immune against any direct intervention. "Humanists" are not supposed to meddle with the formalism, their area of competence being the scholarly assessment of it's possible consequences. This attitude, I suggest, does not do justice to the way technological achievements capture our imagination and tempt us to explore their potential. It is impossible to discuss the problems that are obviously at issue here, so I will conclude this section with a one-sentence indication of my personal position: Philosophy disposes of an enormous amount of knowledge, some of which can well be put to unauthorised use by newcomers and even dilettantes as they take up a challenge previously unknown.

3. philweb

What I've been saying amounts to an extended answer to the following question that was put on several mailing lists dealing with philosophical topics on February 14, 1998:

> I wonder what are the main email lists for philosophical discussions. I am not looking for a specific topic, but philosophy in general. By *main* lists I mean lists where the discussion includes all kind of philosophies, as well as reference to what is going on today in the area.

As Jim Morrisson was singing in the late sixties: "We want the world and we want it now." This is not going to work, but it is not completely crazy either. I was surprised at the courtesy with which this inquiry was met, the sender simply being referred to some of the well-known listings of philosophical resources. On closer inspection, though, simple-minded interventions like the question quoted above raise more interesting issues. What are we to expect from the ubiquity of such naive enquiries? Can mailing lists overcome the constant danger of being deflated? Can philosophical activity be adjusted to profit from potential of permanent ad hoc disturbance?

One possible reaction is to settle for administrative information. *Philos-L* offers professional services to English-language philosophers and I have established a similar list (*register*) to serve the academic community in German-speaking countries.[13] But such undertakings, while clearly being useful, provide a very limited answer to the general worry. Electronically addressing the members of the profession is highly convenient and will undoubtedly become even more widespread in the future, but what about content? Will it be affected

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[13] http://hhobel.phl.univie.ac.at/register.html.

by its means of proliferation? It should, by now, be obvious that putting the issue in such general terms will only provide utopian (or dystopian) guesswork. The question's scope has to be restricted and I will base a tentative answer on my familiarity with the current employment of the Internet for philosophical purposes in Austria, Germany and Switzerland.

An increasing number of German-language universities is present on the Web, offering the usual set of information, including brief overviews of their departments of philosophy. There are approximately 70 home pages of philosophy professors, most of them embedded within the general presentation of their institution. Less than 20 of those home- pages contain more than a CV, a list of publications and a description of past and current interests. Some philosophical associations like the "Ludwig Wittgenstein Gesellschaft" or the "Austrian Society for Philosophy" are on-line and a number of publishing houses as well as academic journals supply electronic catalogues and indices. All of this pretty much mirrors the US-American situation, albeit on a smaller scale. But, turning the attention to cooperative projects, there are interesting differences.

Excepting Vienna University there have up to now been next to no attempts to take up the challenge of computer-mediated philosophy in an institutionalised, academic context. German philosophy departments tend to be quite hierarchically organised, unwilling and unable to quickly adapt to outside pressures and public expectation. On a more conceptual level, most of the established theories profess a distance towards mass media and the marketplace of ideas. Experimental electronic philosophy is, consequently, done by a small group of graduate students and people on the fringe of the educational system. The authoritative collection of digital resources in German-language philosophy is maintained by Dieter Köhler, a graduate student from Heidelberg, in his spare time[14] and one of the most charming sites, "Annette's Philosophenstbchen" is an open attempt to challenge the kind of philosophy usually done in academia.[15] Probably Germany's most noteworthy contributions to on-line life in philosophy have been provided by *Phil-Net*, a small group of students very loosely affiliated with Hamburg university.

I'll restrict myself to the mailing list initiated by the Hamburg group in May 1996, incidentally on the very same day that I launched *register*. After some initial confusions the list-owners reached an agreement concerning the respective profiles of their lists. *Philweb* was to cater for net-users and web-designers interested in applying new information technology to the field of philosophy. These aims were in line with several other *Philnet* activities like building a philosophical search engine and a text repository. The project had

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[14] http://www.rzuser.uni-heidelberg.de/ dkoehler/VirtualLibrary/14.de.htm.
[15] http://www.thur.de/home/annette.

difficulties in developing, there were few responses and traffic on *philweb* had virtually stopped when (in September 1997) all of a sudden the list exploded.

Two or three philosophy professors, several (graduate) students and some extra-academic participants had locked into intensive discussions and were producing considerable output on issues as diverse as "Realism and Anti-realism", "Consciousness", "Colours and Sounds", "Goethe" and "Bombing Iraq". This was not, I hasten to add, Usenet stuff, but more often than not carefully developed arguments taking note of other people's view, civil and enterprising at the same time. The spirit of the list can probably be best compared to that of "Philosophy and Literature", a list run at the University of Texas. But *philweb* had negligible institutional support and no pre-set agenda to begin with.

There is a certain irony in the fact that Georg Sommer, the spokesman of *philweb*, had not envisaged this type of philosophical discussion and had, in fact, withdrawn from the list at the time it was more or less re-invented in a new format. It took some administrative lacunae for the participants to realize that the list's owner was not even a member of the list any more. He had to be re-invited to give his opinion on recent developments. An understanding was quickly reached: list ownership passed to two of the participants and it was generally agreed to continue the list as a forum of prolonged philosophical brainstorming.

Free electronic discourse follows its own somewhat unpredictable laws and my guess is that *philweb* will not be able to maintain the impressive quality it had reached at the beginning of 1998. In this instance, as in the case of *give-l*, a surprising amount of cognitive energy was in evidence, strangely fused with excitement concerning technologies conveniently supplied by a computer lab. For an initial stretch of time philosophical activity, generously shared among the group, is oblivious to doctrines, curricula and grades. *Philweb*'s success will quite possibly be short-lived, but what kind of attitude is at work in such predictions? Mailing lists are, after all, neither hard-cover publications nor traditional social structures. The new kids articulating themselves on *philweb* should not be submitted to a set of criteria taken from quite different institutionalised settings. They will probably fail to get credits for their efforts, but their experiments in establishing a transitory, digitally distributed verbal agora cannot fail to affect the future of philosophical scholarship.

The feasibility of quasi-instantaneous, two-way global data-transfer in a public medium evokes, as all of you know, hopes of increasing democratic participation among citizens and within various organisations.[16] As this

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[16] Recent contributions to this topic can be found in Holmes (1997). Cf http://www.lcl.cmu.edu/CAAE/Home/Forum/report.html. See also http://www.univie.ac.at/philosophie/bureau/democracy.htm and my paper Could Democracy be a Unicorn? in Monist (1997), available on-line at http://hhobel.phl.univie.ac.at/mii.

miniature *Bildungsroman* draws to a close, one of its lessons is that, unfortunately, at this level of generality the desirable effects of each participant having an equal voice and basically similar chances to contribute to a common goal can not be separated from the nightmare of computer-mediated witch-hunts. Involvement in mailing lists similarly suggests that their procedural advantages, compared to traditional communication, can be a dubious blessing, provoking exalted expectations and impeding a sober analysis of how the new media might affect the Humanities. I have specified a more restricted terrain to begin to answer the question of the Internet's implications for philosophy. Scholarly work is, on the other hand, fairly rigidly determined by professional standards while, on the other hand, often characterised by a spirit of tolerance and mutual respect. Even though both *give-l* and *philweb* shared some of these qualities this was not their most important contribution to the issue at hand.

By shifting the ground from the classical manipulation of texts towards instantaneous textual publicity people writing on these lists changed some basic rules of literacy. Rather than being presented in curricular modules philosophy could be seen as a continuous group- activity, permeating the week in between classes, blending local settings and external interventions. Rather than following given institutional patterns such activities could arise (and disappear) spontaneously, un-coerced by efficiency testing and financial constraints. Such lists, to summarise, produce a new genre: semi- scholarly on-the-spot writing, transmissible across the planet. I did not, in this talk, present examples of how serious (or how annoying) electronic philosophical discussion can get at close view. Suffice it to say that the list's archives have been indexed by the big search engines and that the log-files show considerable interest in many of the issues discussed over the years. This is another prospect of things to come: continuous digital availability of day-to-day discourse. (I'll pass judgement of whether this is a good thing or a nuisance.)

None of this will change the merits of a single philosophical argument, but it might well contribute to shift the ground on which traditional philosophy itself rests. General principles and universal rules have always been prominent concerns for philosophers, even while their means of communication were quite specific: books, papers, lectures. This discursive frame has not been seriously challenged by the advent of mass media and one-way broadcasting. Neither the telephone nor TV has had any tangible impact on the way philosophy is done. There is a chance that the constitution of a permanent, communicative, electronic space and the development of virtual philosophical communities within this space will be of greater importance. Exchanging texts and arguments on an equal footing is, after all, an elementary philosophical gesture which will be heavily affected by the possibilities opened up by the Internet.

I have not hidden my ambivalence concerning promises of a digital wonderland and reviewing the dynamics of the mailing lists I have been talking

about the reasons for a skeptical attitude emerge more clearly. Some features of the new discursive forms are incompatible with the current educational system. Expecting strictly focused discussion within a 24-hours show is bound to prove disappointing. There is, on the other hand, no way to beat mailing lists when it comes to address a world-wide audience and (albeit in a rather specific sense) implement the principles of universality often discussed in philosophical treatises. Theoretical activities have, all of a sudden, become available within the framework of a mass medium and it is far from clear how this encounter is going to work out. The net is not the most natural habitat for German-language philosophers. It is, in fact, yet undecided who its typical inhabitants will turn out to be. In the meantime most are new kids, sporadically at unease and frequently sounding strange.

References

Barret, E. (ed.): 1989, *The Society of Text. Hypertext, Hypermedia, and the Social Construction of Information*, MIT Press, Cambridge, Mass.

Barrett, E. (ed.): 1992, *Sociomedia. Multimedia, Hypermedia, and the Social Construction of Knowledge*, MIT Press, Cambridge, Mass.

Barrett, E. and Redmond, M. (eds): 1995, *Contextual Media. Media and Interpretation*, MIT Press, Cambridge, Mass.

Biocca, F. and Levy, M. (eds): 1995, *Communication in the Age of Virtual Reality*, Lawrence Erlbaum, Hillsdale, NJ.

Cherniak, W., Davis, C. and Deegan, M. (eds): 1993, *The Politics of the Electronic Text*, Office for Humanities Communication Publications Number 3, The Centre for English Studies.

Dery, M. (ed.): 1994, *Flame Wars. The Discourse of Cyberculture*, Duke University Press, Durham, London.

Featherstone, M. and Burrows, R. (eds): 1995, *Cyberspace, Cyberbodies, Cyberpunk. Cultures of Technological Embodiment*, Sage, London.

Harasim, L. M. (ed.): 1993, *Global Networks. Computers and International Communication*, MIT, Cambridge, Mass.

Holmes, D. (ed.): 1997, *Virtual Politics. Identity and Community in Cyberspace*, Sage Publications, London.

Hrachovec, H. (ed.): 1997, *Monist Interactive Issue*, Volume 80.

Ihde, D.: 1990, *Technology and the Lifeworld. From Garden to Earth*, Indiana University Press, Bloomington, Indianapolis.

Jones, S. G. (ed.): 1995, *Cybersociety. Computer-mediated Communication and Community*, Sage Publications, London.

McLuhan, M. and McLuhan, E.: 1988, *Laws of Media*. The New Science, University of Toronto, Toronto.

McLuhan, M. and Powers, B. R.: 1989, *The Global Village. Transformations in World Life and Media in the 21st Century*, Oxford University Press, New York.

Mitchell, W. T.: 1995, *City of bits: space, place, and the infobahn*, MIT, Cambridge, Mass.

Nielsen, J.: 1990, *Hypertext and Hypermedia*, Academic Press, San Diego.

Olson, D. R. and Torrance, N. (eds): 1991, *Literacy and Orality*, Cambridge University Press, Cambridge.

Pressman, R. S.: 1992, *Software Engineering. A Practitioner's Approach*, McGraw-Hill, New York.

Shields, R. (ed.): 1996, *Cultures of the Internet. Virtual Spaces, Real Histories, Living Bodies*, Sage, London.

Talbott, S. L.: 1995, *The Future Does Not Compute. Transcending the Machines in Our Midst*, O'Reilly & Associates, Sebastobol, CA.

Tanenbaum, A. S.: 1996, *Computer Networks*, Prentice Hall, New Jersey.

Turkle, S.: 1995, *Life on the Screen: identity in the Age of the Internet*, Simon & Schuster, New York.

Winograd, T. (ed.): 1996, *Bringing Design to Software*, Addison-Wesley, New York.

ELECTRONIC MEDIA AND CIVIL SOCIETY

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In contrast to mass media, which established a kind of global public opinion, interactive media seems to support the development of *Teiloeffentlichkeiten* ("partial publics"), which are discourses characterised by context-specific argumentation strategies and special themes. We assume that interactive electronic media will not substitute for the traditional mass media, but will be useful for pre-institutional forms of public opinion, as they can be found in non-governmental organizations, community pressure groups, local activities and so on. Following this, electronic media will probably support movements of the so-called civil society.

The question remains still open, whether electronic media might help to find a more global political consensus within a society, by overcoming the discourse specific perspectives.

BUILDING CYBERSPACE

Information, Place and Policy

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Abstract. Information and place have always been linked. From prehistoric forest and hydraulic empire to canal network and the networked knowledge economy, the space of flows gives rise to the way human beings perceive the world as well as to the objects they perceive. The historical relationship between information and place is important in understanding Cyberspace as a space of information that reshapes our engagement with the physical world.

Information and Place

The purpose of this paper is to explore the ways that information and place interact. We will consider the ways in which information and place influence each other in the world today. On one level, this involves the way that the new information technologies affect our sense of place and space, and how they influence the policies we create to shape our environment. On another, and deeper level, this involves the ways in which the sense of place affects our way of understanding information. To understand this last, we must consider the ways in which place and space have shaped the way in which human beings know the world and themselves.

Indebted to Darwin

A creature swings through the branches of a tree. This creature has no sense of self. It might be male or female, but it doesn't think of itself that way. It hardly thinks of itself at all. What little thinking it does would not be recognizable to us as thought. Even so, this character is having a good day. The sun is up, food is plentiful and life is cheerful.

Here, in the branches of a leafy forest, light is a dull, rich green. The creature's eyes do well in this light. It sees everything going on around it, and it has reasonably good peripheral vision. Any flicker of motion at the edge of its peripheral range will bring a swift response to check on changes in the environment. Our friend will refocus swiftly to see what kind of threat or opportunity is about to enter its world. Thousands of sounds reach the creature's ears. These sounds help it to orient itself in time and space. They tell it what is going on in the world about. Sounds that have today's tone tell our friend that all is well.

The creature spies a tasty looking piece of fruit a couple of branches away. It skitters out to the end of a limb and leaps. Well equipped with stereoscopic eyes and depth perception, it orients itself properly in space, grabs the proper branch and gets the fruit it wants. If it remembers anything - which it may, in some rudimentary sense, be able to do - it might recall a cousin whose eyesight wasn't so good. That cousin didn't last long after leaving home. It reached for a branch one day, missed by a few centimeters and fell within reach of a hungry predator prowling the jungle floor. Our friend was terrified that day, climbing high and fast to get away from the commotion below.

The issue of depth perception never crossed its mind. Neither did any concept of its rich multiple sensory apparatus, senses that provided smell, taste, touch, balance and all the rest, along with sight and sound. This creature's sensory continuum was, in fact, one of the world's first attempts at multimedia. With a rich array of sensory tools fitted to the environment, the creature managed to survive and thrive. It passed these characteristics on to its offspring, and in that way shaped the ways in which its descendants would see and sense the world for millions of years to come.

This creature's ways of seeing and sensing eventually came together with a thousand and one further adaptations, some physical, some conceptual, and some in the final extensions of body and mind that we began to call tools when we developed language. Long before we invented tools and named them, however, these adaptations shaped a way of being and laid the basis for a way thinking. Many successful tricks of behavior and habits of mind came about by chance. Others were adopted by observation and analogy. Still others emerged through imitation in monkey-see, monkey-do fashion. One and another, these developments developed a creature that shaped itself and came eventually to shape the world around it.

I can't pretend to know that creature's name. If it had a name, it wasn't a name we'd recognize like we recognize Uncle Oliver or Aunt Eleanor. Even so, I know who that creature was. That creature was a distant relative of yours and mine.

The late avant-garde composer Nicholas Slonimsky told the story in one of his many almost-hit tunes titled: 'I owe a debt to Darwin. He made a monkey's uncle out of me.'

Our simian progenitor, whatever its name, was the genius of its genus. Everything we do from hearing tones to playing the piano to reading Slonimsky's sheet music is rooted in the physical adaptation to place that gave shape to our remote ancestor. So are our habits of mind, everything from the way we read these words and think them through to our ability to plan the environments we build. The characteristics our nameless ancestor developed in the course of its responsive adaptation to the environment made everything we do possible. In that sense, space and place shaped a great deal of human nature and in so doing, shaped the social world.

The Power of Place

Place - physical, environmental and context - have always been intimately connected with information. The very how and why of human knowing were influenced by place and space in the development of the human information and knowledge apparatus. The environment forms the context within which initially random adaptations create successful species. Success, in the sense of evolutionary development, is not purposeful. It simply means that a species is selected for survival by the environment on the basis of its physical and behavioural characteristics. Prior to human conscious adaptation, these characteristics generally developed through random genetic mutation. When a mutation proved well suited to the environment, the species survived and what had once been new genetic matter was inherited by descendants whose characteristics it defined. The human species and its predecessor species emerged in and adapted to a specific physical world. The physical world to which we adapted defined us.

Complexity theory (Aida et al., 1985; Casti, 1995; Waldrop, 1992) offers a rich series of explanations of how adaptation takes place. One of the salient paradigms of complexity theory is the notion of the way that complex adaptive systems shape their behaviour within what is known as a 'fitness landscape'. As complex adaptive systems fit themselves to the landscape, the context itself takes on different shapes and meanings. Complex adaptive systems include all biological creatures: plants, animals, individual humans. They also include the communities or societies that these creatures create. Their evolutionary paths move through time and history. Some vanish, others appear. Either way, there is no going back.

At some point in the relatively recent past, we developed the modern brain. The physical potential of this brain gave rise to our current habits of mind, the

habits that support our mental world. The forces that give rise to the modern mind go back over two and a half million years to the unknown moment when homo habilis manufactured the first tools. Four hundred thousand years ago, we manufactured spears. Forty thousand years ago, we moved up to specialized tools. It wasn't many thousand years before we were playing flutes, making art and manufacturing needles to sew the garments of the earliest fashion designers (Friedman, 1997, pp. 54-55; Ochoa and Corey, 1995, pp. 1-8).

We created the first external documentation and information systems some 20,000 years ago (Burke and Ornstein, 1997, pp. 29-30). Urban design and architecture came along some ten thousand years ago in Mesopotamia. Interior architecture and furniture design probably emerged with them. It was almost five thousand years more before graphic design and typography got their start in Sumeria with the development of cuneiform. Since then, it's been one innovation after another.

The externalized representation of knowledge through documentation and information created a new kind of human being. Even in the rudimentary form of what archeologists call the baton, a carved bone or antler, information tools began to 'reshape the way we think' (Burke and Ornstein, 1997, pp. 29-31). This was 'the first deliberate use of a device which would serve to extend the memory, because with it, knowledge could be held in recorded form outside the brain or the sequence of a ritual.' The relationship between these tools and the human mind is significant, in that 'the cognitive facilities needed to make the batons required a brain capable of a complex series of visual and temporal concepts, demanding both recall and recognition. These are exactly the same mental abilities which are involved in modern reading and writing.'

Defining the Terms of Discourse

One of the difficulties we typically encounter in the emergence of a discipline or a new conceptual framework is the use of terms. This is a particularly subtle problem since many terms in natural language are built on their relations one to the other in a recursive cycle of interdependent meanings.

To understand the way that information and knowledge influence shifting social patterns in an era variously called 'the information age' and 'the knowledge economy', it is helpful to conceptualize the several levels of data, information, and knowledge. Here, I will set forth some of the basic definitions of the words we will encounter in any discourse of information, place and policy. To make them manageable, I will attempt to structure a delimited meaning of the terms as I will use them, creating a hierarchy of meanings that rise from (1) the phenomenal world through (2) specific perceived facts taken from the physical world in the raw form known as data, through (3) data

structured and organized into information, which are, in turn, imbued with meaning to create (4) knowledge. Finally, I will raise the issue of a level of effective knowledge generally known as (5) wisdom.

It should be noted that the fuzziness of these terms makes it possible for other scholars to use the same words in somewhat different ways while attempting to articulate significant similar concepts. I will hold to the structure I present here, supported by a reasonable series of definitions.

On the first level, we find the world of phenomena, perceived and unperceived. The world of unperceived phenomena lies outside our consideration.

The perceived world generates data. Data can be described as facts used for reasoning, discussion, or calculation. It is also the information output of any sensing device or organ, and it may be useful or irrelevant, even redundant. Data also includes numerical information that can be digitally transmitted or processed. The salient feature of data is that it is raw information, unprocessed and therefore devoid of meaning (cf: Merriam-Webster, 1993, p. 293).

Data must be processed to be meaningful. Raw data are processed by the biological or mechanical apparatus. This translation gives them shape or form. Data, thus formed and given structure, become information.

Merriam-Webster defines information as:

> … 1: the communication or reception of knowledge or intelligence 2 a (1): knowledge obtained from investigation, study, or instruction (2): intelligence, news (3): facts, data b: the attribute inherent in and communicated by one of two or more alternative sequences or arrangements of something (as nucleotides in DNA or binary digits in a computer program) that produce specific effects c (1): a signal or character as in a communication system or computer) representing data (2): something (as a message, experimental data, or a picture) which justifies change in a construct (as a plan or theory) that represents physical or mental experience or another construct d: a quantitative measure of the content of information; specifically. : a numerical quantity that measures the uncertainty in the outcome of an experiment to be performed ... (Merriam-Webster, 1993, p. 599)

Closely linked to these definitions, we find a concept that has been linked with information throughout human history. The concept is knowledge. Information is formed, but it has not yet been endowed with meaning. Given form, data become information that, in turn, becomes a basis for knowledge.

The difference between information and knowledge is not always clear, but there are ways to divide them for the purposes of this study. Knowledge involves knowing something through experience or association and it is an acquaintance with or an understanding of any science, art, or technique. Knowledge involves being aware of something, and it describes the range or the limit of one's awareness or understanding. Knowledge is also the total of what

is known, the comprehensive stock of truth, information, and principles of the human species. It involves facts or ideas acquired by study, investigation and research, and it can be acquired by observation or through experience (cf: Merriam-Webster, 1993, p. 647).

Gregory Bateson defines information in a way reminiscent of physical potential. His definition can almost be considered in the same way we consider the energy potential of an engine or a hydropower installation: 'information is any difference that makes a difference' (Bateson, 1984, p. 41).

Information is the potential to make a difference. The realized potential of that power is the difference between information and knowledge. This is so in the same way that water behind a dam represents the potential energy available for work while energy released as the water goes through the turbines is power. Frances Bacon, the sixteenth-century scholar and a founder of the scientific method, noted this difference in his Religious Meditations, Of Heresies, where he wrote that, 'knowledge itself is power' (in Mackay, 1991, p. 21).

Peter Drucker respects that difference, too, and describes the transformation of information into knowledge: 'Knowledge is information that changes something or somebody - either by becoming grounds for action, or by making an individual (or an institution) capable of different and more effective action' (Drucker, 1990, p. 242).

Choices establish the grounds for action. Choices are therefore the key to effective action. Here lies a difficult problem. We can't always choose until we know; we can't always know until we find ourselves in the appropriate situation that requires our knowledge; we can't always orchestrate the proper situation until we've chosen. Johan Olaisen (1996) effectively describes this situation in his analysis of the philosophy of science applied to information science. Olaisen's analysis outlines the challenges that every thinking person repeatedly confronts in the course of assembling the knowledge of daily life.

Olaisen states that one must navigate sensitively through four domains. The first is the domain of what we know that we know. The second is the domain of what we know that we don't know. Navigating the third domain is more problematic, since it requires us to work with what we don't know that we know. Navigating the fourth is the even more difficult, the domain of what we don't know that we don't know (Olaisen, 1996).
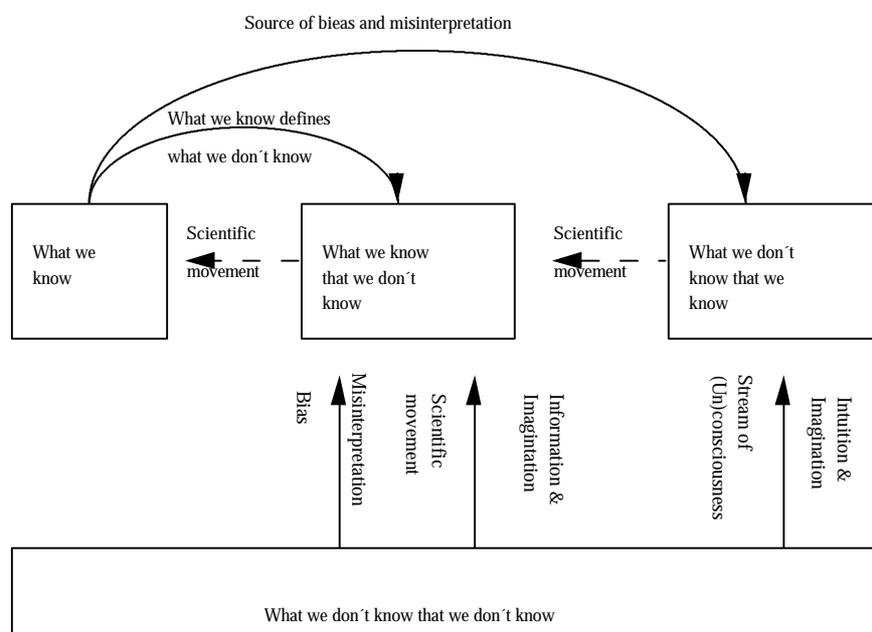
Figure 1. The scientific extension of human knowledge (source: Olaisen, 1996, p. 282)

Knowledge for effective action - including knowing when not to act - is wisdom. Wisdom has generally been a respected word in philosophy and theology. Scientific literature has shied away from it. Perhaps this is so because wisdom is located in the subjective mental processes of the human organism, either in the individual mind located in a single physical body or in the social mind located in a sociocultural body such as a tradition, a society or a community. The problem for many scientists is that these bodies of wisdom resist quantitative investigation.

Further, wisdom can be intensely personal, located at the boundaries of such existential and culture-bound concepts as authenticity, personal truth, or integrity. Even so, wisdom is the subject of a growing body of contemporary literature. It began in fields such as philosophy and psychology (Jourard, 1964; Maslow, 1962; Moustakas, 1967; Watts, 1951). It has extended to information science, informatics or social informatics (Johannesen, 1996; Olaisen, 1996).The concept has also become the subject for scholars in organization and management studies, those branches of scholarship most concerned with the consequences of effective decision making, and scholars in these fields are examining the question of wisdom.

Some scholars focus on knowledge management (Alvesson, 1995; Davenport and Prusak, 1997; McGregor, 1991; Myers, 1996; Nonaka and Takeuchi, 1995). Others study hybrid capital, the multiple and sometimes ambiguous forms of capital that include liquid capital, capital assets, human capital and the various forms of capital represented by processes, ideas, values and relationships (Hedlin, 1996; Polesie and Johansson, 1992). Intellectual capital is the frame of an increasing body of current literature (Brooking, 1996; Edvinsson, 1997; Fruin, 1997; Klein, 1997; Stewart, 1997; Sveiby, 1997). Some scholars even address the specific issue of managerial wisdom (Malan and Kriger, 1998).

Wisdom is knowledge made effective through integrated learning, values and action. It requires the ability to discern the qualities and relationships among things known and it demands insight. Wisdom is characterized by good sense and good judgment (cf: Merriam-Webster, 1993, p. 1358).

Place as Carrier of Information Traces

Space and place have always been linked with information. At first, place and space told us about themselves and served as their own maps. These

internalized maps were rooted in the landscape as the tangible factors that built our cognitive apparatus. Bruce Chatwin's Songlines (1987, p. 269) offers an example that reveals the way in which place shaped knowledge:

> The 'dry heart' of Australia ... was a jigsaw of microclimates, of different minerals in the soil and different plants and animals. A man raised in one part of the desert would know its flora and fauna backwards. He knew which plant attracted game. He knew his water. He knew where there were tubers underground. In other words, by naming all the things in his territory, he could always count on survival …

Issues of place affect more than the first peoples. They have affected the flow of civilization itself. We will return later to the questions implied by naming, that is, the question of mapping and representation. Here, we will consider the social structures and behavioural patterns that influence and arise from place in terms of their relationship to information.

Cities - like all human organizations - can be seen as information processing systems. The first cities emerged some ten thousand years ago. They began as villages and small conglomerations of people living near a cluster of farms. These conglomerations often became the focus of specialized skills and services, where the work of a specialist might be too much to supply any single farm but the specialist workers and craftsmen as a group together could well supply skills and services to a number of farms or communities around. They grew into towns and then into cities as societies grew larger and more complex, as social and cultural needs demanded more and more service, as the number and kinds of jobs began to proliferate requiring other and further kinds of services and workers to support them.

Cities were invented by a new kind of human being. This human being shifted from a hunter gatherer life or a nomad herding life to a life in one place as a result of the first agricultural revolution. The villages, towns and cities this revolution brought about created new societies and new behavioural patterns as a result of the systemic adaptive opportunities and demands that arose in response to a new kind of social complexity. These were the earliest traces of what has become modern information society. The new opportunities offered by the city enabled the management of large-scale agriculture, defence, commerce, communication, and transport.

Place also affected the way that human society moved, and many of those early traces remain as influential today as they were millennia ago. Consider, for example, the way in which the shape of the land so often affects boundaries, transport and the forms of human commerce that flow across and use them:

> Large rivers, highland barriers, dense forests form 'natural frontiers' with which, over time, political boundaries tend to coincide; the gaps between them are avenues along which armies on the march are drawn. Once through such gaps,

however, armies rarely find themselves free to maneuver at will, even if no obstacle stands in their way. A more subtle geography comes into play, reinforced by climate and the season, and adapted by the road-maker and the bridge-builder, even if not by the fortification engineer. Thus the German Blitzkrieg into France in 1940, apparently an unconfined romp across open country once the tanks that led it had broken the barrier of the Ardennes forests and the River Meuse, turns out to have followed very closely the Route nationale 43, which for most of its length is the Roman road laid out soon after Caesar's conquest of Gaul in the first century BC. Neither the Romans nor those who built on their work made a point of quarreling with geography; we may infer, therefore, that the German tank commanders, whatever their illusion of pursuing a free trajectory, were in fact obeying topographical dictates as old as the last reshaping of the earth's surface in northern France, laid down at the retreat of the glaciers 10,000 years earlier. (Keegan, 1993, p. 71)

Space and place establish behavioural constraints. In one way, these constraints can be considered information. The well-known phenomenon of an incomprehensible bottleneck in a traffic flow is a perfect example. This often takes place at a site where an accident occurred or another obstacle recently took shape. Traffic slows down at the point of the accident or obstacle. Even after the damaged vehicles are pushed aside or the obstacle has been removed, traffic flow slows down at the point of the accident or obstacle, a behavioural constraint imposed by the flow of information that was once useful. The traces of this information remain in the system long after its uses are gone, sometimes causing distorted traffic patterns for hours after the wreckage has been cleared. This invisible behaviour becomes visible behaviour when we find ourselves slowing down at some point in the road that seems no different from the points before or after, nothing - to us - but a momentary and apparently meaningless jam in the traffic.

We see it, too, in the unplanned paths that emerge on every college campus and every major city park. Some of these patterns have existed for millennia where goats and sheep once went to ford a long-vanished stream. Others emerge when impatient students and faculty establish their own short-cut between two much-travelled points on a campus, breaching the tidy green of a well kept lawn. This behaviour irritates gardeners and gives birth to the annual memoranda on the subject of using sidewalks that all members of a college cheerfully ignore. Nothing less draconian than the Code of Hammurabi would prevent the development of unplanned paths, and few deans or park directors are permitted the use of capital punishment. One thing seems as likely a universal fact as can be found: if the eight-century university at Salerno had a quadrangle, it also had an unplanned path between the Department of Norman Studies and the Alchemy Lab.

Place gives shape and form to our behaviour, and it gives shape and form to our ways of thinking. This in-forming of thought through behavioural pattern in

the physical world was the first form in which pre-humans obtained information. The in-forming of thought in the physical world is still central to the relationship between our mental constructs and our behaviour, between our mental constructs and the physical worlds from which they arise, between our mental constructs and worlds of idea and experience they represent.

Habits of Mind

The Greek poet Simonides (556-468 BC) is reputed to have invented the art of memory (Boorstin, 1985, pp. 480-481; Rose, 1992, pp. 62-63; Yates, 1992, pp. 17-18). Simonides is also the first poet to have been paid for his services. In *De Oratore*, Cicero recounted the way in which both of Simonides's inventions came together. Simonides attended a banquet hosted by a noble of Thessaly. He had been hired to compose a panegyric in honour of his host. In this poem, he included a long passage honoring the divine twins, Castor and Pollux.

When it came time to pay, his host announced that since half the poem had honoured the two gods, he would pay the poet only half his fee. It would be up to Castor and Pollux, the host announced, to pay the balance.

Soon after, a message was delivered to Simonides that two men wanted to see him outside. He went out to speak with them. In his absence, the roof of the banquet hall collapsed, crushing the nobleman and all the other guests.

The corpses were so disfigured that it was impossible for the relatives of the dead to make the identification needed to bury the right bodies. Simonides, however, was able to help. He remembered by location which person had been seated at which place, and by mentally reconstructing the seating at the banquet was able to help relatives identify and bury their dead.

Afterwards, Simonides understood that he had been rescued from death by Castor and Pollux. This story offered three lessons. The first deals with generosity and the duties of a host. The second deals with proper honour to the gods. The third opened a new way of working, using place to anchor memory.

According to Yates (1992, p. 17)

> ... this experience suggested to the poet the principles of the art of memory of which he is said to have been the inventor. Noting that it was through his memory of the places at which the guests had been sitting that he had been able to identify the bodies, he realized that orderly arrangement is essential for good memory.

Cicero writes of Simonides that: 'He inferred that persons desiring to train this facility [of memory] must select places and form mental images of the things they wish to remember and store those images in the places, so that the order of the places will preserve the order of the things, and the images of the things will

denote the things themselves, and we shall employ the places and images respectively as a wax writing-tablet and the letters written on it'.

It is fitting that we best remember Simonides for his connection to a specific place. He wrote the epitaph at Thermopylae: 'Go tell the Spartans … that here, obedient to their laws, we lie' (Oxford, 1964, p. 502).

A century and a half after Simonides, Aristotle wrote that sequential memory was a paramount tool, stating (in Bailey, 1996, p. 64) that '... whatever has some order, as things in mathematics do, is easily remembered. Other things are remembered badly and with difficulty.'

Between Simonides and Aristotle, Socrates and his student Plato considered the issue of externalized memory in the then-recent technology of writing.

Socrates (Plato, 1998, unpaged) considered the problems of writing in his *Phaedrus*, where he describes the encounter between the god Thoth and the god Thamus. Thoth was a thinker: he had invented arithmetic, calculation, geometry, astronomy, draughts and dice. His great invention was the use of letters. He wanted to give letters and literacy to humankind
to make human beings wiser and to improve memory and intellect both.

Thamus was opposed to the idea. He opposed letters because he believed that letters would 'create forgetfulness in the learners' souls because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth. They will hear many things and learn nothing. They will appear to know everything and generally know nothing. They will be tiresome company, having the show of wisdom without the reality.'

Socrates's point was that writing 'pretends to establish outside the mind what in reality can only be in the mind ... writing reifies, it turns mental processes into manufactured things' (Rose, 1992, p. 62).

Socrates's view notwithstanding, it is this external characteristic that makes writing a powerful and useful invention. No longer is memory the key art in human thinking, and no longer are things remembered subject to the vicissitudes of biology, time and chance in the same degree as when memory was considered that art above all arts. While no externalized medium is perfect, the very act of externalizing writing and recording it gives memory a more stable quality than it had before. The human mind was freed for analytical work and many people were able to work on the same problem at the same time. This shift from an internal world to a distributed intelligence has characterized most of the great shifts of social patterns that accompany the new social technologies of communication. So, too, the pattern of telecommunication and information technology. The difference is that the new tools externalize farther and faster, and engage more people than ever before.

If, in other words, the text or document moves from 'mental process to manufactured thing', at the same time the ability of many minds to work together on the same problem - often at the same time - also strengthens the dimensions of the process itself.

Donald Norman (1993, p. 43) considers 'the power of representation'. He notes that 'the power of the unaided mind is highly overrated. Without external aids, memory, thought, and reasoning are all constrained.' He goes on to state that we have 'increased memory, thought and reasoning ... by the invention of external aids. It is things that make us smart.'

Norman (1993, p. 45) quotes Plato's *Phaedrus* (1961) to address the issue of critical thinking. Norman reaches an intriguing conclusion. While Plato's Socrates seems to be disturbed by the externalization of memory in the form of writing, one of his reasons is that it is impossible, as he sees it, to interrogate written text. Norman (1993, pp. 46-47) argues the contrary. Books make it possible for us to interrogate authors, to interrogate history, to externalize, represent and interact with ideas.

Socrates's putative method was not designed for a robust exchange among equals, nor yet for the proper development of critical thinking in the young. It was, rather, an induction ritual in which an older man raises up a younger man in his likeness or pointedly dissects the fallacies of those whom he considers lesser men for the rather showy benefit of his acolytes. In pedagogical tone, Socratic dialogue is a catechism masquerading as critical thinking. It more closely resembles the Sumerian priestly culture that we will consider later than it does the culture of critical inquiry to which it supposedly gives rise.

This is for good reason: it is the externalization of memory and the free application of minds to represented thought that permits the process of growth from data to information to knowledge. It is, finally, the free play of mind through which a scholar may critically engage many authors and pose them one against the next and any against any other. The purpose of teaching is to help students develop method for inquiry and master the arts of analysis, rhetoric and logic by means of which comparison and critical inquiry proceed. On this basis, pupils become students, students become scholars, and scholars becomes independent and reflective thinkers. Socrates's pupils may be informed - that is, Socrates may have shaped them - but they are unable to make knowledge their own.

The externalization of memory is a key point in several of Norman's books and papers. Most significant among them is his (1990) classic, The Design of Everyday Things. Here, he considers the relationship between external environments and our representations of them as a primary and far too often neglected factor in usability.

The value of the externalized memory seems so thoroughly an aspect of human behaviour that it can nearly be termed 'universal'. One professional has

tested this idea in as nearly a universal way as may be possible in today's world, developing a system of externalized memory for meetings and problem solving that he has tested in programmes involving men and women from over 240 different nations and territories. During his career as a strategy planner and process consultant in the telecom industry, Anders Skoe developed a series of problem-solving techniques that rely on the natural information-structuring capacities of the human mind. One of these is the use of flip chart sheets to track a meeting or problem in process. The difference between the way most people use flip charts and Skoe's system is simple but intensely effective. Rather than flipping each sheet which effectively conceals the contents of each past sheet as the meeting moves on, Skoe's system is based on tearing the sheets off during the entire process and posting them on the wall. This system forms an externalized group memory with several significant results.

First, the entire development and course of the meeting remains visible to all participants at all times. If a meeting runs several days, each day's flips are photographed with a Polaroid camera or digital camera for immediate printout by photocopy or PC printer. Skoe developed this technique in a specialized form now known as 'Instaminutes'. These Instaminutes permit new flip sheets to be posted during long meetings as wall space is used up while preserving the group memory in a form accessible to all. This leads to the second outcome, a perfect sequence of meeting records based on the real-time recording of information and process as it took place during the meeting itself. Since all transactions are recorded instantly and subject to immediate correction, no aspect of the process is lost. All facts are substantively visible and verifiable by all participants. For the first time in the corporate lives of most participants, meeting minutes are verifiable and corrected while the meeting is in progress. This means that no one need trust to memory for a proper record between meetings and it means that there is no need to correct and verify minutes at each subsequent meeting. This is externalized memory in its most pure form. The social dynamics that follow from this bring about a third key result. Data and information are common and lead to shared knowledge and better decision making.

It is not my purpose here to discuss this technique in detail. The point is to note the dramatic power of the externalized memory in an application conceived for human interaction that goes well beyond the power of interface and affordance. Interestingly, the technique was born in the urban planning profession. It began when two city planners were required to attend an extremely stressful meeting to discuss a neighbourhood transformation programme. To keep track of the events, they used huge sheets of butcher paper taped to the wall. They noticed that this technique enabled all present to track and follow the discussion far more effectively than most meeting techniques permitted. This brought about a far greater sense of participation and

understanding than normally possible, together with a richer sense of factual comprehension and common agreement on outcomes and results. This fortunate discovery became the core of what is now known as the interaction method. The method is described more fully in Skoe's works (1992; 1994; 1997; Nordby and Skoe, 1997), and in Doyle and Straus (1993).

Skoe himself has had the opportunity to test these methods across so many cultural groups that the claim of universality can be fairly well verified on an empirical basis. Between 1990 and 1998, Skoe conducted programmes for SITA, the International Society of Aeronautic Telecommunications. SITA is one of the world's largest telecom value-added private networks, serving the airline industry in every nation and jurisdiction served by the airline industry itself. During his work with SITA, Skoe conducted over 200 programmes with over 2,000 executives, managers and front-line professionals from 240 different nations and territories. He reports a common consensus on the value and outcomes of the externalized memory system. These findings were further verified in projects involving another 3,000 people conducted for Scandinavian Airlines System (SAS), the International Air Transport Association (IATA), the Norwegian national telecom authority now reorganized as Telenor as well as a host of smaller companies in the telecom, air transport and computer sectors.

Theatres of the Mind

The idea of an external memory goes back to classical antiquity. But if it began with Simonides, it took on new force in the Renaissance with the notion of the memory theatre and the memory palace. The memory theatre was a kind of building - a theatre, generally, with niches and places in which ideas could be placed just as Simonides located ideas in specific places. The rebirth of classical learning saw this concept take impressive hold among scholars, lawyers, rhetoricians and any who had reason to memorize large blocks of information. Some of the famous practitioners of this art were the scholar Erasmus, the alchemist Robert Fludd and the theologian and philosopher Giordano Bruno. This concept of mnemonic space evolved into a number of astonishing, elaborate systems. The most astonishing of these was developed by Matteo Ricci, a Jesuit missionary to China. Ricci offered entire 'memory palaces' to his hosts, as large and handsome and with as many rooms and hooks to hang ideas on as any individual might wish (Rose, 1992, p. 67; Spence, 1994).

In a sense, this art of memory was a way to structure knowledge. The issue of structured knowledge was so crucial to thinking, in fact, that an Italian who created physical memory theatres as an aid to learning the arts of memory was criticized by Erasmus for weakening the powers of mind that he purported to strengthen.

The art of memory can be seen as a metaphorical prelude to the issue of setting up a problem in the rudimentary forms of scientific method. This key to science was stated explicitly in the post-Renaissance rationalism of René Descartes, who 'was among the first to teach this idea: that the efficiency of information processing was contingent on how one set up the problem, and that how one set up the problem was in turn influenced by how one chooses to view the world. Viewing the world in ways that made the subsequent mental effort surer and easier was the essence of Descartes's famous Method' (Bailey, 1996, p. 65). The value of the metaphor is seen in Descartes's own statement that 'method consists entirely in the order and disposition of the objects toward which our mental vision must be directed if we would find out any truth' (Descartes, 1952, p. 7).

While there are sound arguments against the metaphor of the memory theatre as a prelude to the scientific method, there is no question that space and place function effectively to anchor information in the mind. It is not entirely possible to link the memory theatre to scientific method. Neither is it possible to accept the mystical claims that Giordano Bruno offered in his 1582 book on memory titled On the Shadows of Ideas, Circe. 'This is to form the inform chaos,' he wrote, '... it is necessary for the control of memory that the numbers and elements should be disposed in order ... through certain memorable forms ... I tell you that if you contemplate this attentively, you will be able to reach such a figurative art that it will help not only memory but also all the powers of the soul in a wonderful manner' (Bruno, in Boorstin, 1985, p. 486).

From Memory Theatre to Social Technology

At this point, I want to leap forward in time from the world of the memory theatre to the world of today's advanced information technology. This is a world of real memory devices, devices that translate memory into storage and transmission, and it is a world of a new-created inner space in which real-time interaction takes place along with the transactions of memory.

Giulio Camillo built a physical memory theatre of wood, filling it with physical artifacts intended as mnemonic devices. This was the project that Erasmus criticized (Rose, 1992, p. 68). One can imagine the perspective Erasmus might have on internet and cyberspace: scepticism and enthusiasm both seem likely, and for many of the same reasons any reasonable person must be both sceptical and enthusiastic about this new realm. Under any circumstances, it is a new realm, and to realize the value of cyberspace, one must realize the reality of cyberspace. It is a non-corporeal space that has physical ramifications.

Camillo's project was a false model made physical, devaluing the project of the memory theatre by reifying in physical form what was never meant to be physical. The entire programme of the memory theatre was a mental programme. Its goal was to permit any individual to carry a theatre, a palace, a world within the mind, taking it out for display and use whenever and wherever the user might wish. A physical memory theatre would hardly serve that purpose. Much like a map in one-to-one scale, the physical memory theatre would be so cumbersome that it and that to which it pointed would be identical and either would obviate the need for the other. A one-to-one map would hold the space it represented without the genuine sights, sounds, tastes. This is sometimes valuable in modelling, but not for most mapping. Camillo's theatre would be even worse. It would do more than merely replace the reality of ideas with all the internalized sights, sounds, tastes, and experiences that ideas represent. It would also take far more space than the ideas to which the physical template of the memory theatre offers a purported key.

Cyberspace is quite the contrary. It does not and cannot replace the physical world. Even so, it is a world of its own, a world keyed to the other worlds of idea and information through which we move. This has always been the case with human communication technologies and information technologies. This is so because they exist - and have always existed - in mind, in culture and in society as much as in the physical world.

Like all technologies, information technology is as much a social phenomenon as a technical development. The realization that all technologies are social in origin and in influence is a key issue in the writings of the French philosophy of history known as the 'Annales School' (Braudel, 1979, 1992a, 1992b, 1992c; Braudel and Matthews, 1982; Bloch, 1982, 1988; Febvre and Martin, 1997) . In the Anglophone world, the same issue has been explored by scholars in material culture and the history of technology (Flichy, 1995; Gimpel, 1992; Landes, 1983; McNeill, 1984; Needham, 1965; Needham, Ling, and de Solla Price, 1960; Ochoa and Corey, 1995; Pacey, 1992; Petroski, 1994), business history (Chandler, 1977, 1994; Drucker, 1990; Mokyr, 1992; Rosenberg and Birdzel,l 1986; Zuboff, 1988) as well as by those grand-scale thinkers whose frame - like the Annales School - is the progressive sweep of human social development (Bell, 1976; Boorstin, 1985; Rifkin, 1987; Schumpeter, 1981).

The social phenomenon emerges in our lives and our vocabulary under such rubrics as 'information society' and 'knowledge economy' and it is visible in a new conceptualization of social interactive space defined as 'cyberspace.'

Understanding the world of cyberspace requires many approaches, the multiple views that McLuhan labelled 'probes'. The metaphors of cyberspace are both spatial and mental. One of the best was coined in the early 1960s by Fluxus artist and poet Jeff Berner. He saw the world of inner space as a physical

metaphoric realm, and those who explored this realm, he said, are astronauts of inner space (Berner, 1965). The metaphor, originally constructed for an era of philosophical and psychological exploration, works well for the era of cyberspace. Many of the metaphors of the 1960s that have been translated into cyberspace were originally created for Zen culture and beat culture, Fluxus and intermedia, happenings and even psychedelics. The most robust survival traces back to Nam June Paik (1964, 1974). Well known as the George Washington of video art, he is also a distinguish thinker on media culture and mass communication. His metaphor of the 'electronic superhighway' was based on the United States interstate highway system and gave rise to such terms as 'the information superhighway' and 'the infobahn'. While he wrote with a revolutionary concept of television, Paik's conception of the new media society was rooted in a deep perception of Buddhist theology and the Hindu metaphysics that preceded it. His famous statement, 'We are in open circuits' (Paik, 1964) describes a reality equally applicable to the 24-hour, point-to-point, parallel path linkages of the World Wide Web.

Stephenson (1992) posited what he termed 'the metaverse,' a kind of cyberspace world that could be considered a glorified chat room with total-body surround made possible by sophisticated system of earphones and goggles that allowed individuals to live and act in a cyberspace peopled by iconic representations known as 'avatars,' a term that Stephenson coined to denote the self-selected images people could select or create to represent their personae and enact their deeds in the cyberspace of the metaverse. These avatars could be crude artifacts with little reality, rented by the hour. In appearance these down-market avatars are somewhat wooden icons like those we use today. They could also run all the way up to dramatically realistic or specially constructed representations created by talented hackers either for their own use or for sale to wealthy clients.

Stephenson later (1995) extended the metaphor to embrace a matter-management system in which feeds of data were used to shape raw, recyclable material into any desired form. Raw material was delivered in huge pipelines delivered to cities, societies and nations through a sophisticated future plumbing system. The real cost of anything in that world would be locked up in the software, the data and information around which any artifact would come to be structured.

Dan Simmons (1990, 1991, 1996) extended the concept in a different direction in his notions of the datasphere, the megasphere and the metasphere. The datasphere is the world of data surrounding a planet and through which all the planetary information flows. Linking many planets was a future telecom system equipped for transporting bodies and physical artifacts telematically as well as for communication of the sorts of information we can transmit today. The megasphere is the linked universe of many dataspheres, structured through

the world of instantaneous universal transmission. The metasphere is a mysterious, remote world operating above the megasphere, constructed and peopled by the artificial intelligences to whom the megasphere gave rise. The metasphere is nearly inaccessible to normal human intelligences, and it takes on somewhat divine or heavenly characteristics.

All of these, however contemporary or futuristic, draw their intellectual charge from the linkage between information space and physical place. For the reader, they draw their emotional and affective charge on the imaginary play of what it might be like to inhabit these worlds and travel between them ... and from the puzzles and paradoxes that we can imaginatively understand from an intellectual view of those future worlds contrasted with our physical and emotional understanding of the world today.

Information Places

Human beings have feared the conjunction of intelligence and physical place since the earliest times. One wonders if this is an echo of the love of a free life in the forest of our tree-dwelling ancestors and the later forest and savanna life of our remote humanoid forebears. Whatever the reason, the conjunction of intelligence and place has something to do with the cultural taboo against abandoning nomad ways for the tradition to city life. This is the Babel story.

As the Bible tells it, the nations of earth spoke once spoke a single language. The ability to communicate made cooperation on major technological programmes possible, a situation much like the use of Latin and later German as languages of science and technology, replaced today by the expanding use of English (Friedman 1995b). This use of common languages has always accompanied the growth of empires, and the concentration of knowledge, power, and economic force have always been paralleled by a concentration of cultural influence and language. In a sense, the space of flows can be said to have been established by the great hydraulic empires of the Asia - Middle East and Far East both - and of Egypt. In those days, however, the flows were the flows of water, carrying people, cargo and influence while making life possible through the flow of agriculture, government, commerce and military might.

This life was a dramatic contrast to the nomadic life of the monotheistic nomads. The city itself was the emblem of this threat. The urban dwellers decided to 'build us a city and a tower, whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth' (Genesis 11: 4)

When the Lord saw this, he perceived it as a threat, not merely to his majesty in the heights, but to the very order of things. A tower that could pierce the heavens represented influence and majesty, and a city, a civilization able to

build such a tower could accumulate to itself power over the space of flows, a space previously dominated by the Lord of skies and rivers.

> "And the Lord said, Behold, the people is one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do. Go to, let us go down, and there confound their language, that they may not understand one another's speech. So the Lord scattered them abroad from thence upon the face of all the earth: and they left off to build the city. Therefore is the name of it called Babel; because the Lord did there confound the language of all the earth: and from thence did the Lord scatter them abroad upon the face of all the earth." (Genesis 11: 6-9)

Woven into the dense fabric of this myth are four parallel themes. First, that technological cooperation requires a common language. This story echoes the pastoral stories of a common human heritage. It prefigures the project of a universal language and it bespeaks the common languages imposed on great empires. But it also speaks of a state of innocence, suggesting that those who share a common language are known to each other and acceptable to the Lord. The second theme is that through common language and cooperation, mankind generates knowledge. This knowledge is both godlike and a possible affront to God himself. This repeats the theme of the Eden story in another shape, and mankind is once again subject to punishment and exile for challenging the majesty and knowledge of the Lord.

Whether externalized in the form of letters or in the form of architecture, there has been a strange taboo against externalizing knowledge, a taboo that has also been a fascination. One wonders, perhaps, whether the issue is not so much a question of becoming god-like as it may be a fear that our creations will externalize and adapt us. In other words, a fear closer to the fear we feel for Frankenstein's monster than the fear we feel at daring to become gods.

Neal Stephenson's (1992) engaging cybernovel *Snow Crash* is built around an almost Biblical idea, pre-Biblical really, an idea anchored in the mythology of the Sumerian civilization. In this world, 'Primitive societies were controlled by verbal rules called me. The me were like little programs for humans. They were a necessary part of the transition from caveman society to an organized agricultural society. For example, there was a program for ploughing a furrow in the ground and planting grain. There was a program for baking bread and another one for making a house. There were also me for higher-level functions such as war, diplomacy and religious ritual. All the skills required to operate a self-sustaining culture were contained in these me, which were written down on tablets or passed around in oral tradition. In any case, the repository for the me was the local temple, which was the database of me, controlled by a priest/king called an en. When someone needed bread, they would go to the en or one of his underlings and own-load the bread-making me from the temple. Then they

would carry out the instructions - run the program - and when they were finished they'd have a loaf of bread' (Stephenson, 1992, p. 370).

For Stephenson's Sumerians, the 'word for "mind" or "wisdom" is identical to the word for "ear". That's all people were: ears with bodies attached. Passive receivers of information.' (Stephenon, 1992, pp. 371-372). The first, prehistoric hero of Stephenson's novel is a revolutionary en named Enki, not merely an en who received, controlled and passed on the me, but an en who himself could write new me. In Stephenson's (1992, p. 372) terms, he was 'a hacker. He was, actually, the first modern man, a fully conscious human being, just like us.'

Consciousness, in effect, arises from the ability to externalize which itself encourages the analytical senses. But Stephenson's Enki touches off a cosmic war that lasts down to our own era. This conflict is laden with the classic themes. These themes include the agricultural and city-building themes of hydraulic engineering and the classic Bible themes of knowledge, evil and sex. The exchange of bodily fluids links hydraulics and mythology into a post-modern narrative of a primal Prometheus figure.

This theme is the essence of Roger Shattuck's (1996) book, *Forbidden Knowledge*, an exploration that runs 'from Prometheus to pornography', and explores the themes of 'knowledge, curiosity, sexuality, the origin of evil and morality' (Shattuck, 1996, p. 15). Shattuck reminds those of us who have grown up watching the recent version of Frankenstein that it was not the monster played by Boris Karloff or Robert De Niro who was the threat to our better nature, but Dr. Frankenstein. Mary Shelley titled her original book, Frankenstein; or, the Modern Prometheus.

Our greatest and most original sinners have committed the sin of seeking knowledge: Prometheus, Eve, Faust, Frankenstein. Sex was not the original sin. Adam and Eve were not expelled from Eden for sexual crimes. They were expelled because they sought knowledge.

In writing the eviction notice, God said, 'Behold, the man is become as one of us, to know good and evil' (Genesis 3: 22). We read in God's words the notion that Bacon (in Mackay, 1991, p. 21) echoes: 'knowledge is power'. The grand sinners sought knowledge. More than this, they sought to externalize knowledge, place it in human hands and subject it to human control.

Plato's Socrates was a primitive, a traditionalist who acted as though he believed that wisdom belongs to an elite few who develop their wisdom through conversation and tutelage at the feet of the elders. If Socrates was a lover of wisdom, he was no democrat and neither was Plato. (It is sometimes forgotten that Socrates was accused not merely of corrupting the youth, but of fomenting treason against the Athenian state, and he was not condemned to death, but given the choice of death or exile.) Socrates believed in the priesthood of knowledge, and like the Sumerian *en*, he felt that only the priesthood could be trusted with the me on which civilizations are built. Enki and Thoth, on the

other hand, were early Luthers whose goal it was to place the sacred word in the hands of every citizen, noble and common, male and female alike.

One may, indeed, question Frankenstein's sin - the sin of seeking eternal life - but the rest of the great sinners and problematizers, from Thoth and Prometheus to Enki and Luther they sought knowledge and sought to distribute it widely.

The great library at Alexandria was a museum, a temple and university rolled into one. It is not coincidental that the pyramids and the first temples were places for the storage and transmission of information. The Masonic craft of building cathedrals had a great deal to do with coded forms of information. Masters, journeymen and apprentices created the codes through their work. They also created the coded forms of information, the data storage and transmission systems passed the encoded information onward through statuary symbolism, labyrinths, the icons and images of altars and widows and more.

The first global economy was the economy of the church, a force that spread over the boundaries of nations and of empires. Today's distributed multinational corporations echo the large transactions of the great religions. The transmission points - churches, temples, mosques - link the physical and the informational.

Just as place and information are linked, so are places and feelings. Effective information structure draw on both. Thus it is that intelligent correspondence mimics conversation. In the world of e-mail communication, there was a brief attempt to transact feeling through the use of those cheerful little character constructions known as 'emoticons'. The idea was the emoticons would help where mere words didn't.

From my perspective, this was a mistaken view based on false analogies. Words alone can, indeed, convey emotions. They do so through description, through mimesis, through the use of human intelligence to construct an empathic understanding of the world experienced by others when described in common vocabulary. Shakespeare, Sophocles, and Ibsen all communicated through words. Even more to the point, all three found and find audiences among those who have not seen their plays. I have seen a number of Sophoclean tragedies and I have been deeply moved. I have read them all, and feel myself into the world of the protagonists every time. I have seen half a dozen Shakespearean plays live and two or three on film. I have read them all and lived the world of the actors.

Writers from Homer and Snorre Sturlusson to Søren Kierkegaard and Ursula Kroeber LeGuin understand the magic and the power of words. Effective on-line communication mirrors face-to-face communication just as effective letters do. The failure of much on-line communication lies not in the weak powers of the medium of words, but in the fact that the instantaneous speed with which one can send and reply to e-mail sometimes give rise to laziness. The cure is time, and many good e-mail correspondents actually write their documents in a

word processor program as they would write a letter, developing, changing, editing, and polishing, before copying the letter into an e-mail document for posting.

In text and in thinking both, good information is like good art and good science. It reflects reality. The virtual reality of cyberspace is based on the physical reality of the space into which our physical bodies are born.

The cityscape and the landscape are the physical spaces within which cyberspace is anchored. The space of flows moves through channels of communication laid down by geography, and if the space of flows contains neither odour nor taste, it bears language and culture together with sight and sound.

Cyberspace is also coming to influence the physical world as the concept of interaction between physical space and conceptual space becomes ever more visible. One example is a recent conference titled 'Scripted Spaces' at the Art Center College of Design in Pasadena. The conference, held in April 1998, covered the subjects of 'Entertainment Design, Narrative Architecture, and Virtual Environments' (ITA, unpaged). The conference announcement considered the issue of the scripted environment by noticing and - in an important sense - denying the distinction between exterior world and interior environment, the physical and the psychological.

The conference was planned as a 'discussion about how space can be designed to tell a story, moving from malls (think Universal City Walk) to theme parks (Disneyland as the granddaddy of them all), from special effect-driven blockbusters to the latest in computer games like Riven.'

The space of flows, at first physical, now becomes physical again and it bends and stretches the social and economic world around it. But these worlds in their union create strange new morphologies. Many writers note the possible futures with alarm. Others interpret the current moment in alarmist terms. Saskia Sassen (1991, 1994, 1997) has seen things in a more balanced perspective. She outlines the huge transformative qualities of the space of flows as it translates into physical, economic and informatic. Her reading of the current situation reminds one of the grand historical narratives of Needham on science and technology in China, of Schumpeter on innovation and progress, of Chandler on the history of business and industry or of the Durants on philosophy.

The judicious conclusions of a careful narrative are serious and somewhat terrifying, all the more awesome because they represent events already in place and under way. The change to societies and economies in a change of the space of flows is always dramatic. Consider, for example, the revolutions that came about to the economy and the socio-political environment in America's first two great flow mechanisms, the Erie Canal and then the railroad.

The canal transformed the face of America, guaranteed one city economic supremacy as a port of entry and two others an early lead in the race for industrial supremacy. It revolutionized freight rates, destroyed more expensive methods of transport, and energized the economic life along its path. The calm, slow-moving waters of the Erie Canal changed the face of America far more effectively than any raging flood had ever done. 'Freight rates dropped to one-tenth what they had been before the canal, and business boomed all along the towpath. In the first years, revenue repaid the cost of construction, guaranteed the supremacy of New York as prime entry port to Americas, carried twelve hundred immigrants a day to Detroit and turned Chicago from a village into a city' (Burke, 1996, p. 84).

Twenty years later, a new revolution brought about by yet another new technology made 'the Erie Canal (and every other canal) instantly obsolete. It was railroad, and it beat canals hands-down because it provided a more direct route, was cheaper to build over rugged terrain, didn't need a constant supply of water, was less expensive to main and, most important of all, was the first-ever form of freight transportation to move faster than horse-drawn barges' (Burke, 1996, p. 84).

There are some inaccuracies in Burke's analysis of the superiority of railroads over canals. Canals still have uses in appropriate situations. Rivers are huge, natural canals. And the speed advantage of the train only applied to overland transport: the fast sailing ship had moved faster than the horse for thousands of years. Even so, the point is well taken.

Moreover, the different forms of technological development encouraged each other, creating the framework within which advances could be made and linked: better chemistry and engineering skills led to the improved metals that created possibility of better engines which in meant better transport. This, in turn, called for better time-keeping and a dramatically better industrial organization that shaped better factories which again gave rise to better engineering and better metallurgy.

Rosenberg and Birdzell (1986, p. 151) note that 'from about 1830 on, the construction of railroads and the construction of factories moved in tandem. This was inevitable: the Industrial Revolution was of necessity also a revolution in transportation; in the supply of raw materials and food - in mining forestry, and agriculture; and in trading specialties: wholesaling, retailing, commodity traducing and finance.'

These spaces of flows, at first physical, necessitated an information revolution in the form of time-keeping. These spaces would finally pave the way for the converging world of information, commerce and telecoms that we know today. 'In the nineteenth century, [the Industrial Revolution] also became a revolution in communication. The invention of the telegraph, the laying of the Atlantic Cable in 1859, and the application of steam power to the printing press

(which led to cheaper books and daily newspapers whose readers numbered in the hundreds of thousands) revolutionized communication long before the invention of the telephone and radio ... where the railroad improved communication by speeding the movement of mail, the telegraph and then the telephone permitted even faster - indeed almost instantaneous - communication in nearly every part of the nation' (Chandler 1977: 89).

So it is that information, place and policy intersect in the space of flows, the space that is synonymous with cyberspace. Building cyberspace is a technological programme, but building cyberspace is a social and cultural project in even greater dimension. It is important not merely because it is new and exciting, though it is. It is vital not merely because it shifts the energies of business and changes the gearing ratios on the wheels of commerce, though it does. Cyberspace is important because, more than anything else, it is changing the quality and structure of the physical world in which we live.

Acknowledgements

References

Aida, S. et al.: 1985, *The Science and Praxis of Complexity*, Tokyo: United Nations University.

Alvesson, M.: 1995, *Management of Knowledge-Intensive Companies,* Amsterdam: De Gruyter.

Bailey, J.: 1996, *After Thought: The Computer Challenge to Human Intelligence*, New York: Basic Books.

Bateson, G.: 1984, *Scientific American*, September, p. 41.

Bell, Daniel: 1976, The Coming of Post-Industrial Society. Harmondsworth: Penguin.

Berner, J.: 1965, *Astronauts of Inner Space,* San Francisco: Stolen Paper Editions.

Bloch, M.: 1982, *Feudal Society: Social Classes and Political Organization,* Chicago: University of Chicago Press.

Bloch, M.: 1988, *Feudal Society: The Growth of Ties of Dependence,* Chicago: University of Chicago Press.

Boorstin, D. J.: 1985, *The Discoverers*. New York: Random House.

Boyer, M. C.: 1996, *CyberCities. Visual Perception in the Age of Electronic Communication*. New York: Princeton Architecture Press.

Braudel, F.: 1979, *Afterthoughts on Material Civilization and Capitalism,* Baltimore: Johns Hopkins University Press.

Braudel, F.: 1992a, *The Structures of Everyday Life: The Limits of the Possible* (Civilization and Capitalism: 15th-18th Century. Volume 1). Berkeley: University of California Press.

Braudel, F.: 1992b, *The Wheels of Commerce* (Civilization and Capitalism: 15th-18th Century. Volume 2). Berkeley: University of California Press.

Braudel, F.: 1992c, *The Perspective of the World* (Civilization and Capitalism: 15th- 18th Century. Volume 3), Berkeley: University of California Press.

Braudel, F. and Matthews, S.: 1982, *On History*. Chicago: University of Chicago Press.

Brooking, A.: 1996, *Intellectual Capital*. New York: Van Nostrand Reinhold.

Burke, J.: 1996, *The Pinball Effect*. Boston: Back Bay Books.

Burke, J. and Ornstein, R.: 1997, *The Axemaker's Gift: Technology's Capture and Control of Our Minds and Culture,* New York: Tarcher Putnam.

Buzan, T.: 1995, *The Mind Map Book,* London: BBC Books.

Casti, J. L.: 1995, *Complexification: Explaining a Paradoxical World Through the Science of Surprise*. London: Abacus.

Chandler, A. D.: 1977, *The Visible Hand. The Managerial Revolution in American Business.* Cambridge, Massachusetts: The Belknap Press, Harvard University Press.

Chandler, A. D.: 1994, *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge. Massachusetts: Belknap Press.

Chatwin, B.: 1987, *The Songlines*. London: Penguin Books.

Cohen, J. and Stewart, I.: 1995, *The Collapse of Chaos: Discovering Simplicity in a Complex World*. New York: Penguin Books.

Davenport, T. H. and Prusak, L.: 1997, *Working Knowledge: How Organizations Manage What They Know*. Cambridge, Massachusetts: Harvard Business School Press.

Descartes, R.: 1952, Rules for the direction of the mind, *in* Hutchins, R. M. (ed.), *Great Books of the Western World*, Volume 31. Chicago: Encyclopedia Britannica.

Doyle, M. and Straus, D.: 1993, *How to Make Meetings Work*. New York: Berkeley Publishing Group.

Droege, P. (ed.): 1998, *Intelligent Environments. Spatial Aspects of the Information Revolution*. Amsterdam: Elsevier.

Drucker, P. F.: 1990, *The New Realities*. London: Mandarin.

Edvinsson, L.: 1997, *Intellectual Capital. Realizing Your Company's True Value by Finding Its Hidden Brainpower*. New York: Harper Business.

Ergo, T.: 1998, Flytende skatteparadis. Dagbladet, *Lørdag* 28, February, 6-7.

Febvre, L. and Martin, H-J. with Gerard, D.: 1997, *The Coming of the Book:. The Impact of Printing 1450-1800* (Verso Classics, 10). London: Verso Books

Flichy, P.: 1995, *Dynamics of Modern Communication. The Shaping and Impact of New Communication Technologies.* London: Sage Publications.

Friedman, K.: 1995a, Individual knowledge in the information society, *in* Olaisen, J., Wilson, P. and Munch-Pedersen, E. (eds), *Information Science: From the Development of the Discipline to Social Interaction*. Oslo: Scandinavian University Press, pp. 245-275.

Friedman, K.: 1995b, Language and culture in the information age. *Art and Design*, 45, 56-59.

Friedman, K.: 1996, *Restructuring the City. Thoughts on Urban Patterns in the Information Society*. Stockholm and Oslo: Institutet för Framtidsstudier and Voksenåsen.

Friedman, K.: 1997, Design science and design education, *in* McGrory, P. (ed.) *The Challenge of Complexity*. Helsinki: University of Art and Design Helsinki UIAH, pp. 54-72.

Friedman, K.: 1998, Virtuelle og virkelige byer. *Samtiden*, 1, 42-52.

Friedman, K. and Ahlin, J.: 1996, The informed city. Urban planning at the border of culture and technology, *in* Verwijnen, J. and Lehtovuori, P. (eds), *Managing Urban Change*. Helsinki: University of Art and Design Helsinki UIAH.

Fruin, W. M.: 1997, Knowledge Works: Managing Intellectual Capital at Toshiba. Oxford: Oxford University Press.

Gimpel, J.: 1992, *The Medieval Machine. The Industrial Revolution of the Middle Ages*. London: Pimlico.

Hedlin, P.: 1996, *Accounting Investigations*. Stockholm: Stockholm University School of Business.

Holland, J. H.: 1996, *Hidden Order: How Adaptation Builds Complexity*. Reading, Massachusetts: Addison-Wesley.

ITA, Art Center College of Design Institute for Technology and Aesthetics: 1998, *Scripted Spaces. An ITA Conference on Entertainment Design, Narrative Architecture, and Virtual Environments*. Pasadena, California: Art Center College of Design Art Center College of Design. URL: <http:// www.artcenter.edu/scriptedspaces.html> Date accessed, 1998 February 9.

Jensen, O.: 1987, *The American Heritage History of Railroads in America*. New York: Bonanza Books.

Johannesen, J.-A.: 1996, The cognitive authority of information: Information science, the theory of science and ethics, *in* Olaisen, J., Wilson, P. and Munch-Pedersen, E. (eds), *Information Science: From the Development of the Discipline to Social Interaction*. Oslo: Scandinavian University Press, pp. 113-134.

Jones, S. G. (ed.): 1995, *Cybersociety. Computer-Mediated Communication and Community*. London: Sage Publications.

Jones, S. G. (ed.): 1997, *Virtual Culture. Identity and Communication in Cybersociety*. London: Sage Publications.

Jourard, S. M.: 1964, *The Transparent Self. Toward a Psychology of Being*. Princeton: D. Van Nostrand.

Kauffman, S.: 1996, *At Home in the Universe: The Search for Laws of Self-Organization and Complexity*. Oxford: Oxford University Press.

Keegan, J.: 1993, *A History of Warfare*. London: Pimlico.

Klein, D. A. (ed.): 1997, *The Strategic Management of Intellectual Capital*. London: Butterworth-Heinemann.

Landes, D. S.: 1983, *Revolution in Time. Clocks and the Making of the Modern World*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Lewin, R.: 1993, *Complexity. Life at the Edge of Chaos*. London: J. M. Dent.

Mackay, A. L. (ed.): 1991, *A Dictionary of Scientific Quotations*. Bristol and Philadelphia: Institute of Physics Publishing.

Malan, L.-C. and Kriger, M.: 1998, Making sense of managerial wisdom. *Journal of Management Inquiry*. In press.

Maslow, A. H.: 1962, *Toward a Psychology of Being*. Princeton: D. Van Nostrand .

McGregor, E.: 1991, *Strategic Management of Human Knowledge, Skills and Abilities*: Workforce. San Francisco: Jossey-Bass.

McNeill, W. H.: 1984, *The Pursuit of Power: Technology, Armed Force and Society Since A.D. 1000*. Chicago: University of Chicago Press.

Mokyr, J.: 1992, *Lever of Riches: Technological Creativity and Economic Progress*. Oxford: Oxford University Press.

Merriam-Webster, Inc.: 1993, *Merriam-Webster's Collegiate Dictionary*, 10th ed. Springfield, Massachusetts.

Mollerup, P.: 1998, *Design is Nothing in Itself*. London: Thames and Hudson [in press].

Moustakas, C.E.: 1967, *Creativity and Conformity*. Princeton: D. Van Nostrand.

Myers, P. S.: 1996, *Knowledge Management and Organisational Design*. London: Butterworth-Heinemann

Needham, J.: 1965, *Science and Civilization in China*, Volume. 4, Part. 2: Mechanical Engineering. Cambridge: Cambridge University Press.

Needham, J., Ling, W. and de Solla Price, D. J.: 1960, *Heavenly Clockwork: The Great Astronomical Clocks of Medieval China*. Cambridge: Cambridge University Press.

Nonaka, I. and Takeuchi, H.: 1995, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford: Oxford University Press.

Nordby, J. W. and Skoe, A.: 1997, *Praktisk strategiarbeid*. Oslo, Norway: TI-forlaget.

Norman, D. A.: 1990, *The Design of Everyday Things*. New York: Doubleday.

Norman, D. A.: 1993, *Things that Make Us Smart*. Reading, Massachusetts: Addison-Wesley.

Olaisen, J..: 1996, Information, cognitive authority and organizational learning, *in* Olaisen, J., Wilson, P. and Munch-Pedersen, E. (eds), *Information Science: From the Development of the Discipline to Social Interaction*. Oslo: Scandinavian University Press, pp. 7-19.

Ochoa, G. and Corey, M.: 1995, *The Timeline Book of Science*. New York: Ballantine.

Oxford University Press: 1964, *The Oxford Dictionary of Quotations*, 2nd ed. London: Oxford University Press.

Pacey, A.: 1992, *The Maze of Ingenuity. Ideas and Idealism in the Development of Technology*. Cambridge, Massachusetts: The MIT Press.

Paik, N. J.: 1964, Utopian laser television, *in* Manifestoes. New York: Something Else Press.

Paik, N. J.: 1974, Media planning for the postindustrial society. Reprinted in Paik, N. J. and Moffett, K. W. (eds): 1995, *The Electronic Superhighway*. New York, Seoul and Fort Lauderdale: Holly Solomon Gallery, Hyundai Gallery and the Fort Lauderdale Museum of Art, 39-47.

Petroski, H.: 1994, *The Evolution of Useful Things*. New York: Vintage Books.

Plato: 1961, *Plato: Collected Dialogues*. Princeton: Princeton University Press.

Plato: 1998, *Phaedrus*. Redaction by Ken Friedman based on translation by B. Jowett. URL: <gopher://gopher.vt.edu:10010/02/131/15> Date accessed: 1998 March 25.

Polesie, T. and Johansson, I.-L.: 1992, *Responsibility and Accounting: The Organizational Regulation of Boundary Conditions*. Lund: Studentlitteratur.

Rifkin, J.: 1987, *Time Wars. The Primary Conflict in Human History*. New York: Touchstone-Simon and Schuster.

Rose, S.: 1992, *The Making of Memory: From Molecules to Mind*. New York: Anchor Doubleday.

Rosenberg, N. and Birdzell, L. E. Jr.: 1986, *How the West Grew Rich. The Economic Transformation of the Industrial World*. New York: Basic Books.

Sassen, S.: 1991, *The Global City*: New York, London, Tokyo. Princeton: Princeton University Press.

Sassen, S.: 1994, *Cities in the World Economy*. Thousand Oaks, California: Pine Forge/Sage Publications.

Sassen, S.: 1997, The new centrality: The impact of telematics and globalization, *in* Droege, P. (ed.) *Intelligent Environments. Spatial Aspects of the Information Revolution*. Amsterdam: Elsevier.

Schumpeter, J.: 1981, *Capitalism, Socialism and Democracy*. London: George Allen and Unwin.

Shattuck, R.: 1996, *Forbidden Knowledge*. San Diego: Harcourt Brace.

Simmons, D.: 1990, *Hyperion*. New York: Bantam Spectra.

Simmons, D.: 1991, *The Fall of Hyperion*. New York: Bantam Spectra.

Simmons, D.: 1996, *Endymion*. New York: Bantam Spectra.

Skoe, A.: 1992, Fra problem til løsning. Oslo, Norway: TI-forlaget.

Skoe, A.: 1994, *Creating Customer Care*. Neuilly sur Seine, France: SITA - Societe Internationale de Telecommunications Aeronautique.

Skoe, A.: 1997, *Lectures in Leadership and Human Behavior*. Norwegian School of Management. Oslo, Norway.

Spence, J. D: 1994, *The Memory Palace of Matteo Ricci*. New York: Viking Press.

Stephenson, N.: 1995, *The Diamond Age*. London: Viking.

Stephenson, N.: 1992, *Snow Crash*. London: ROC.

Stewart, T. A.: 1997, *Intellectual Capital: The New Wealth of Organizations*. New York: Doubleday.

Sveiby, K. E.: 1997, *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*. San Frtancisco: Berrett-Koehler.

Verwijnen, J. and Lehtovuori, P. (eds): 1996, *Managing Urban Change*. Helsinki: University of Art and Design Helsinki UIAH.

Waldrop, M. M.: 1992, *Complexity: The Emerging Science at the Edge of Order and Chaos*. New York: Simon and Schuster.

Watts, A.: 1951, *The Wisdom of Insecurity*. New York: Vintage Books.

Wyld, L. D.: 1962, *Low Bridge! Folklore and the Erie Canal*. Syracuse, New York: Syracuse University Press.

Yates, F. A.: 1992, *The Art of Memory*. London: Pimlico.

Zuboff, S.: 1988, *In the Age of the Smart Machine*. New York: Basic Books.

PART 2

HOMOGENEITY, MARGINALIZATION, AND THE PRESERVATION OF LOCAL CULTURES

REFLECTIONS ON CULTURAL BIAS AND ADAPTATION

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Abstract. SvenskMud[1] is an Internet-accessible Multi-User Domain (MUD) system. But, in contrast to 99% of all Internet-accessible MUDs, SvenskMud is not a global community. SvenskMud is instead the first vernacular (i.e. non-English speaking) MUD in the world, and the only Swedish-speaking MUD in Sweden today. This paper problematizes four questions regarding cultural attitudes and their relationship to CMC technologies. Moving from the historical and the general to the present and the specific I will in turn discuss the following questions: (1) how have American cultural attitudes (historically) shaped the development and use of CMC technologies? (2) how do cultural attitudes (today) shape the implementation and use of CMC technologies? (3) how do cultural attitudes manifest themselves in the implementation and use of MUDs? (4) how do cultural attitudes manifest themselves in the implementation and use of SvenskMud?

1. How have American Cultural Attitudes (historically) Shaped the Development and use of CMC Technologies?

The Internet[2], or rather its precursor, ARPANET, was designed by, built for and paid by Americans. More specifically, it was designed and paid for by the American Defense Department through the Advanced Research Projects Agency (ARPA) in order to connect its sponsored organizations. The first ARPANET nodes were in place 1969 and the first services were TELNET and FTP, soon followed by electronic mail. The original purpose was to give researchers access to remote computers. The possibility to send electronic mail was originally of subordinated importance, but it was clear already after a year that this was the utility that was used the most. Not perhaps in terms of data traffic generated, but in time spent.

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[1] SvenskMud means SwedishMud in Swedish. The name is in this way self-advertising to all who knows Swedish.
[2] Information about the history of the Internet comes from Levy (1984), Quarterman (1993), Reid (1994) and Rhinegold (1994).

An important characteristic of this network was that there was no single central computer that controlled the network. All information that traveled through the network could travel any way between points A and B. The network would continue to work even if parts of it were destroyed, for example in a nuclear attack. This characteristic was valued highly in a computer network that sprang out of military purposes and military interests.

1.1. ON BIAS IN COMPUTER SYSTEMS

It was, of course, at that time impossible to predict the following popularity and spread of the Internet. It is therefore not surprising that aspects of the original purpose and the original design has come in conflict with subsequent types of usage of the Internet and that *bias* is built into the structure of the Internet. Bias in computer systems has been defined by Friedman and Nissenbaum;

> [...] we use the term bias to refer to computer system that *systematically* and *unfairly discriminate* against certain individuals or groups of individuals in favor of others. (original emphasis) (Friedman and Nissenbaum, 1996, p.332)

The key terms in the definition are 'systematically' and 'unfairly'. *Both* criteria have to be satisfied for bias to exist in a computer system, i.e. a system can exercise systematic discrimination *or* unfair discrimination without being biased.

1.2. IS IT POSSIBLE TO AVOID BIAS IN THE DESIGN OF COMPUTER SYSTEMS?

Certain measures can be taken to minimize bias in computer systems. The first is to acknowledge that bias in computer systems constitutes a problem of importance and that freedom from bias is an ideal in computer systems – along with other difficult-to-attain ideals such as reliability and efficiency. As with other ideals, freedom from bias may not be attainable in compter systems as the design process in itself is a series of decisions which determine how limited resources should best be used to attain mutually exclusive goals.

Friedman and Nissenbaum suggest that in order to remedy bias we need to identify bias and develop methods to avoid or correct identified bias. To minimize preexisting bias, "designers must not only scrutinize the design specifications, but must couple this scrutiny with a good understanding of relevant biases out in the world" (ibid., p.343). It is difficult not to agree with Friedman and Nissenbaum, but their conclusion is at the same time both self-evident and difficult to attain for a system designer. This is something they themselves acknowledge.

Let us therefore contrast the statement above with some practical advice for software designers (Lewis and Rieman, 1994). An important lesson from Lewis and Rieman is that if you design something for everyone, it might well turn out

to work for no-one. Their advice is therefore that astute designers should do the exact opposite. If you design something that is truly useful for a particular group of users, it might very well turn out to be useful also for other groups of users or for other tasks. In their own words; "Even systems that turned out to be useful in unexpected ways, like the spreadsheet, started out by being useful in some expected ways." (ibid.). Theirs is an example of the spreadsheet, mine below is one of the Internet.

As can be seen, it can be very difficult to draw a line between designing a system for a certain group of users (or for certain uses) and, avoiding to build bias into a system. Taking into account the practical problems ("at which cost?") of designing bias-free software, one suggestion of Friedman and Nissenbaum is that "designers should *reasonably anticipate* probable contexts of use and design for these" (Friedman and Nissenbaum, 1996, my emphasis).

Just as Friedman and Nissenbaum have addressed the specific problem of bias, others have addressed the larger problem of usability in computer systems, of which bias is only one aspect.

> A computer system does not itself elucidate the motivations that initiated its design, the user requirements it was intended to address, the discussions, debates and negotiations that determined its organization, the reasons for its particular features, the reasons against features it does not have, the weighing of tradeoffs, and so forth. (Carroll, 1997, pp.509-510)

Made explicit, design issues, options and arguments for and against these options together with final decisions constitute the design rationale (Moran and Carroll, 1996) of a system. A design rationale would naturally be of great use in identifying embedded values and as a basis for discussions of whether design decisions were reasonable or if they contained biases that were built right into the system.

In conclusion, Friedman and Nissenbaum have raised an important issue, but the task of developing methods to avoid bias is a difficult one where much remains to be done. In contrast, their work can be directly applied to analyze existing bias in computer systems. They have developed a framework that helps identify different types of biases that can be built into the very hardware and software (including the algorithms) of computer systems. In their framework, bias is divided into three main categories; pre-existing social bias, technical bias and emergent social bias. Case studies of existing systems exemplify these categories and the categories are further developed in a number of subcategories.

1.3. EXAMPLE OF BIAS: THE INTERNET

The Internet is an example of a computer system that suffers from technical and emergent social bias.

1.3.1. Technical bias

At the time when the Internet was born, plain 7-bit ASCII code was used for communication. With a limited number of characters (less than 100 after control codes for 'line breaks', 'end-of-file' etc. are deducted), of all languages that use the Latin alphabet only all characters needed to write in English were fully supported. The Swedish language has 29 letters in the alphabet and the three "extra" letters (compared to English) are not supported by ordinary 7-bit ASCII code[3]. This has created problems for Swedes ever since. Even though different extended character sets are available today, ASCII has for a long time been the prevalent code, and the only way to be really, really sure of compatibility even today is for Swedes to restrict themselves to the 26 letters that the Swedish and the English alphabet share. Up to this day, no Swedish companies or private persons have e-mail addresses or URLs that include any of the "extra" three letters in the Swedish alphabet; å, ä and ö.

This is clearly a case of technical bias according to Friedman and Nissenbaum's categorization of bias; "Technical bias arises from technical constraints or technical considerations" (ibid., p.334). Bias in computer tools "originates from a limitation of the computer technology including hardware, software, and peripherals" (ibid., p.334). With limited computer capabilities, only a limited number of characters are included in the ASCII character code. Apparently European languages that utilized variations of the Latin alphabet were not given the highest priority compared to other special characters such as "%", "(" and "$".

1.3.2. Emergent bias

It comes as no surprise that technical constraints made it impossible for the 7-bit ASCII code to support all different characters of all different languages that utilizes the Latin alphabet. But perhaps it makes as much sense to characterize the choice of specific characters included in the ASCII code and the choice of the ACSII character set itself to be an effect of a mismatch between the intended and the emergent usage of the Internet. The possibility of ARPANET/Internet expanding beyond the Atlantic ocean all the way to Sweden was surely not a design consideration at the time the system was designed.

Focusing on the mismatch between intended and actual range of use would instead make the Internet an example of emergent bias which "arises in a context of use with real users. This bias typically emerges some time after a design is completed, as a result of changing societal knowledge, population, or cultural values" (Friedman and Nissenbaum, 1996, p.335).

More specifically, the emergent bias of the Internet adheres to the subcategory of mismatches between users and system design. This type of bias

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[3] ASCII stands for *American* Standard Code for Information Interchange (my emphasis).

"originates when the population using the system differs on some significant dimension from the population assumed as users in the design" (ibid., p.335).

1.4. EXAMPLE OF BIAS: ENGLISH AS ELECTRONIC LANGUAGE

More surprising than the fact that the Internet has had built-in technical and emergent social bias is the fact that in 1996 it is still possible to imply a general equivalency between Electronic language and English language:

> Electronic Language is characterized by a set of situational constraints which sets it apart from other varieties of English. (Collot and Belmore, 1996, p.14)

In Collot and Belmore's article, "Electronic Language: A new variety of English", Electronic language is defined in such a way that it – according to Friedman and Nissenbaum's categorization of bias – clearly embodies a strong pre-existing social bias. This bias is fortunately *not* built into a computer system, but rather "only" built into a text.

> Pre-existing social bias has its roots in social institutions, practices, and attitudes. When computer systems embody biases that exist independently, and usually prior to the creation of the software, then the system exemplifies pre-existing social bias. Pre-existing bias can enter a system either through the explicit and conscious efforts of individuals or institutions, or implicitly and unconsciously, even in spite of the best of intentions. (Friedman and Nissenbaum, 1996, p.334)

It helps to mentally exchange all references to "computer systems" in the quote above to "text" in order to fit the definition of pre-existing bias onto the definition of electronic language.

It is especially surprising that a slip like this turns up in a book on computer-mediated communication with the subtitle "linguistic, social and *cross-cultural perspectives*"(my emphasis): The authors of course mean "Electronic English", when they consistently refer to "Electronic Language". But from the recurrent usage and the vocabulary of the rest of the article, it is actually possible to draw the conclusion that only one language exists on the planet Earth.

The last paragraph of the article points out the importance of the area and – for the first time in the article – at least acknowledges that there is a whole world out there. But, since Electronic language is defined as a variety of English, it still seems to take for granted that the rest of the world also speak (only) English:

> Regardless of the direction future studies may take, telecommunications are steadily and dramatically gaining in importance the world over. Electronic Language, which gives voice to such communication, is therefore worth of further exploration. (Collot and Belmore, 1996, p.28)

It should be noted that I have no critique against the results presented in the article itself, my critique is only on the choice of terms and definitions.

2.   How do Diverse Cultural Attitudes (today) Shape the Implementation and use of CMC Technologies?

Having discussed the problems generated by the 7-bit ASCII character set, it might be easy to draw the conclusion that this has created insurmountable problems for Swedes on the Internet. But the fact that the character set doesn't support the full register of the Swedish language does not mean that Swedes have been prevented from using the Internet. It does not either mean that we have to communicate in English when we do use the Internet, it "only" means that we have to adapt ourselves and the Internet for our own purposes.

People are not "cultural dopes", but active beings with creative powers who can marshal a variety of different resources in order to attain their goals. Not only do people use these resources to adapt to existing cultural principles, to existing limitations in their current life situations, to available tools and technologies or to a "deficient" Internet. People over time also create new cultural principles, change their life situations, shape successive iterations of tools and technologies, including the Internet. "Every innovation must be grafted on to preceding tradition, as is happening as the new technologies of information and communications spread. [...] On the other hand, [...] principles do not inhabit a world apart, but are produced and reproduced moment by moment in the interaction between actor and environment". (Mantovani, 1996, p.60). This general cultural principle is grafted specifically on to the relationships to artifacts by the "task-artifact cycle" (Carroll et. al 1991); "A task implicitly sets requirements for the development of artifacts to support it; an artifact suggests possibilities and introduces constraints that often radically redefine the task for which the artifact was originally developed" (p.79).

Bowers et al. (1995) describe how the smooth flow of work, i.e. "ensuring the even distribution of work across operators, machines and jobs" (p.54), in two workplace settings was disrupted when a so-called workflow system was introduced. The purpose of introducing the system was manifold. The primary reason had to do with accountability and it was a requirement to use a workflow system in order to gain the contract. Part of the purpose behind introducing the system was however also to support the specific tasks performed by the workers themselves, for example giving them a better overview of their work, thus enabling them to better understand and change it.

Unfortunately, instead of supporting work, the system disrupted the smooth flow of work in several ways. The paper is a vivid example of how people as active beings adapt to available tools and how they experiment with different workarounds in order to attain the goal of re-establishing the order and smooth flow of work. An example is how larger, regularly recurring jobs adhering to standard formats and standard contents were being handled. Before the workflow system was used, materials for these could be ordered in advance and

part of the jobs could be completed already before they had been formally commissioned. With the system, a job was non-existent if no job number could be specified (yet). No actions could thus be taken as far as the workflow system was concerned. This created dilemmas that could be worked around in different ways, all of them having important drawbacks and all of them being worse compared to pre-workflow practices.

In the end, one of the two workplace settings had managed the problems introduced by the workflow system by working overtime every week since its introduction. The other workplace setting basically disregarded the system, but retrospectively reconstructed the work in such a way as to satisfy the requirements of the system.

Once a technology has been created, it is an open question how it will be adapted to a social setting. This is the reason why it is so difficult to predict the effects of different kinds of technology beyond the apparent effects on efficiency and cost that are often decisive when it comes to the initial decision of whether to invest in a technology or not (Sproull and Kiesler, 1991, p.4-5). Predictions of initial efficiency and cost effects does not have much predictive value about further effects once they have been deployed, or about social and societal effects in a longer perspective.

2.1. HOW SWEDES WORK AROUND THE LIMITATIONS OF THE INTERNET

At a time when few Swedes – active within the fields of computer sciences and used to English, the pseudo-English of programming languages and the English-Swedish version of computerese – used the Internet, they adapted to the linguistic constraints. Instead of using å, ä and ö, they managed with substitutions such as }, { and |, or aa, ae and oe in electronic communication. Or just "a" for å and ä as well as for the letter a, and "o" both for o and ö. People are flexible and can get used to many things. Many (including myself) probably did not think twice about how they had had to change their habits after a while.

As more people of different sorts came to use computers, electronic mail and the Internet, they met with these distractions and Swedes with less knowledge of English and computers understandably had less patience with them. At that point the situation began to swing so as to force the computer systems to change instead of forcing larger and larger numbers of people to change. One result of this is that most Swedes who send mail within Sweden can use the full register of the Swedish alphabet today.

However, if mail is sent abroad, successful transmission of the message is dependent both on the mail program that sends the message and the program that receives it. Since the header fields ("To: ", "From:", "Subject:" etc.) of the

message is coded in a different way than the body[4], it can happen that the header *or* the body but not both are successfully transmitted. The result is that even today – almost 30 years after the ARPANET was first used – it is still a risky business to send e-mail letters in Swedish, at least outside of Sweden. And as mentioned before, no Swede uses the extra three letters in their e-mail addresses. A reasonable guess is that this has the effect of naming practices of new-born babies in Sweden today with many parents avoiding names with the unique Swedish letters.

This continuing language bias is not necessarily something that has been intentionally designed into the system. It is rather "just" a side-effect of the power relations between a group of (English-speaking) users who collectively wield power and influence over the development of the Internet through their numbers and initiative. And how do you find out how the Internet works? By reading documents that are accessible on the Internet. In what language are the documents written? In English of course. Anyone can translate them, but... there *is* power in number.

At this point one has to distinguish between different powers that shape the design process. Numbers and economic issues should be distinguished from how the design *ought to be* from a moral perspective (Friedman, personal communication). Freedom from cultural and other bias might be a difficult or even impossible ideal to attain, but should not be countered by arguments of costs and efforts, but requires an answer from a moral point of view.

Only the issue of language has been touched upon here, not issues of how the content on the Internet is culturally shaped. Regarding the question of how values are embedded in computers and computer networks, Thurber and Stratton (1995) – primarily addressing non-western cultures – raise the question if it is necessary to westernize in order to computerize. Their point is that importing the technology by default means importing also the values (individualism, western notions of freedom and democracy etc.). Furthermore, if the technology is to be integrated into the culture rather than the culture into the technology, conscious efforts have to be made, for example by producing as much material as possible in the local language. The basic issue of bias is the same as in this paper, but it becomes even more emphasized when one looks at non-western cultures (perhaps utilizing non-Latin characters).

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[4] How the text in the body, i.e. the content of the message, is coded, is actually defined in the header of the message.

3. How do Diverse Cultural Attitudes Manifest Themselves in the Implementation and use of MUDs?

A MUD is a synchronous CMC systems. MUD is an acronym for Multi-User Dungeon. The term gives away their origins as systems for playing games on the Internet and influences from fantasy culture. Today MUDs are used for many different purposes and are called by many different names, such as text-based collaborative virtual environments. For an introduction to MUDs, see Curtis (1992).

3.1. ON THE RELATIONSHIP BETWEEN CULTURE AND TECHNOLOGY IN MUDS

One thing that sets MUDs (and subsequent systems with more advanced graphical interfaces) apart from other CMC systems is the close coupling between a social system and a technical system. Amy Bruckman was first to explicitly comment on this fact (Bruckman, 1992). After having been in contact with James Aspnes who in 1998 created the first MUD that was *not* an adventure game, she concluded that:

> The change in the software encouraged different styles of interaction, and attracted a different type of person. The ethics of the community *emerged*. The design of the software was a strong factor in shaping what emerged. [...] In the case of TinyMUD [the MUD system that Aspnes created], the technology *is* a social system. It is therefore remarkable that the social changes TinyMUD caused were not intended by its founder. Aspnes writes that "this approach attracted people who liked everybody being equal." Somewhat accidental features of the artifact combined with a process of *self-selection* [created] a community with a strong, shared set of values. (original emphasis) (Bruckman, 1992)

As apart from what Bruckman writes, it is not "remarkable" that the social changes that emerged in TinyMUD were not intended by its founder. Even with an understanding of the close coupling between the technical and the social system — which Aspnes did not necessarily have – the *unpredictability* of emergent, "chaotic" phenomena is precisely one of the characteristics that make them and mark them as emergent[5]. But that is a detail, what is interesting is Bruckman's conclusion that a MUD system in use is at the same time both a

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[5] In emergent phenomena, collections of units can through their *interaction* give rise to properties that are more than the sum of their individual contributions. In "nonlinear systems [...] changes are amplified, breaking up existing structures and behaviour and creating unexpected outcomes in the generation of new structure and behavior" (Elliott and Kiel, 1997, p.1). An example of an emergent phenomenon is the growth of a plant which consists of rather simple components whose combined behavior is so complex that it may not be reducible to a mathematical statement. For applications of chaos theory (Gleick, 1987) to the social sciences, see Elliott and Kiel (1997) and Ferguson (1997).

technical system *and* a social system. If one changes significantly, so will also the other in an open-ended, unpredictable dialectical dance (see Figure 1).

Some examples of the close ties between a MUD as both a social system and a technical system are described in O'Day et al. (1996):

> This paper describes the joint evolution of tools and social practices in Pueblo, a school-centered learning community supported by a MOO [a MOO is a type of MUD system] [...]. Examples illustrate how one can design and use a social practice to simplify a technical implementation, and how one can make a choice in technical implementation to work towards a desirable social goal. Social and technical practices in a network community co-evolve as social values and policies become clearer and as growth in the community pushed it toward changes in the distribution of authority and power. (O'Day et. al., 1996, p.160)

The social-technical design cycle

Social practices   **Artifacts**
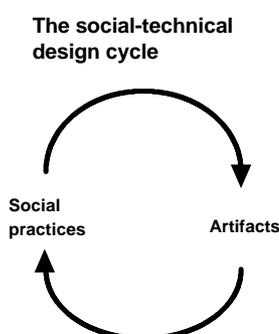
Figure 1. The social-technical design cycle. Adapted from O'Day et. al. (1996). The relationship between the social system and the technical system is not causal, but dialectical and co-evolutionary in a MUD system.

The social-technical design cycle can be seen as an instance of the task-artifact cycle (see section 2) applied to a type of computer systems that support the on-going activities of a virtual community.

Other examples of the close ties between the social and technical system in an early (mid-1980s) multi-user graphical virtual environment has been described in "The lessons of Lucasfilm's Habitat" (Morningstar and Farmer, 1991). Some of the lessons Morningstar and Farmer preach are technical and others are social, but what they have in common is that they always relate to each other. To Morningstar and Farmer, the purpose of the technical dimension is to facilitate the social dimension which in turn affects further technical developments. One of their lessons is that "detailed central planning is impossible; don't even try" (ibid., p.285). This lesson is quite in line with the earlier observations of the emergent and open-ended nature of these systems and the same as when O'Day et. al. (1996) establish that "the system is always

in flux, as the implications of design and use are absorbed and proceed to transform other parts of the system" (p.161).
Another lesson of Morningstar and Farmer's is to "work within the system";

> Wherever possible, things that can be done within the framework of the experiential level should be. The result will be smoother operation and greater harmony among the user community. This admonition applies to both the technical and the sociological aspects of the system. (Morningstar and Farmer, 1991, p.294)

The dialectical relationship between human (culture) and artifacts (as part of culture) is of central importance in some psychological theories that have gained increasing attention lately, such as socio-cultural theories (Wertsch, 1991; Cole, 1996), activity theory (Engeström, 1987; Engeström 1993) and theories of distributed cognition (Pea, 1993; Hutchins, 1995). Our relationship (both individual and social) to artifacts is interesting from many different aspects and it brings matters to a head when it comes to virtual artifacts and social systems such as MUDs. What makes MUDs special is the very tight coupling between technical system and social system, which is an effect of the fact that a MUD system is a social system *within* an artifact.

The answer to the question of how do diverse cultural attitudes manifest themselves in the implementation and use of MUDs is that it is not that simple. The relationship is not a causal one and O'Day et. al. (1996) give examples of no less than four different observed relationships between social (cultural) and technical design elements.

4.   How do Diverse Cultural Attitudes Manifest Themselves in the Implementation and use of SvenskMud?

When it comes to analyzing the effects of cultural attitudes on the implementation and use of SvenskMud, we cannot reduce it to a question of only *one* culture, the Swedish culture. Several different cultures are involved. In any discussion about SvenskMud, we also have to take into account youth culture in Sweden, hacker culture (both regarding the origins of MUDs in general and SvenskMud in particular), a general CMC (Internet) culture and fantasy culture as displayed through fantasy literature, role-playing games, live action role playing, and so forth.

4.1. SWEDISH CULTURE

There are differences in culture between different countries. And between different parts of the same country. And between different parts of the same city. It is easier to describe cultural variations than to explain them. Daun (1992) still makes an attempt to explain cultural variations as likely outcomes of

consequences of differences in political history, economic developments, structure of settlements and demographics.

> Different life conditions have systematic consequences on peoples' mentalities. How people live their lives affect their values, their feelings, their perspectives on life. Nature, societal history and life conditions work together. This is how differences in mentality appear. (my translation) Daun, 1992, p.123

Differences in expressivity, spontaneity and talkativeness supposedly cohere with factors such as climate, demographics, degree of homogenity-heterogenity and structure of settlements. There are indications that differences in personality is dependent on climate and climate also has socio-cultural effects such as how much people can be outside of the home, in public. The more time people (can) spend in public, the greater the chances of spontaneously meeting others. Spending time in public also promotes social intercourse and has positive effects of socializing in larger groups. (Daun 1992, pp.120-121).

But, many characteristics that supposedly describe typical Swedish characteristics (for example being shy, boring, superficially friendly, inflexible, cautious, independent, collectivist, conflict-avoiding, honest, reasonable and so on (Daun, 1994; Phillips-Martinsson, 1981)) have to strong ties to social interaction. They are very difficult to transfer, operationalize and examine in a virtual environment.

I know of nothing that has been written that tries to relate general cultural characteristics of Swedes to attitudes towards computer-mediated communication. If cultural characteristics/stereotypes in some sense are "true" (or at least useful as concepts), then it sounds plausible that they should also affect the implementation and use of CMC technologies.

YOUTH CULTURE

Youth culture, in itself a modern phenomena, is characterized by many different cultural tendencies. Terms such as individualization, reflexivity, mediatization and aestheticization have been used to try to describe general cultural trends among young people today (Fornäs, 1995).

MUDs have been described as potential tools in the identity process of young people (Bruckman, 1992; Turkle, 1995). Sufficient to say is that these authors speculate about MUDs as arenas where young people can project and experiment with different aspects of their identity. This can range from being more competitive than is socially accepted for young women, or more sensitive and helpful than young men are "supposed to be" in modern society up to and including playing characters of the opposite sex.

4.2. HACKER CULTURE AT A (TECHNICAL) UNIVERSITY

Although nothing has specifically been written about how hacker ideals (Levy, 1984) have influenced early MUD developments, it is easy to see how they have influenced every aspect of the history of MUDs.

4.2.1. Hacker culture
First of all, almost everything that has to do with MUDs has always been created through voluntary (unpaid) work, predominantly by university students and predominantly at engineering or computer science departments. These are the traditional bastions of hacker culture.

Almost all MUD systems can be used for free and the system software is free to download (in order to start your own MUD system), inspect and develop. The MUD systems and the MUD instances[6] have been developed over time by many, sometimes up to hundreds of different persons. To start to charge money for using a MUD system would formally involve getting permission from each individual who has contributed towards making the final product into what it is. Some developers have gone as far as giving away the product of their efforts with the caveat that the code they have written is free to spread, but never to charge money for.

4.2.2. Hacker culture at Linköping University
In Sweden, much of the MUD scene, and especially the early stages have been centered around different academic computer clubs at (technical) universities. Lysator, the academic computer club at the technical university in Linköping is SvenskMuds' home and the home of its' "older sibling", NannyMUD.

Lysator (`http://www.lysator.liu.se`) was founded in 1973 and it is the oldest academic computer club in Sweden. SvenskMud is formally organized as one out of many "projects" at Lysator. The former student who created SvenskMud is still formally responsible for the SvenskMud project at Lysator. As project leader, he has a responsibility to inform Lysator about the status of a project at an annual meeting.

In Lysator, money is seen as a complication and most projects involve no money at all as the computers are usually given to the computer club and all work is voluntary.

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[6] There are many different MUD systems; Diku, LP and MUSH are the MUD systems that are most popular on the Internet. Almost 50 % of all public MUDs are built on one of these three systems. There can exist many copies, or *instances* of every system on the Internet. These instances are built on the same core of programming code, but they develop in different directions as soon as they are started up.

4.3. FANTASY CULTURE

Fantasy culture (Dahlquist et. al. 1991) of different sorts has a strong position in contemporary Swedish (youth) culture. Some of the best-selling books in Sweden are (translated) works of fantasy fiction. Fantasy culture is based on "myths, legends and literature, especially Tolkien's cult trilogy *Lord of the rings*." (Toles-Patkin, 1986). Contemporary Swedish fantasy culture also has elements of medieval Swedish history mixed with the more fantastic elements.

SVEROK – the national organization that organize clubs for role-playing games[7], live action role playing etc. – is one of the largest, and one of the fastest growing youth organizations in Sweden today. Both role-playing games and live action role playing[8] have elements in common with MUDs – besides the common heritage from fantasy literature. All three activities are open-ended and built on active participation.

4.4. CMC CULTURE

When it comes to the situated actions within a MUD, there are strong elements of playfulness and performance involved within the process, of making do with whatever resources are at hand. Danet et al. (1997) argue that playfulness is an inherent characteristic of all computer-mediated communication, but that it is especially apparent in synchronous communication.

The creative MUD player borrows aspects of Lévi-Strauss' bricoleur (1966) or tinkerer who "make do with 'whatever is at hand' " (p.16) and who engage in "reflective manipulation of a set of resources accumulated through experience" (Orr, 1990, p.184). Even with a limited set of resources, combining these in new and unexpected ways can lead to new and surprising results. Danet et. al. (1997) compare the computer keyboard to a piano keyboard and the creative computer virtuoso with a jazz pianist.

4.5. SOME EXAMPLES FROM SVENSKMUD

What makes SvenskMud Swedish is on one hand the fact that the Swedish language is used throughout the MUD and on the other hand that the content of the MUD is filled with references to Swedish culture.

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[7] For a description of role-playing games, see (Toles-Patkin, 1986).

[8] In live action role playing a group of organizers have built up a scenario and they distribute roles among the participants who then spend a weekend or up to a week or longer living their roles and generally trying to recreate the actual (often medieval) conditions in the form of a game. Many live action role players have developed interests in medieval Swedish culture, including sewing their own clothes after medieval fashion, building up (temporary) contemporary villages, cooking food with provisions and according to recipes typical of the period etc.

The term vernacularization is here used to refer to the process of adapting the MUD language-wise and the term localization to the process of adapting the content of the MUD to Swedish culture.

4.5.1. Vernacularization

Since English is the lingua franca of the Internet, SvenskMud differs from 99%[9] of all Internet-accessible MUDs by not being in English.

To a player in SvenskMud who can not see "behind the scenes", SvenskMud seems to be all Swedish. But in fact, only the "surface" of the technical structure has been fully translated to Swedish. Behind that surface SvenskMud still uses the same "mud driver" and the same "mud library" as other MUDs of the same type do.

The player who graduates and becomes a magician will get to look behind the scenes and see some of the same things as in other, English-speaking MUDs. In order to extend the SvenskMud world, that person will have to learn a programming language with pseudo-English terms. Some of the programming tools that are available to the aspiring programmer-magician have been fully translated to Swedish, others have been partly translated and yet others have not been translated at all.

An important milestone was taken 6 months after SvenskMud's start in 1991, when the system was converted to fully support the Swedish language and the ISO-8859-1 standard. This is an 8-bit character code that supports the characters of also western European languages other than English.

4.5.2. Localization

The term localization is used in the software industry to describe the process of adapting a piece of software to the local market:

> Localization refers to the process of infusing a specific cultural context into a previously internationalized product [...]. ...localization is usually limited to translating the text, date and number formats. But creating a product that speaks fluently in another culture involves more than this. (Russo and Boor, 1993, p.342)

A cross-cultural checklist for elements that need to be considered includes text, number, date and time formats, images, symbols, colors, flow and functionality (ibid.).

SvenskMud has – as a reaction to the dominance of the English language on Internet in general and in MUDs in particular – a somehow aggressive official policy of promoting specifically Swedish content in the MUD (Tolke, 1993).

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[9] The figure comes from mid-1996, when only slightly more than half a dozen MUDs of the more than 600 known Internet-accessible MUDs were run in a language other than English.

The policy is however not vehemently enforced as it would then come in conflict with other parallel goals.

The general metaphor in SvenskMud is (supposed to be) one of Sweden sometime in the last century, but anything with a connection to Swedish culture in general is encouraged, be it current politicians or TV personalities, characters from Viking mythology, historical personalities and so on.

In a surveys sent out to all 149 SvenskMud magicians, one questions asked if there is anything specifically Swedish in the MUD that they especially appreciate. Another question asked about the differences between SvenskMud and other MUDs.

Among the things people appreciate the most in SvenskMud are the gods from Nordic mythology (Valhalla[10] with Oden and Tor), characters from Swedish fiction (Nils Holgersson[11], Dynamit-Harry[12], famous contemporary Swedes such as politicians, religious leaders and a famous criminal (Ian Wachtmeister and Bert Karlsson[13], Ulf Ekman, Runar and Carola[14], Clark Olofsson[15]), historical environments and characters (Carl Linné[16], Andrée's trip by air balloon[17], Polhems project[18], The Haga park at the time of Bellman[19]) and comic characters (Bamse).

Several commented that there is an atmosphere in SvenskMud that is special, that SvenskMud has a personality and a social nearness that is difficult to find in other MUDs and that they appreciate the fact that they can use the Swedish language in SvenskMud. Some go on to hypothesize that the atmosphere and the social milieu is an effect of the fact that everything in the MUD is created by people who have written it in their native tongue – as apart from the English-speaking MUDs where English is a second language to many players.

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[10] Valhalla is the dwelling-place of the gods.

[11] Fictional character in Nobel prize winner Selma Lagerlöfs novel of "Nils Holgerssons wonderful trip over Sweden".

[12] Fictional character from a series of popular Swedish movies from the 1980s.

[13] Political leaders in a short-lived populist political party, "New democracy", that held positions in the Swedish parliament for three years in the beginning of the 1990s.

[14] Ulf Ekman is the religious leader of a right-wing Christian church in Sweden. Carola (Häggkvist) and her husband Runar Søgaard have been member of the church. Carola is most known for representing Sweden twice in the Eurovision song contest.

[15] Clark Olofsson was one of the most famous criminals in Sweden during the 1970s and the 1980s.

[16] Carl Linné classified animals and plants and gave them Latin family names in the 18th century.

[17] August Andrée tried to travel to the north pole in an air balloon in the beginning of the century. He failed and died on his journey.

[18] Christoffer Polhem was a Swedish inventor and engineer.

[19] Carl Michal Bellman is a famous Swedish composer and singer who lived during the 18th century.

4.6. BIAS IN SVENSKMUD

As mentioned, what makes SvenskMud Swedish is the Swedish language and all the references to Swedish culture in the MUD. Therefore SvenskMud is in itself an example of a system that systematically discriminates against 1) non-Swedish-speaking persons and 2) Swedish-speaking persons who has little knowledge of Sweden and Swedish culture (for example non-Swedish students of Swedish abroad). This does not constitute bias though, as the discrimination - systematic as it is - is not in any way unfair. The goal of crating a protected zone for the Swedish language and for Swedish cultural expressions in the form of a MUD is not in any way an unreasonable or inappropriate goal.

One of the goals of SvenskMud is to be an environment where everyone is welcome and feels at home. This goal is important enough to win out when there has been conflicts between this and other goals, for example the goal of promoting specifically Swedish content mentioned earlier. Although changes in the system has been taken to make the system more welcoming for newcomers, the fact remains: SvenskMud, as most other MUD systems, is a meritocratic system run by a benevolent but absolute dictator. The basic rule of changing the system is not by making your voice heard, but by reprogramming the system, an act which demands both formal authority and much knowledge.

Some specific hacker values are also built in to the structure of the virtual community. When SvenskMud was started, it was taken for granted that the authority to program in the MUD ("to extend the SvenskMud 'world'") was a desirable goal for all players. Nowadays, with new groups of players finding their way to SvenskMud, this is not the case any longer. Neither does everyone appreciate solving the different "quests" needed to rise in the player hierarchy to eventually graduate from player status to magician. Some for example prefer to use the system purely as a social meeting place. For these players, there is no way to rise in the formal hierarchy and for some magicians who are not interested in learning how to program, there is "nothing left to do" in SvenskMud once they have reached that position. This is an example of an emergent bias of mismatch between users and system design. As time has gone by, the SvenskMud users increasingly diverge from the assumed users of the original design.

5. Concluding remark

This paper should be considered an exploration of issues of bias and cultural adaptation in computer systems and computer-mediated communication.

More on how SvenskMud has been adapted to Swedish language (vernacularization) and to Swedish culture (localization) will be described in greater detail in a future paper.

References

Bowers, J., Button, G. and Sharrock, W.: 1995, Workflow from within and without: Technology and cooperative work on the print industry shopfloor, *in* H. Marmolin, Y. Sundblad, and K. Schmidt (eds.), *Proceedings from the Fourth European Conference on Computer-Supported Cooperative Work*, Stockholm, Sweden.

Bruckman, A.: 1992, Identity workshop: Emergent social and psychological phenomena in text-based virtual reality, *Survey paper*. Available as an electronic document: `http://www.cc.gatech.edu/fac/Amy.Bruckman/papers/index.html#IW`

Carroll, J. M.: 1997, Human-computer interaction: psychology as a science of design, *International Journal of Human-Computer Studies*, 46, 501-522.

Carroll, J. M., Kellogg, W. A. and Rosson, M. B.: 1991, The task-artifact cycle, *in* J. Carroll (ed.), *Designing interaction: Psychology at the Human-Computer Interface*, Cambridge, MA: Cambridge University Press.

Cole, M.: 1996, *Cultural psychology: A once and future discipline*, Cambridge, MA; Belknap Press of Harvard University Press.

Collot, M. and Belmore, N.: 1996, Electronic language: A new variety of English, *in* S. C. Herring (ed.), *Computer-Mediated Communication: Linguistic, social and cross-cultural perspectives*, Amsterdam, Holland: John Benjamins.

Curtis, P.: 1992, Mudding: Social phenomena in text-based virtual realities, *Proceedings of Directions and Implications of Advanced Computing (DIAC'92)* Symposium, Berkeley, CA. Also published in *Intertek*, 3, 26-34. Also available as Xerox PARC *Technical Report CSL-92-4*. Available as electronic document: `ftp://ftp.lambda.moo.mud.org/pub/MOO/papers/DIAC92.txt`.

Dahlquist, U., Lööv, T. and Miegel, F.: 1991, Trollkarlens lärlingar: Fantasykulturen och manlig identitetsutveckling [The wizard's apprentices: Fantasy culture and male identity development], *in* A. Löfgen and M. Norell (eds.), *Att förstå ungdom* [To understand youth], Brutus Östlings bokförlag Sympsion.

Danet, B., Ruedenberg-Wright, L. and Rosenbaum-Tamari, Y.: 1997, Hmmm...where's that smoke coming from?, *Journal of Computer-Mediated Communication*, 2(4), March. Available as electronic document: `http://jcmc.huji.ac.il/jcmc/vol2/issue4/danet.html`

Daun, Å.: 1992, *Den europeiska identiteten: Bidrag till samtal om Sveriges framtid*, [The European identity: Contributions to discussions about the future of Sweden], Rabén and Sjögren.

Daun, Å.: 1994, *Svensk mentalitet* (2nd edn) [Swedish mentality], Rabén Prisma.

Elliott, E. and Kiel, D.: 1997, Introduction, *in* E. Elliott and D. Kiel (eds), *Chaos theory in the social sciences: Foundations and applications*, University of Michigan Press.

Engeström, Y.: 1987, *Learning by expanding*, Helsinki: Orienta-Konsultit Oy.

Engeström, Y.: 1993, Developmental studies as a testbench of activity theory, *in* S. Chaiklin and J. Lave (eds), *Understanding practice: Perspectives on activity and context*, New York: Cambridge University Press.

Ferguson, N.: 1997, Introduction: Virtual history: Towards a 'chaotic' theory of the past, *in* N. Feguson, (ed.), *Virtual history: Alternatives and counterfactuals*, Picador.

Friedman, B. and Nissenbaum, H.: 1996, Bias in computer systems, *ACM Transactions on Information Systems*, 14(3).

Fornäs, J.: 1995, *Cultural theory and late modernity*, London: Sage Publications.

Gleick, J.: 1987, *Chaos: The making of a new science*, Penguin.

Hutchins, E.: 1995, *Cognition in the wild*, Cambridge, MA: MIT Press.

Lévi-Strauss, C.: 1996, *The savage mind*, Chicago: University of Chicago Press.

Levy, S.: 1984, *Hackers: Heroes of the computer revolution*, New York: Dell.

Lewis, C. and Rieman, J.: 1993, *Task-centered user interface design: A practical introduction*. Published as shareware. Original files for the book are available via anonymous ftp from ftp.cs.colorado.edu/pub/cs/distribs/clewis/HCI-Design-Book.

Mantovani, G.: 1996, *New communication environments: from everyday to virtual*, London: Taylor & Francis.

Moran, T. P. and Carroll, J. M. (eds): 1996, *Design rationale: Concepts, Techniques and Use*, Mahwah, NJ: Erlbaum.

Morningstar, C. O. and Farmer, F. R.: 1991, The lessons of Lucasfilm's Habitat, *in* B. Michael (ed.), *Cyberspace: The first steps*, Cambridge, MA: MIT Press.

O'Day, V. L., Bobrow, D. G. and Shirley, M.: 1996, The social-technical design cycle, *Proceedings of Computer-Supported Cooperative Work (CSCW'96),* Cambridge, MA.

Orr, J.: 1990, Sharing knowledge, celebrating identity: Community memory in a service culture, *in* D. Middleton and D. Edwards (eds), *Collective remembering*, London: Sage Publications.

Pea, R. D.: 1993, Person-plus: A distributed view of thinking and learning, *in* G. Salomon (ed.), *Distributed cognitions: Psychological and educational considerations*, Cambridge, MA: Cambridge University Press.

Phillips-Martinsson, J.: 1981, *Swedes, as others see them*, Stockholm, Affärsförlaget.

Quarterman, J. S.: 1993, The global matrix of minds, *in* L. M. Harasim (ed.), *Global networks: Computers and international communication*, Cambridge, MA: MIT Press.

Reid, E.: 1994, *Cultural Formations in Text-Based Virtual Realities*, Master's thesis, Dept. of English, Cultural studies program, University of Melbourne. Available as electronic document: `http://www.ee.mu.oz.au/papers/emr/cult-form.html`.

Rhinegold, H.: 1994, *The virtual community: Homesteading on the electronic frontier*, Reading, MA: Addison-Wesley.

Russo, P. and Boor, S.: 1993, How fluent is your interface? Designing for international users, *Proceedings from INTERCHI'93*, Amsterdam, pp.342-347.

Sproull, L. and Kiesler, S.: 1991, *Connections: New ways of working in the networked organization*, Cambridge, MA: MIT Press.

Thruber, B. D., and Stratton, J.: 1995, Computers, telecommunications and Western culture, *Proceetings of the IFIP sixth world conference on computers in eduction (WCCE'95)*, Birmingham, England.

Toles-Patkin, T.: 1986, Rational coordination of the dungeon, *Journal of popular culture*.

Tolke, L.: 1993, *Handbok för SvenskMudmagiker* [Handbook for SvenskMud-magicians], printed by the author in a limited series.

Turkle, S.: 1995, *Life on the screen: Identity in the age of the Internet*, NY: Simon & Schuster.

Wertsch, J. V.: 1991, *Voices of the Mind: A sociocultural approach to mediated action*, Cambridge, MA: Harvard University Press.

INTERNET: CULTURE DIVERSITY AND UNIFICATION

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Abstract. Culture specifics of the Internet usage is analysed. The analysis done is a preliminary work for the application of the socio-historical theory of human mental development. The practice of the Internet usage is ambigious as it gives rise to both the unification and the diversity. The parameters analysed include the techniques of the hypertexts browsing, and the status/position/rank of the communicators - its influence on holding the floor and turntaking rules, the ways the emotions are expressed while Internet communication, and the way the English language serves the functions of world-wide medium.

1. Culture Relatedness

The impact of Internet on human beings is ever increasing. Internet is a mediator in person-to-person communication patterns, in consuming, booking and banking transactions, in remote group activities, including pen-pals chatting, entertainment and game playing, problems discussion and solving, numerous sorts of cooperation and/or conflict. The psychological aspects of this profound impact might be investigated using the Vygotsky's (1962) socio-historical theory of psychic development. Among the fundamentally basic notions that Vygotsky introduced is the mediation process which includes acquiring and using instruments: material tools, signs, and semiotic systems. Another fundamental notion is the internalization process, which means that the external instruments are internalized, thus forming the core of the higher psychological functions. The external instruments are usually presented to a human being in the social contacts. Communication is thus essential for human psychic development, for acquiring culture norms and correct behavior patterns. Culture that presents to any person socialized material objects and socialized rituals, norms and behavior patterns is yet another fundamental notion introduced by Vygotsky.

The most complex and genuinely human forms of activity are mediated: primitive reactions and simplest generalizations give way to specific reactions and most abstract generalizations, mediated by the culture-related sign systems. Thus, the acquisition of tools and social norms is the mainstream of human psychic development. Information technologies ("high tech") represent the newest and perhaps the most complicated tools that influence psychic development. As G.Salomon phrases it, "the computer affords activities rarely possible with preceding technologies, suggesting that it may have the potential of affecting minds in interesting and important ways" (Salomon, 1990, p.27). It seems important that computer software is a semiotic instrument by its nature. This sign system is nowadays an inherent mediator in both human cognition and communication, in business or work activities, and in entertainment. Therefore the information technologies as a universal mediator are of primary interest to the cognitive and developmental psychologists, and to the communication researchers.

The idea of remediation is introduced by Vygotsky's followers (Cole, 1996) and refers to the psychologically significant changes in the mediation process - say, to the transfer from syllabic to alphabetical writing sign systems. The remediation processes might be traced in the same way the mediation is investigated. In the era of really overwhelming changes in communication technology and verbal behavior patterns - van Dijk (1993) insists that we are experiencing a second communication revolution - (re)mediation is an actual research area. The Internet-related research field seems to be fruitful for both psychology and communication theory.

There is another reason for Vygotsky's theory usage. Global computer networks give a kind of universal access to new ways of communication and cognition. At the same time the representatives of diverse cultures have specific culture-related patterns of cognitive and communicative behavior. Beginning with 1960s, global networking is an activity familiar for North-Americans mostly. But the period of monocultural network activities comes to an end. Now that all the nations have (or will have soon) an adequate access to the Internet, will the newcomers want to adopt the previously worked out patterns, or else they will try to adapt the new mediator to their specific traditions? The description and analysis of the various ways the different cultures transform fairly close (or even identical) mediating instruments forms the core of Vygotsky's theory. Thus we might expect that the prospective remediation problems centered around the Internet-driven activities will be best explained using the paradigm of the socio-historical theory.

The aim of this paper is to stress some culture-related problems inherent in communications via global computer networks (Voiskounsky, 1996). The discussion of these problems seems to be an essential prolegomena to psychological investigation aimed at finding out new cognitive and

communicative mental functions and strategies, new ways of internalization and/or externalization, etc. The most important problem that is stated in this paper might be phrased as follows. Do the Internet-driven practices lead to a greater cultural diversity or to a greater cultural unification? Both tendencies are presented at the time, as it will be discussed with more details in the paper. Thus the solution to this ambigious problem is by now maximally uncertain.

2. Deep Truths

The most global – and vital for the prosperity of the mankind – ideas and concepts of today are multi-faceted and dependent on widely differing opinions and beliefs. One might mention such multi-faceted ideas as most of the moral and legal concepts and practices, political views, religious beliefs, some notions in science and humanities, estimations of art pieces, etc. Since the global politics has now departed with the practice of bipolarity, the new tendency is evident – to embrace, while decision making, the whole multitude of mosaic-like views. Differing and opposing views do not necessarily mean confrontation or inadequacy. In the nuclear physics field, Niels Bohr proposed, the two opposite views might be both true, when put in a broad enough paradigm. These views constitute what he called "deep truths".

The Internet and the Web users have to gain experience in the hypertext browsing. Outside the WWW navigation, no research was intended or done on browsing techniques though browsing is evidently different from reading (and the reading techniques research and teaching is traditional in the education field). An essential difference lies in the fact that for the hypertext navigation individualized and not forced routes are welcomed. Thus, the Web surfing gives a chance for diversity as opposed to unification.

To perform thorough browsing one needs to be keenly interested in learning most various referential and connotative meanings associated with the hypertext notions, or the most various views on certain topics. After having learned various points of view, one is encouraged to make the best possible choice and to elaborate (or else to adopt) the seemingly most correct and personalized view. To work out the individualized position, one needs to acquire background dispositions and high enough educational level for making the personalized choice, and fairly high inner cognitive complexity to deal with plenty of meanings and opinions, with the multi-faceted and multi-optional information.

It is known (Adorno e.a., 1950) that those with an authoritarian background are best suited to adopt the one-sided view, the unique ("the only correct") meaning. People with minor cognitive complexity, with routinized perception habits and reduced personal initiative, as well as lacking personal responsibility for competent decision-making, tend to take a highly limited navigation route

and to select extremely restricted pieces of the available information. "Deep truths" introduced by Niels Bohr are alien to the majority of the residents of authoritarian societies.

To step aside from the physics territory, the Web seems to be the means for saving all the alternative facts, concepts, and interpretations. To learn all the opposites, one has to take an overwhelming navigation route. To avoid the alternatives, a reduced route will do. The latter route leads the Internet users to unification. To seek for (and to gain) diversity while hypertext browsing is believed to be characteristic for the representatives of the cultures brought within the democratic tradition.

Nowadays, they prevail on the Internet, and the resulting Internet is a sort of projection of their democratic attitudes and values. Usually, the democratic tradition relies on the elaborated enough psychological mechanisms of dealing with cognitive complexities, on estimating, comparing, and handling alternatives, on sophisticated decision making. But the access to the Internet is globalizing very rapidly, and most of the newcomers to the Web (those speaking Chinese, Russian and other Slavic languages, Arabian, Spanish, or Portugal) have a definitely authoritarian background. Thus the Internet might turn out to be ambigious: whenever the majority of its users consists of the adepts of authotarianism, the linked browsing techniques will be restricted to the most simple selection methods. The law of contrast says though that for some of those who have just escaped from the totalitarian regime very broad-minded views and interests are characteristic, and they feel eager to find out all the differing opinions. Not so – too often – with the majority of those who experienced totalitarianism, possibly in preceding generations. The Internet and the WWW seen from the democratic/authoritarian point of view might give rise to both uniformity and diversity.

3. Views on Status

When discussed in the terms of diversity and unification, human beings' status on the Internet is a multi-dimensional factor. We shall discuss the problem from three different standpoints.

3.1. STATUS AND DIVERSITY

Computer mediated communication is often expected (Hiltz and Turoff, 1978) to be especially democratic in a sense that in the Usenet discussions one only rarely bothers of ranks and status positions, or of age and gender of the newsgroups discussants. Research findings support this view (Sproull and Kiesler, 1992). The "equalizing" effect of computer mediated communication is widely believed to be a virtue, since in the Usenet discussions, in the e-mail

correspondence, in IRC chats, or in MUDs collaboration no subordination takes place, and only the opinions expressed are really valuable. That is, the stutterers, and the younger participants, and those of minor administrative rank and position, and of course women and ethnic minorities have best chances to express their views and never feel ashamed/embarrassed to contradict, to disagree, and to argue the views expressed by the older ones, or by someone of much higher administrative status. If this is true, Internet is to promote the diversity of the alternative views.

Moreover, the partners communicating via the Internet are believed to be friendly and open, as they are long distance from the social pressure. "In some companies that use computer networking, communication is strikingly open as employees cross barriers of space, time, and social category to share expertise, opinions, and ideas. In a democracy, people believe that everyone should be included on equal terms in communication; no one should be excluded from the free exchange of information" (Sproull and Kiesler, 1992, p.13). The authors conclude: "New communication technology is surprisingly consistent with Western images of democracy". Other researchers strengthen this view, saying: "What people are creating on the Internet is a conversational, demassified, non-representational democracy that transcends the nation-state" (Nguyen and Alexander, 1996, p. 111).

It is essential that the argumentation base and the cultural level of the Internet discussions is high due to the fact that the Usenet subscribers have worked out the tradition of explicit citations: the excerpts from the other discussants' previous messages that are actually opposed or agreed upon are usually inserted to a new message in a prefixed form. This tradition is really beneficial and leads to more solid argumentation than it usually takes place in face-to-face polemical discussions. The tradition resembles that of the publications in the research journals, but in the Usenet newsgroups citations are widely used in the contexts going far beyond the scientific problems and research discussions. Thus the projective diversity of opinions expressed and comprehended during the Internet-related discussions is fundamentally based.

3.2. STATUS AND UNIFICATION

The optimistically democratic view on the computer mediated communication meets strong objections based mostly on the fact that the group communication via global or local area networks is a part of the existing social hierarchical networks. "The 'faceless' nature of the communication in CMC may often reinforce the bureaucratic or hierarchical dimensions of interaction for this reason" (Spears and Lea, 1994). In a thorough ananlysis of the problem, G.Mantovani supports the findings that the opinions expressed by networkers of high or low positions might meet quite a different amount of attention. "How

can we monitor and evaluate the quality of the attention given by the audience to a speaker in an electronic situation? Will the audience pay equal attention to the messages of a low-status member of the group and to those of a high-status member?" (Mantovani, 1994, p.50). And indeed, there is experimental evidence that the high-status networkers dominate the group discussions (Weisband et al., 1995). "Social status is usually detectable", concludes Ma (1996, p. 185).

Unlike face-to-face communication, the subscribers to the newsgroups may "hold the floor" as long as needed. When real-time discussions occur, the groupware includes functions that are analogous to the "turntaking" rules. Some experimental results suggest that explicit turntaking rules (for which the groupware is responsible) are more efficient than anarchical and voluntary interruptions (MacKinlay e.a., 1994). Neither status nor age and gender of the preceding discussants influence the networker when it is his/her turn to hold the floor.

Still, Perrolle (1991) believes that gender differences lead to the increase of the effectiveness of holding the floor. She hypothesizes that "computer-mediated communication reduces the social solidarity in existing social groups, but it facilitates conversations among strangers" (Perrolle, 1991, p. 357). In case the strangers differ from the aborigines in their cultural background, they face special problems – one of those mentioned in R.Ma's paper: "East Asians do not always verbalize "no" to turn down another's proposal. The "yes" or "no" message can be encoded and decoded by varying the level of enthusiasm associated with an ambiguous "yes" message... It would be much more difficult to create such a variation in computer-mediated conversations" (Ma, 1996, p. 178).

Mantovani believes that e-mail is "of little use in the first stages of the formation of a new group or of the earlier development of a new project" (Mantovani, 1994, p. 58). This view is supported by the fact that CMC is rarely or ineffectively used for negotiations, which is an essential part of democratic traditions. Mantovani gives two strong conclusions: first, that "CMC does not generally foster democracy in organizations" (Mantovani, 1994, p. 57), and second, that "CMC is not friendly toward all its potential and actual users" (Ibid). These findings validate the idea that the rank/position/status/gender/age factors reduce diversity on the Internet and lead to unification. The gender-related issues need more profound discussion, which is out of the range of this paper.

3.3. STATUS AND CULTURE

The abovementioned considerations are entirely consistent with the principles of the Western democratic tradition, as Lee Sproull and Sara Kiesler identified it. To grasp an idea of an alternative position, try to imagine for a moment and

to share the uneasiness of a newsgroup discussant (say, born in the Far East Asia): the etiquette and even linguistic structures of his/her mother tongue demand that the age/gender/status/position/what_else are precisely known before addressing another participants. Although all this is not really needed when using English, that sort of uneasiness might form a certain psychological barrier for the discussant, and thus might restrict (or influence in some other negative way) his/her participation in newsgroup discussions.

This might be true, taken for example Japanese-born networkers, as their linguistic politeness rules system ("keigo") includes a continuum of attitudes towards the other discussants, whose positions (as well as a great deal of another necessary data) are to be definitely and precisely known beforehand. The attitudes of discussants to the problems under discussion might lead to the choice of quite differing verbal formulae, too. Forced ignoring of etiquette and politeness rules make a networker change radically his/her verbal habits. It's worth mentioning that the unique emoticons worked out by the Japanese network communicators "show an affection without any specific indication" of the modality of emotions, or even "to apologize some possible offense" (Aoki, 1994). The forced or even deliberate change of verbal habits leads certainly to a decresed diversity.

One may predict that the uneasiness of this sort is reduced taken the most cosmopolitic samples (within any particular ethnos) of those networkers for whom English is not their mother tongue. At the same time when discussing really important problems the world Internet community would prefer that the less cosmopolitic samples (within every particular nation) expressed their views, too. Diversity is definitely more supposed to lead to pure originality, and at the same time to consensus, than the unified and slightly cosmopolitic population of the existing Internet community. Culture related barriers are certainly not adding any benefits to the effective group discussions via global computer networks. Thus, the status-related ways of increasing both diversity and unification on the Internet are dependent on the culture-related factors.

4. Expression of Emotions

Generally, computer mediated communication is supposed to be personal and spontaneous. Personal means that unlike the process of official documents exchange, the discussions in the Usenet newsgroups, or in the e-mail/BBS communication, in IRCs and MUDs contain personal opinions and feelings. The views expressed during these group or one-to-one discussions are usually rather laconic, and lack mentioning possible background knowledge. Spontaneousness means that the networkers react to opinions and beliefs expressed by their partners very rapidly - sometimes even before reading the message to the end.

In personal spontaneous dialogues there is plenty of room for expressing feelings and affects. This is surely the case with human to human links mediated by global computer networks. Investigations show that 25% e-mail messages produced by undergraduates (new adepts to e-mail correspondence) contain fragments of intimate communication (McCormick and McCormick, 1992). The obstacle to the emotional richness in these interactions is sometimes poor command of the language used.

Special signs expressing the emotional states - "smileys", or "emoticons" (Panko, 1993; Rice and Love, 1987; Sproull and Kiesler, 1992) - are to compensate the lack of adequate means of expressing emotions when using the Internet services. The nearest analogue of smileys - the facial expressions of a human face. Usually, several basic emotions are stressed: joy, surprise, contempt, suffering, fear and anger; sometimes the list of basic emotions includes more positions (Izard, 1977). Each emotion has its own conventional image with the eyes, eyebrows, nose, mouth and other facial elements indicated.

The perception of basic emotions by means of facial expression may differ due to the age and the ethnocultural origin. The psychological concept of the emotional intellect is worked out recently: the emotional intellect is defined as "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (Salovey and Mayer, 1994, p. 312). The researchers point to the three facets of the emotional intellect: accurate appraisal and expression of emotions, adaptive regulation of emotions, and utilization of emotion-based knowledge. From numerous studies (Davitz, 1969; Izard, 1977) it is known that the meanings of emotions develop: that is, when children grow older and socialize, most of them learn to express and comprehend emotional states with greater accuracy, they recognize emotions, classify and verbalize them more precisely, and they show more adequate reactions to the whole range of affects expressed by their communicative partners. Besides, people differ in the accuracy of identification of emotions expressed with faces (Buck, 1984). These psychological findings support an idea that the comprehension of smileys is age-dependent, and culture-dependent.

Since children, beginning with early age, find great interest in the Internet, and get accustomed to the computer mediated communication, the age dependency of the emotional intellect in its CMC-related applications needs to be investigated. The accuracy of the perception of facial expressions of six basic emotions have been examined experimentally (Voiskounsky, 1996).The conclusion is that the perception of emotions (according to the pictographs of facial expressions) is age-dependent: skills in decoding the emotions, taken 7 years old children, are less formed, complete, exact and entire as compared to children who are 10 years old. Differences in a relative easyness of recognition of certain basic emotions have been discovered; joy and suffering are

recognized best; several specific features necessary for adequate perception have been identified. In the younger group the meaning of contempt is not separated and selected while pictographs classifying.

The ethnic and culture differences should be obvious as well. To recognize the smileys, one needs fairly developed mental skills of rotating the pictographs (90 degrees, clockwise). Thus, the whole process of recognition is most familiar to those whose cultural habits include left to right writing and reading. This mode of reading and writing is habitual for native English (or another European languages) speakers, but it is not universal. Billions of people are best trained to read and write top to down, or right to left. Will they automatically recognise the face-like pictographs, or they will find the ways the emotions are marked to be extremely uneasy and unnatural? There are evidences that they might favor latter supposition. Namely, the emoticons used while telecommunicating in Japanese language, are straight – in the sense that to recognize them one needs no rotation at all (Aoki, 1994).

The non-exhaustive (based on the discussion of the emotional intellect problem field) answer to the main question, namely, whether the Internet leads to the increase of uniformity, or, contrary, of diversity, might be phrased as follows. The "Cyberworld population" has worked out a seemingly universal system of fixing the emotional states while communicating via computers and global networks. This system is based on the use of smileys, or emoticons. Active use and recognition of emoticons is age dependent, and what is important, the ethnic "dialects" of the lexicon of smileys have emerged. The expected expansion to the Cyberworld of representatives of those ethnoses that have now only limited interest and access to the Internet might result in major changes in the now-habitual nonverbal language of expressing emotions.

5. Languages in Contact

5.1. ADAPTATION WITHIN NEWSGROUPS

The messages produced in the Usenet newsgroups, or in IRCs and MUDs, might be thought of as being close to a some sort of professional English texts. Though the situation is partly analogous to adapting English as a means of professional communication in numerous technical fields, the difference is nevertheless crucial. The fact is that the Internet users cannot be treated as representing any single profession. There is some resemblance with the language usage in the Middle Age Europe: all the educated people spoke and comprehended classical Latin, although their professions differed greatly. With not a single native speaker, Latin was functioning as a means of education, religion, and research.

The within-newsgroups language adaptation takes usual forms. First, an increasing proportion of the Internet users do not have a good command of English, and thus they use simplified grammar constructions and a very limited vocabulary. And second, the fluent English speakers (or writers) start to simplify and to censure their speech in a manner as though they are supposed to address a foreigner. It makes great sense: non-native speakers of English would face otherwise even greater problems with comprehension, they will be able at best to guess the meanings of non-simplified phrases produced by native speakers of English. It is known that non-native English speakers, particularly those who first learnt non-alphabetical writing systems, transfer their literacy processing skills from their mother tongue to English, and have serious problems when meet for example unknown words (Holm and Dodd, 1996). The unknown words might be inserted both by newsgroups subscribers and by those who compile "action list" words, or "generic actions" (Argyle and Shields, 1996): the terms that denote simple - and sometimes physical - actions. Lists of these words are at everyone's disposal whenever one needs to express feelings, actions, etc.

That is, really complex and/or laconic and/or metaphorical expressions might turn out to be impractical, and the best experts in English need to adapt to the worst ones when communicating via the Internet. Poor comprehension of genuine English messages might result in mass unsubscribing those newsgroups where the native speakers of English do not self-censure the messages produced and avoid high redundancy. The mechanism described leads to reducing the variety of opinions expressed in newsgroups. Mutual, quite definite and easy comprehension is a prerequisite for multi-ethnic discussions in newsgroups. From the fact that even the experts in English are not supposed to use (while communicating via Internet) the most refined language styles, one might easily deduce that there are rather strong prerequisites for the unification process related with the world-wide Internet communication.

5.2. WAR OF WORDS

The language used for the Internet inter-ethnic communication and for the instructions on how to get access to numerous databases and to navigate through the hypertexts is mostly English. When the new medium emerged, and years after (Hiltz and Turoff, 1978) the networkers were almost solely North Americans, and the usage of English seemed more than natural. Now that the computer mediated communication connects people thoroughout the globe, the usage of English meets problems. The problem is sometimes called the "war of words" (Pollack, 1995). The discussion takes places rather intensively, and mostly in popular press (Mandel, 1996; Pollack, 1995, 1996; Specter, 1996).

English seems to have no alternative in the computer networking field, but the real problem is that the mother tongues of the ever ascending number of networkers differ, and for the majority of them English is usually a taught language. Another aspect is that a great many of societies are not happy with the fact that to have an access to the most favorable Internet services one needs to comprehend and to speak English. Many countries try to make their best to install and maintain pretty enough and valuable enough distant information sources and lively newsgroups using their national languages.

The problem is not connected exclusively to the Internet usage. Just the same problems face the initiators of world-wide exchange of TV entertainment programs, popular music pieces, technological documentation, etc. Tourists usually find it most practical to have at least a limited command of English to make inquiries. The ships' and air jets' commanders all over the world have no options - they have to communicate only in English. Different states (France for example) give serious efforts to protect their native languages, and to restrict the expansion of English. Some other societies make efforts to enhance their residents the effective usage of world telecommunication links. For example, Malaysia is said "to offer more education in English to prepare its citizens for the information age" (Pollack, 1995). The strategies and tactics thus differ a lot.

There are in fact many other "wars of words" - to name the discrepancy between the poor and the rich, or between the illiterate and the educated, or even the feminists' opposition to the "man made language" (Spender, 1980). The Internet in a way accelerates very real and very actual linguistic problems inherent for the modern mankind.

The levels of mastering English vary greatly; the top level would be the usage and understanding of laconic style and witty phrases, including metaphors, epithets, and many other rhetorical figures. This is perhaps the prerogative of qualified journalists and writers, and all the verbally gifted persons, especially if they have taken – years ago, perhaps - creative writing courses. Moreover, the perfect command of English supposes the knowledge of culture realities, of slang expressions, and of most different layers of language usage. Unlikely that this level is useful while computer mediated commuication. At the moment, the Internet messages are composed of a really peculiar form of speech that combines attributes inherent for the written and oral speech, for dialogues and monologues (Voiskounsky, 1997). Moreover, a great deal of Internet users differ greatly in their language skills and foreign cultures expertize. This differentiation impacts the effectiveness of the Internet usage and the distinctness of the psychological dimensions in the cyberspace.

5.3. NETWORK ENGLISH

The dominant language of the Internet communication is sometimes compared to the Basic English. And why not to a pidgin English (Voiskounsky, 1995)?

There are several ways of a pidgin formation, when two or more languages are in contact. To illustrate one of them, imagine that two adolescents found themselves suddenly at an inhabited island; both of them learned English at school for one year only (Trudgill, 1983). This is an example with the speakers of three languages forming jointly a pidgin or a lingua franca. In case only one of these three languages is dominant (for example, English), the pidgin will keep developing while non-natives communicate to one another using the dominant language. There are another principles of pidgins formation, when communities of speakers share a certain geographical area (like the speakers of Bantu languages in the Central and Southern Africa), or else when two non-cognate languages come to contact on a permanent basis; say, a local and a European (mostly Portugal, English, Spanish, or French) languages.

The pidgins often reserve the lexical system close to European languages (some local lexical items are usually added, though); phonetic system is the subject of modifications and adaptations to the local articulation habits (usually diphtongs are reduced to the monophonemic sounds, fricatives change to explosives or affricates, etc.); grammar system of the most of the European languages keeps to be simplified (copula verbs may disappear, the same with the case and number of nouns and adjectives, verbs retain the sole unchangeable form, analytical tendencies strengthen, i.e. connections between the words in phrases are marked by special words instead of affixes, etc.).

Global networking creates similar situations of the English language usage by non-native speakers. By simplification and by mistakenly introducing some features of their native languages (different word order, for example) into English the Internet users are supposed to form actively an entirely new form of a pidgin English, which might be called a "Network English". It is an unique example of a written version of a pidgin, as the standard way of forming pidgins was always a prerogative of spoken communication (Bell, 1976; Trudgill, 1983).

5.4. IMPACT ON NON-ENGLISH COMMUNICATION

Both network and non-network versions of English are influencing non-English communication patterns. Journalists are discussing for example the "CyberSpanglish" - the Internet-related Spanish language spoiled (or enriched?) with the English terminology (Rivas, 1996). The same might be said of the Russian language usage in teleconferences (i.e. newsgroups). This might be illustrated with some examples derived from the real network communication protocols. English words, phrases and abbreviations are inserted - both in

Cyrillics and in Latin - into Russian Cyrillic messages. The selective process of the pidgin formation starts with the certain English vocabulary layer; i.e., terminology used in the computer programming and computer networking fields. This layer opposes the most usual layers participating in the traditional pidgin formation - namely, the trading and the daily life vocabulary layer.

In a survey administered in 1994, Russian networkers were asked to estimate the proportion of Russian/English/non-English network communication. Of 489 respondents, 45 per cent use mostly Russian, and 18 per cent use Russian only. The equal proportion of Russian and English correspondence is characteristic for 27 per cent of respondents, and 10 per cent of them use mostly English. Thus there is a considerable amount of networkers who are regular users of English and are possibly able to provoke (along with many other non-native English speakers who are non-Russians) the pidgin formation.

In Russian-language teleconferences the alphabets are intermixed (that is, both the Latin and the Cyrillics are widely used). For example, names of foreign persons and/or companies are usually inserted in Latin transcription. The same might occur with certain terms which have no good Russian equivalents, or when citations from the messages produced originally in Latin alphabet are discussed. The intermixed alphabets are used outside these contexts as well, for the sake of making the messages more elaborative and argumentative, or for humorous reasons. The latter might be traced when observing the signature parts of messages, which very often include maxims and/or witty phrases in foreign languages (mostly in English). These signatures function as a kind of mottoes/logotypes characterising in some way the networkers themselves. Thus the possible extension of the Internet Signature Project (Tsang et al., 1994) to take into consideration Russian-born signatures might show certain specifics.

English phrases and words are used in national-language computer conferences in order to shorten the messages. Two ways of shortening might be noted. First, foreign phrases are inserted into Russian messages, sometimes as abbreviations. For example, popular foreign abbreviations are IMHO and BTW (used mostly in Latin notation, but sometimes in Cyrillics as well), which mean respectively: "In my honest (humble) opinion" and "By the way". Second, English words (in Cyrillic notation) are used as a kind of stem: in combination with common endings/prefixes/suffixes these wordstems constitute Russian-like words. Note for example the word `gate`, that is heavily used in the context of computer telecommunications. Combined with adequate Russian prefixes and endings, the following English terms are constantly used in Russian language messages: PC, message, mail, mailbox, crosspost, hub, telnet, voice, login, routing, node, sysop, direct, source, flame, spam, programmer, point, link, user, etc. Usually, these terms have adequate Russian language equivalents, which are neglected.

5.5. IMPACT ON ENGLISH USAGE

The standard way of a pidgin formation is the simplification of English and its adaptation to a Russian-speaking population having limited knowledge of English. The adaptation and simplification processes concern the usage of a limited vocabulary (consisting of two main compounds - simple English taught at high-school, and professional English), and of incorrect and simplified grammar (usage of the present tenses only, loan translations and transmissions of Russian word order in a phrase, etc.). The occurences of that kind of simplified language usage might be easily observed in the English messages produced by native Russian speakers within any Usenet newsgroup.

One might expect that similar processes take place in another geographical areas where networkers speak different languages. When Russians and some other non-native English speakers start collaborating and corresponding, the "standard" sociolinguistic situation emerges. Namely, the speakers of two non-dominant languages intensively correspond in dominant English. It should be argued thus that the computer networking gives all the needed chances to form a pidgin "Network English": non-native English speakers born in diverse geographical regions and under diverse sociolinguistic settings communicate in a simplified basic Network English. This is a way of verbal unification within the Internet usage. The unification is based on the prevalent diversity of the ethnic group members that might participate in the network English formation. Thus, the more diverse cultural settings, the less evident and proper are the effects of the unification process.

6. Conclusions

Culture specifics impacts the Internet usage. There are certain factors that lead to both diversity and unification of the Internet-related communication and cognition. Among the discussed factors the unification might prevail, but the final result is not certain yet. Along with the discussed parameters (i.e., the hypertext browsing techniques, the status and the adaptation within newsgroups, the expression of emotions, and the pidginized "Network English" formation) a great many other parameters have to be analysed to come to the final conclusion. The problem discussed is ambigious.

Acknowledgements

References

Adorno, T.W., Frenkel-Brunswick, E., Levinson, D. and Sanford, R.: 1950, *The Authoritarian Personality*, Harper and Row, NY.

Aoki, K.: 1994, Virtual Communities in Japan, *Paper presented at the Pacific Telecommunications Council Conference*. Available at http://www.uni-koeln.de/themen/cmc/text/aoki94.txt

Argyle, K. and Shields, R.: 1996, Is there a Body in the Net? *in* R.Shields (ed.), *Cultures of Internet: Virtual Spaces, Real Histories, Living Bodies*, Sage Publications, pp. 58-69.

Bell, R. T.: 1976, *Sociolinguistics: Goals, Approaches, and Problems*, B. T. Batsford, London.

Buck, R.: 1984, *The Communication of Emotion*, Guilford Press.

Cole, M.: 1996, *Cultural Psychology: A Once and Future Discipline*, The Belknap Press of Harvard University Press, Cambridge, MA.

Davitz, J. R.: 1969, *The Language of Emotion*, Academic Press.

van Dijk, J. A. G. M.: 1993, Communication Networks and Modernization, *Communication Research*, **20**(3), pp. 384-407.

Hiltz, S. R. and Turoff, M.: 1978, *The Network Nation: Human Communication Via Computer*, Addison-Wesley.

Holm, A. and Dodd, B.: 1996, The effect of first written language on the acquisition of English literacy, *Cognition*, **59**(2), 119-147.

Izard, C. E.: 1977, *Human Emotions*, Plenum Press.

Ma, R.: 1996, Computer-mediated conversations as a new dimension of intercultural communication between East Asian and North American college students, *in* S. C. Herring (ed.), *Computer-Mediated Communication: Linguistic, Social and Cross-Cultural Perspectives*, John Benjamins, Amsterdam/Philadelphia, pp. 173-185.

MacKinlay, A., Proctor, R., Masting, O., Woodburn, R. and Arnott, J.: 1994, Studies of turn-taking in computer-mediated communication, *Interacting With Computers*, **6**(2), 151-171.

Mandel, M. J.: 1996, A World Wide Web for Tout le Monde, *Business Week*, April 1, **3469**, 36.

Mantovani, G.: 1994, Is computer-mediated communication intrinsically apt to enhance democracy in organizations? *Human Relations*, **47**(1), 45-62.

McCormick, N. B. and McCormick, J. W.: 1992, Computer friends and foes: Content of undergraduates' electronic mail, *Computers in Human Behavior*, **8**(4), 379-405.

Nguyen, D. T. and Alexander, J.: 1996, The coming of cyberspacetime and the end of the polity, *in* R. Shields (ed.), *Cultures of Internet: Virtual Spaces, Real Histories, Living Bodies*, Sage Publications, pp. 99-124.

Panko, R. R.: 1993, Designing groupware for implementation, *in* J. R. Schement and B. D. Ruben (eds), *Between Communication and Information*, Transaction Publishers, pp. 335-367.

Perrolle, J. A.: 1991, Conversation and trust in computer interfaces, *in* C. Dunlop and R. Kling (eds), *Computerization and Controversy: Value Conflicts and Social Choices*, Academic Press, Boston, pp. 350-363.

Pollack, A.: 1995, Cultural war of words looms on the Internet: Non-English-speaking countries fear US cyberspace dominance, *International Herald Tribune*, August 8, pp. 1,6.

Pollack, A.: 1996, A cyberspace front in a multicultural world, *The New York Times*, August 7, **144**, C1.

Rice, R. E. and Love, G.: 1987, Electronic emotion: Socioemotional content in a computer-mediated communication network, *Communication Research*, **14** (1), 85-108.

Rivas, Y.M.: 1996, Hablas `CyberSpanglish'? You might find that you already do, *The Hispanic American Historical Review*, **9**(4), 50.

Salomon, G.: 1990, Cognitive effects with and of computer technology, *Communication Research*, **17**(1), 26-44.

Salovey, P. and Mayer, J. D.: 1994, Some final thoughts about personality and intelligence, *in* R. J.Sternberg and P .Ruzgis (eds), *Personality and Intelligence*, Cambridge University Press, pp. 303-318.

Spears, R. and Lea, M.: 1994, Panacea or panopticon? The hidden power in computer-mediated communication, *Communication Research*, **21**(4), 427-459.

Specter, M.: 1996, World, Wide, Web: 3 English words*, The New York Times*, April 14, **145**, E1.

Spender, D.: 1980*, Man Made Language*, Routledge and Kegan Paul.

Sproull, L. and Kiesler, S.: 1992, *Connections: New Ways of Working in the Networked Organization*, MIT Press.

Trudgill, P.: 1983*, Sociolinguistics: An Introduction to Language and Society*, Penguin Books.

Tsang, P., Patchin-Houston, G. and Tse, S.: 1994, Internet signature in electronic communications: Personal, organizational, and commercial applications, *Paper presented at the 44th Annual Conference of the International Communication Association,* July 11-15, Sydney, Australia.

Voiskounsky, A. E.: 1995, Network pidgin formation, *in* Y. Sundblad, K. Tollmar, T. Reignier, L. Fahlen and J. Forsyth (eds.), *Conference Supplement, European Conference on Computer Supported Cooperative Work*, KTH Publ., Stockholm, Sweden, pp. 51-52.

Voiskounsky, A. E.: 1996, Culture specifics on the Internet, *in* L. K. Yong, L. Herman, Y. K .Leung and J. Moyes (eds.), *Human Factors of IT: Enhancing Productivity and Quality of Life, Proceedings of the Asian-Pacific Human-Computer Interaction Conference APCHI'96,* ITI Publ., Singapore, pp. 151-161.

Voiskounsky, A. E.: 1998, Telelogue speech, *in* F. Sudweeks, M. McLaughlin and S. Rafaeli (eds), *Network and Netplay: Virtual Groups on the Internet*, MIT Press, Cambridge, MA, pp. 27-40.

Vygotsky, L. S.: 1962, *Thought and Language*, MIT Press, Cambridge, MA.

Weisband, S. R., Schneider, S. K. and Connolly, T.: 1995, Computer-mediated communication and social information: Status salience and status differences*, Academy of Management Journal*, **38**(4), 1124-1151.

COMMUNAL ETHOS ON A RUSSIAN ÉMIGRÉ WEB SITE

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Abstract. This paper will analyze how participants on the Russian émigré web site "Little Russia in San Antonio, Texas" rhetorically construct a Russian communal ethos in cyberspace. This ethos emerges primarily through two activities: the creation of cultural and technical resources, and the connecting with other people and other web pages through the site. Together, these activities form a rhetorical community on the web, a community that is itself a new form of transnational activity. This new communal form is enabled by the robust nature of web communicative forms as well as the web's transgression of national and cultural boundaries, permitting the incorporation of diverse people and diverse rhetorics in the forming, contestation, and negotiation of Russian cultural identity online. The outcome is a Russian cultural identification that results not from a unified official voice but rather, through the mix and clash of a multiplicity of contrasting and often contending perspectives.

1. Introduction

Many Russian-American émigré communities have a physical place where people gather to talk and share stories, as well as to obtain food, news, and other culturally specific items. These "rhetorical gathering places" typically take the form of émigré-owned stores, cafes, and churches (cf. Tarasoff 1989). With the proliferation of the World Wide Web, more and more communities are forging such places in cyberspace.

This paper will analyze how one such place, the web site "Little Russia in San Antonio, Texas" (located at http://mars.uthsca.edu/Russia/) rhetorically constructs a communal identification in cyberspace. This cultural identification is expressed through two primary activities on the "Little Russia" web site. The first one is the creation of resources and sharing of knowledge about Russian culture. The second activity is what one might call "connectivity," the creating of hypertext linkages and dialoguing with other participants on various bulletin boards provided by the web site. Together, these activities form a virtual community on the web, a community that is a form of transnational activity between the Russian diaspora and Russians in Russia itself.

The community of participants engaged in these activities is diverse. "Little Russia" is comprised of ethnic Russians living within Russia, Russian émigrés living in the United States and elsewhere, as well as non-Russian peoples in both Russia proper and outside of Russia. These participants employ distinct rhetorics in the formation of cultural resources, sharing of cultural knowledge, and forming of connections with others linked to the site. What makes these articulations novel is that on the World Wide Web, the form of communication is more rapid, transnational, and participatory than in more traditional media forms, such as newspapers, books, television, or radio. To put it simply, the World Wide Web affords a unique combination of interactivity, content, and media richness that permits more people from more locations to receive and communicate sound, pictures, text, and even animation at extremely fast speeds.

These aspects affect the shape of online communities. As Steven Jones writes, computer mediated communication "is at once technology, medium, and engine of social relations. It not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space" (1995:16). One example has been cited by Nancy Baym (1993), who argues that the infrastructure of Usenet shapes communal identifications in the newsgroup rec.arts.tv.soaps (see also Paul Kelly 1995).

The interactivity and richness of the web offers a more involved form of interaction with the medium, and this interaction plays a significant role in defining the contours of the "Little Russia" gathering place. The web permits a more participatory reading, in which content is largely shaped by direct reader contribution. Thus, one relies less on the voice of one representative "author" to serve as a conduit or mouthpiece for the collective tradition (cf. Bauman 1986). Rather, there are many voices of many authors, each with their own diverse ethnicities and histories that contribute to the character of the site.

Because of this diversity, the notion of what authentically represents Russian culture on "Little Russia" is hybridic and ambivalent. In cyberspace, cultural identifications are less the result of monologic discourses that emerge from within a specific bounded territory and more the product of a mix and clash of often contradictory and contesting points of view that emerge from varied places. Authenticity finds a rhetorical counterpart in the concept of "ethos," which refers to the character of a speaker. But while many theorists see ethos as focused on the solitary speaker (the private individual), ethos at its heart is rooted in notions of community and place. Thus, what produces a Russian ethos on "Little Russia" is collaboratively established. Within the context of the World Wide Web medium, this notion of ethos as "communal place" acquires new dimensions and figures prominently in the construction of identity on "Little Russia."

2. "Little Russia" as a Rhetorical Gathering Place

The best metaphor for a site like "Little Russia" is that of a "rhetorical gathering place." According to Kevin Hunt, web sites function as "rhetorical 'gathering places" in that they are virtual locations in which users "enter and share in [a specific set of communal] values" (1996, online). The concept of "rhetorical gathering place" itself originates with the classical Greek notion of "ethos." One of three "proofs" of Aristotle's rhetoric, ethos refers to the character or credibility of a speaker as defined through the choices made in his or her speech (Aristotle 1991:37). But while many theorists see ethos as focused on the solitary speaker (the private individual), Aristotle probably had in mind a more public view of ethos. While Aristotle defined rhetoric proper as "the ability, in each particular case, to see the available means of persuasion" (1991:36) nowhere does Aristotle say rhetoric itself is to persuade a passive audience. Rather, it is a collaborative activity designed to practice a form of "krisis" (evaluation, judgement) by locating possibilities and exigencies for persuasion (Farrell 1993:94). Aristotle envisions that this rhetoric could not come into existence without a certain type of audience, one that acts as both judge and chooser. Aristotle's audience is not simply a "market," but rather, a group with social responsibility that has a capacity for rational choice. Rhetoric forms a climate of civic friendship wherein a "language of engaged community" can bring people together to reflect, refine, and judge (Farrell 1993:97).

In addition to its communal aspect, ethos also has the metaphor of public "place" at its heart. According to Michael Halloran, "the most concrete meaning given for the term in the Greek lexicon is 'a habitual gathering place,' and I suspect that it is upon this image of people gathering together in a public place, sharing experiences and ideas, that its meaning as character rests. To have ethos is to manifest the virtues most valued by the culture to and for which one speaks..." (1984: 60). This spatial notion of ethos is fitting to apply to the Web because it is often conceived in terms of geographic and spatial metaphors (Gurak 1991). For example, one "surfs" the web, one "navigates" through a web page, and one "goes" to a web site. Web sites themselves are often constructed in terms of spatial metaphors. For example, "Little Russia" features the "Little Russia Newsstand" and "The Little Russia Lounge."

For Kevin Hunt, communal ethos on the web is expressed in three primary activities: individual creativity (for example, creating a personal home page), connectivity and interactivity (establishing links to others), and reciprocity (the sharing of resources and information) (1996). But while these activities work to consolidate a shared ethos in cyberspace, the web, by virtue of its fluid and protean nature, also loosens specific identifications. A web community like "Little Russia" is comprised of a shifting set of participants asynchronously logging on from different parts of the world. It brings together both ethnic

Russians and non-Russians from within Russia and without. As Baym notes, all interaction on computer mediated communication is "simultaneously situated in multiple external contexts. The preexisting speech communities . . . provide social understandings and practices through and against which interaction in the new computer-mediated-context develops. CMC use is always nested in the national and international cultures of which its participants are members" (1995:141). Thus, communal ethos on the web emerges less from the cultural understandings of a specific geographic locality and more from those of a virtual global "ethnoscape."

The term "ethnoscape" is derived from the work of Arjun Appadurai, who defines it as "a landscape of persons who constitute the shifting world in which we live: tourists, immigrants, refugees, exiles, guest workers and other moving groups and persons..." (Appadurai 1990:297). Ethnoscapes form as groups migrate, regroup in new locations, reconstruct histories, and reconfigure their ethnic 'projects" (1991:191). Appadurai argues that ethnoscapes have emerged from changes in global politics, marked by an organizational shift from "binary positionalities" dominated by space to one of disjunctive global "flows" (1990:296). The result is that an ethnoscape is a *deterritorialized* domain, a domain which is severed from the links to "space, stability, and cultural reproduction" (1991:191). Deterritorialization loosens the "bonds between people, wealth, and territories [which] fundamentally alter the basis of cultural reproduction" (1991:192). Deterritorialization brings groups into contact with one another (such as "lower-class" and "wealthy" sectors) that normally do not come together.

The "ethnoscape" of "Little Russia" tests the boundaries of the more homogenous, closed notion of "ethos" inherited from ancient Greek rhetoric. Ancient Greek "ethos," while communal in nature, envisioned its community as a relatively homogenous, geographic, and aristocratic version of the "polis"(Miller 1993:234). The web provides a much more diverse ethos that has a deterritorialized notion of place at its heart. As a space organized in terms of flows rather than binary positions, it might be instructive to view web communities as "cultures as sites traversed," perpetually in-between locations of permanent dwelling, temporarily inhabited by newcomers and repeat visitors (Clifford 1992:103).

As the web permeates geographic and temporal boundaries, participants form rhetorics that are deterritorialized from Russian culture altogether. On "Little Russia", ethnic Russians, Russian émigrés, and non-Russians come together temporarily to share knowledge and collectively articulate, contest, debate, and negotiate Russian culture and identity. Émigré communities used to maintaining cultural values in geographic seclusion must incorporate a wide range of cultural ideas into the discourse of communal identity on the web. But while the ethnoscape of "Little Russia" is partially the product of the mix and

clash of diverse rhetorics deterritorialized from specific geographic identifications, it is also produced by rhetorics that consciously create a sense of stability and fixedness. Pictures, stories, music, and other elements give the site a distinctly Russian identity. Thus, the ethnoscape of Russian émigré webs is the product of a dialectical flow between rhetorics of fixing and loosening. To see how this dialectical flow creates this ethnoscape, we need to turn to a content analysis of the "Little Russia" web site itself.

3. Cultural and Technical Resources

"Little Russia" is maintained by Vladimir Pekkel, an instructor and researcher at the University of Texas Health Science Center. The graphics were designed by Julia Ilyutovich, who works for the NASA Lewis Research Center in Cleveland, Ohio. Both are émigrés from Russia. The site has received many awards for its design and content, including the Magellan 4-Star Site Award, the Russian-American Award for the Best Presentation of Russian Culture in America, the University of Maryland Russia Club's Award of Excellence, The 5-Star Award by Luckman Interactive, and others.

"Little Russia" contains a wealth of cultural information in pictorial, audio, and interactive format. The site features a photo gallery depicting major attractions in Russia, including photos of famous buildings in Moscow, St. Petersburg, Karelia, and other locations. Each picture is annotated in English to provide a brief historical context. English usage here is largely pragmatic. Since English is the most widely used tongue on the Internet (cf. Paolillo 1996), its usage here is intended to appeal to the broadest possible audience. The site also contains a collection of links to Russian literature resources, though surprisingly it is very modest (surprising because Russian culture at large greatly values its literary tradition).

The Russian Music Collection, on the other hand, is quite substantial and impressive. It contains audio clips, biographies, and lyrics (some animated and coordinated with sound clips) from musical artists. While some of the artists are well-known (such as F.I. Chaliapin or Vladimir Vysotsky), the site also exposes visitors to lesser known artists such as Mark Reizen, Boris Gmyria, and Nadezhda Oboukhova. The caption under "Opera Singers" reads in part, "It should be no surprise that the rich Russian culture is producing so much talent - it always has, but few outside Russia got a chance to experience it." The site also contains a collection of jokes (translated into English) with brief explanations of the historical context of each. This page includes political jokes about Russian military heroes, family jokes of the mother-in-law variety, and jokes about America. The Religion page gives an historical description of the country's major religious faiths and their religious practices.

"Little Russia" also contains extensive technical resources. These include the "Little Russia" Newsstand, which provides a "free service to Russian-speaking community [sic]" by offering reprints from current Russian periodicals such as *Argumenty I fakty (Arguments and Facts)*, *Literaturnaia Gazeta (Literary Gazette), Nezavisimaia Gazeta (The Independent Gazette)*, and others. Reprints are distributed in transliterated format or in a Cyrillic font to subscribers via electronic mail and the Web. The site also contains a collection of utilities for Russifying computers (fonts in KOI8 and Windows CP1251 format, keyboard templates, transliteration programs, games, utilities, and help files). There is also a list of Internet servers in Russia (in the form of links and a sensitive clickable map) and a page containing demographic and geographic information on Russia from the CIA world fact book.

The graphic design of the site itself is also a cultural resource (see Figure 1). The lettering in the left column is ornately drawn, resembling the large lettering found in a codex, and the picture at the top of the main page is that of a small Russian wooden church set against a vast landscape of rolling hills and sunlit sky. The landscape portrait evokes a 19th century painting by Issac Levitan called "Above Eternal Peace," which also sets a small wooden church against an abundance of water, land, and sky. Levitan specialized in a style of painting called *pejzazh* ("scenery" or "landscape"), a style that conveyed a perception of Russia as a "silent, timeless, landscape undisturbed by human presence" (Kirichenko and Anikst 1991:95).
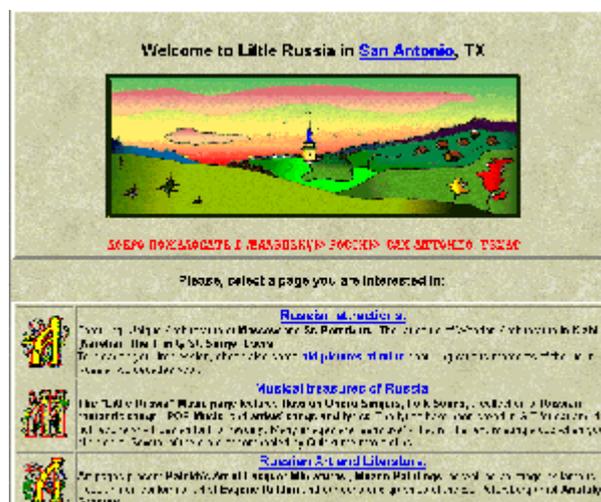
Figure 1.

Pejzazh painting was a form of a Russian artistic style called "style russe." Style russe was part of an emergent Russian nationalist movement during the

second half of the 19th century. It was marked by a revival of indigenous Russian culture through folk art (91-93). This style came after a period in which Russian artists experimented with modern European and Byzantine motifs. The incorporation of this style into the design of "Little Russia" also has cultural and nationalistic sentiments. It visually creates a space that has a distinct Russian identification. These visual elements are comparable to architectural "memory places" or "topoi" used in ancient rhetoric, in which rhetors committed to memory the interiors of entire buildings and used them as organizing principles for speeches (Ong 1971:106-108). The visual elements on "Little Russia" are virtual "landmarks" (Linenthal 1991:3) that remind visitors of a "home" called Russia.

4. Purposes of Cultural and Technical Resources

These resources serve two primary functions. First, they rhetorically mediate encounters between other cultures and Russians by encouraging understanding about the Russian people. Annotations, for example, are in English to appeal to the widest possible audience. Russian culture is described as a treasure that was hidden away ("few outside Russia got a chance to experience it"). This mediation is still important in a post-cold-war era. Many Americans, following the lead of former President George Bush, still say that America won the cold war. From time to time, these messages appear on the "Little Russia" web "board" (see below). These impressions are due to ignorance, if not outright hostility, toward Russia. Unfortunately, impressions, ignorant or not, lead to action in the real world in terms of diminished financial and socioeconomic opportunities for Russians at home and abroad. "Little Russia" is therefore a place where both Russians and Russian émigrés can form a collective front to construct a rhetoric, in the form of links, sounds, and text, to encounter these opinions, contest them, and mediate them.

   Second, these resources construct a virtual organizational and cultural infrastructure to maintain transnational ties to the Russian homeland. Transnational networks are formed by émigrés who maintain multi-stranded connections with both their places of origin and settlement. In geographic settings, émigrés do this by founding organizations to maintain networks of cultural and political support that "flow" transnationally, across national boundaries. Russian and Soviet émigrés have always been actively engaged in forming transnational connections. Two examples include the money and clothes given to Lithuania by the American-Lithuanian community in Chicago during World War II (Rubchak 1992b:120), and the founding by Vancouver émigrés of the Society for Technical Aid to Russia in 1922 to send money and clothing for Russian peasants enduring famine (Tarasoff 1989:39).

"Little Russia" engages in transnational activity by providing a virtual archive of cultural resources to preserve and promote Russian cultural traditions. The provision of technical resources, particularly those pertaining to Russifying computers for Internet usage, is to assist Russians and Russian émigrés in adapting to this new technology. This adaptation is also a way of helping Russians "catch up with the West," aiding Russia in the patriation of foreign technologies to realize its own post-Communist cultural identity. Even the providing of links to Russian web servers is a transnational effort to put the Russian Internet on the world map, a way of hypertextually "arguing" for increased usage of these sites through exposure to potential advertisers, Internet users, and others whose participation can be of material benefit.

The "struggle for representation" is, as George Marcus writes, a form of contemporary political activism (1996:10). For the Russian transnational community, exposure is especially important due to the increased demand for democratic media in its post-Communist transition. Unfortunately, recent economic hardships have stifled Russian participation in cyberspace. At the end of 1996, the Russian Public Center for Internet Technology estimated that only 25,000 to 50,000 (out of a population of 150 million) Russians had full access to Internet services (Fick 1996:16. This figure does not include the number of Russian émigrés living in diaspora who have access to Internet services, a figure that is unknown). The political outcome is that Russian concerns are underrepresented on this increasingly pervasive and powerful communications medium. Russians may no longer be censored by the Soviet bureaucracy, but they are censored by forces of free market capitalism that presently render most of them unable to afford the technology needed to participate in cyberspace. As Russian émigrés witness the tremendous economic and political hardships facing their families and friends at home while they see Western governments, including the United States, push forward economic and military policies threatening the interests of Russian people, many undoubtedly feel an urge to help from abroad. Their response is reflected in the construction and maintenance of these web pages, which create a "rhetorical gathering place" for all of Russian heritage around the world to convene, find a common ground, and partake in political activism.

In an age when powerful communications technologies increasingly come under the control of large multinational corporations (cf. Schuler 1997; cf. Doheny-Farina 1996), the web promises a technology that can even the media playing field by offering under represented Russian émigrés a powerful communications medium to voice their concerns. The archiving of Russian cultural resources and provision of technical assistance benefits both the transnational Russian diaspora as well as Russians in Russia itself. Most importantly, the effectiveness of transnational flows on "Little Russia" is part and parcel of community formation itself. Insofar as these resources solidify

communal identifications, they strengthen transnational activity. But communities need more than large electronic libraries of information. Communal ties are strengthened through people getting together to tell stories, joke, debate, and connect with other people. That the web also permits this form of community building makes it a uniquely rich medium. By putting an extraordinary amount of communicative power in the hands of anyone with access to web technology, "connectivity" further cements connections among Russians worldwide thus enhancing its potential for social and political effectiveness.

5. Connectivity

The tradition in which people establish links to colleagues, friends, and others is perhaps the most primal activity of community forming on the web (Hunt 1996). The basic idea is to strengthen connections and identifications among people who share common values, concerns, and interests. If a "Little Russia" communal ethnoscape can be identified from connectivity, it would probably be that of a group concerned with connecting to and maintaining Russian culture. But the rhetorics employed to engage in this activity are diverse and diasporic, due to the mobile and transnational nature of "Little Russia" participants. "Little Russia" is an ethnoscape of shifting persons: émigrés, Russians in Russia proper, and various others. For this reason, "Little Russia" is a juncture where rhetorics of displacement and rhetorics of settlement converge. These rhetorics manifest themselves in the diverse ways that participants imagine Russian culture, Russian identity, and the culture and identities of other groups.

There are two places where a "Little Russia" communal ethnoscape emerges in the form of connectivity. One was described earlier: the plethora of links to other resources about Russian culture. Resources (from the CIA, for example) are contributed by both Russian and non-Russian scholars, as well as various others, and the site includes numerous links to other resources on the web at large, resources created and housed both in Russia and abroad. As a whole, these connections form a global transnational network that houses, if you will, a virtual repository of Russian culture.

The second place where connectivity emerges is on something called the "Little Russia World Wide Web Board." This free board allows any participant visiting the site to post a message for public display, reception, and response by other visitors. The board functions similarly to a Usenet newsreader in that posts can become "threads" (topics) to which subsequent posters can reply. But the board allows a more robust form of communication than text-based Usenet posts by permitting the inclusion of sounds, pictures, animations, and other rich forms. The official policies for posting are that one must obey "God's Laws"

(the Ten Commandments). Posts that deviate from this norm are usually deleted.

The "Little Russia" board is divided up into several "generic" pages. This separation does not follow along any discernable differentiation in topical categories, but rather, is more pragmatic. (The only exception is the recipe board). The more posts that exist on any one board, the longer it takes to retrieve from the server. Hence, it is more efficient to use the site by having multiple boards.

In my sampling of one of these generic boards, I found that over half of the posts concerned two major categories (see chart): requests for technical information (for example, purchasing airline tickets in Russia, finding a job in the US or Russia, sending finances to Russia, immigration, etc.) and requests to meet others (for example, émigrés searching for schoolmates, Americans searching for relatives in Russia, requests to meet Russian penpals online, etc.)

TABLE 1. Types of Posts on one "Little Russia" World Wide Web Board

Requests for technical or practical assistance	278
Requests to meet schoolmates, relatives, friends	264
Requests to meet Russian women	180
Sharing information about Russian culture (proverbs, interests, hobbies, antiques, etc)	175
Non-Russian issues	78
Miscellaneous	28
Politics	20
Total	1023

A typical example of a location request is as follows:

In Reply to: Re: Mission to Russia '97 posted by Sasha on March 19, 1997 at 18:34:37:

Sashka... Gde ti zhivesh v Amerike?
[Sasha... Where do you live in America?]
*** *** *** *** ***

Posted by Sasha on March 21, 1997 at 18:47:20:
In Reply to: Re: Mission to Russia '97 posted by Alyona on March 21, 1997 at 12:45:55:

...Jivu v Los Angelese
chego I tebe jelayu.
[I live in Los Angeles, which I wish for you.]
Sasha
*** *** *** *** ***

Posted by Alyona on March 24, 1997 at 11:14:49:
In Reply to: Re: Mission to Russia '97 posted by Sasha on March 21, 1997 at 18:47:20:

Eto priglashenie?
[Is that an invitation?]
*** *** *** *** ***

Posted by Sasha on March 26, 1997 at 16:11:32:
In Reply to: Re: Mission to Russia '97 posted by Sasha on March 24, 1997 at 11:14:49:

Dah! [Yes!]

From here, they exchange addresses and telephone numbers. Sasha asks Alyona to telephone him, to which Alyona replies:

Posted by Alyona on April 02, 1997 at 11:23:01:
In Reply to: Re: Mission to Russia '97 posted by SASHA on March 27, 1997 at 13:50:11:

Ochenb dorogo zvonitb. Mozhno I zdesb poboltatb. U menya $700 ostalosb, nado kak-to 2 mesyca ezhe na nix prozhitb. Gde ti zhil priezda suda (v kakom meste v rosii?)

[It is very expensive to telephone. We can chat here. I have $700 dollars left, and somehow I must survive two more months on it. Where did you live before coming here (where in Russia?)]
*** *** *** *** ***

Posted by Sasha on April 02, 1997 at 22:47:15:
In Reply to: Re: Mission to Russia '97 posted by SASHA on April 02, 1997 at 11:23:01:

V Rossii ya jil v Moskve I nemnogo v drugih gorodah.
A voobsche-to ya s Ukrainy.
Privet, Sasha.

[In Russia I lived in Moscow and for a little while in other cities.
But in general I am from Ukraine.
Greetings, Sasha.]

Here, Alyona openly shares with Sasha his financial difficulties living in America, an experience that can be common to people living in diaspora. Alyona prefers the Web as a communicative protocol to the telephone because, as a university student, it is cheaper to use than telephone charges.

The usage of Russian is a way that each person linguistically authenticates the other, as an attempt to test for the possibility of forming a common Russian ground for a relationship. This choice is an important one in the context of the

"Little Russia" community. Many participants on "Little Russia" do not speak Russian. Most of these participants are American men who request encounters with Russian women. Many participants of Russian heritage express grave concern that these men care neither for Russian women nor Russian culture. They fear that these men are using economic superiority to exploit Russian society. Given the level of disdain among many ethnic Russians toward these posts, the most <u>benevolent</u> status for English speakers is that of "outsider." Thus, the Russian language offers a way of testing and authenticating a unique comradeship between Alyona and Sasha: those who cannot speak it cannot be trusted too much.

Alyona also "places" Sasha ethnically by asking where Sasha was born. "Placing" is a way of rhetorically locating a person's identity within communal contexts (Kingsolver 1992), accomplished by asking a person questions tracing kinship, origin, work history, residence patterns, and so forth. If "ethnicity" is, according to Rudolfo Anaya and Francisco Lomelf, the "reach for groundings in which individuals can find some sense of place and position in the world (cited in Grossberg, 14)," then the attempt to place that ethnicity is part of the activity of testing and authenticating the possibility of shared experience and therefore, one's "ethos" or credibility. But Sasha's reply indexes a credibility that rests on the shared "ethnoscape" of "Little Russia." Sasha is probably not Russian, but Ukrainian instead, a native of a country that chafed for independence under nineteenth and twentieth century Russian and Soviet imperialism. One might thus expect Sasha's reply to contain a level of irritability toward Alyona. But Sasha's post (and Alyona's reply that follows) indicate no tension. Abroad, in a foreign country, they probably share a Russian identification, enhanced by the cooperative "Little Russia" ethnoscape.

The blurring of such identifications is not unique to web communities, as it has been noted elsewhere among Russian and Soviet émigrés. Fran Markowitz (1995) notes that Soviet Jewish émigrés, upon emigrating to America, irritated the worldwide Jewish community because of their "greater concern for restoring their own everyday lives than for the broader mission of reunification with the Jewish people" (204). These émigrés turned to fellow non-Jewish Russian émigrés for companionship and the ability to speak the Russian language (206), which was ironic, since they were effectively denied Russian citizenship status in the Soviet Union. As a result, they came to imagine themselves as Russians more so than Jews. But while this imagining came about in a non-web context, what is interesting is that they required geographic proximity among a variety of Russian speaking Soviet Jews. The deterritorialized space of the web breaks down these geographic barriers, yet it maintains the ability to draw diverse groups into proximity to one another. Thus, the web seems to raise a limiting case for the importance of geographic communities in the formation of similar identifications.

Alyona and Sasha's nascent friendship is finally solidified by exchanging brief narratives of travel and pilgrimage to America. As Victor Turner has written, travel narratives about journeys between times, statuses, and places are experiences full of meaning (1967). A common theme of such journeys is the young person who heroically goes out in search of their identity and/or a mother or father. These journeys are often rites of passage into a new stage of life (Rappaport 1979).

The following excerpt depicts Sasha's passage to America. The humorous nature of the exchange illustrates that such journeys require interpretation that are shaped by and in turn shape cultural understandings:

> Posted by Sasha on April 08, 1997 at 22:13:05:
> In Reply to: Re: Mission to Russia '97 posted by Alyona on April 04, 1997 at 12:34:28:
>
> Vzyal I priehal. Po obmenu. Menya russkie pomenyali na meshtok koloradskoy pshenizy. Slushay, esli ty po obmenu zdes, znachit kakoy-to bednyj amerikanskiy rebenok seychas v Sibiriy?!!
> Sasha.
>
> [The opportunity came and I took it. Exchange. The Russians took me for a bag of Colorado wheat. Listen: if you're here on an exchange, that means there's some poor american [sic] kid now in Siberia?!!]

A third participant, another Russian, observed this exchange and contributed the following reply:

> Posted by BEHbKA on April 12, 1997 at 02:40:00:
> In Reply to: Re: Mission to Russia '97 posted by Sasha on April 08, 1997 at 22:13:05:
>
> Vo-pervyh, v Sibiry ne bednyi amerikanskii rebenok, a bogatyi: eto ne deshevo stoit. A vo-vtoryh. V Sibir' to oni ne ezdyat. Ezdyat v Piter I Moskvu. I horosho. Glyadesh', kul'tury podnaberutsya.
>
> [In the first place, american [sic] kids in Siberia aren't poor, but rich. It isn't expensive to live there. And second, they generally don't go to Siberia. They go to St. Petersburg or Moscow. And that is good. There, you see, is a collection of culture.]

Sasha and Alyona's exchanges contain cultural themes that index perceptions of both Russia and America ("rich" versus "poor," uncultured "Siberian" versus cultured "St. Petersburg"). The humor reflects an ambivalent posture toward Russia (it is both cultured yet poor), especially evident in Sasha's stab at the Russian bureaucracy's mistaking him for a bag of wheat. Sasha's post evokes a type of ironic narrative genre that flourished during the Soviet period, when Russians often told stories about the absurd contrast between their government's

ability to accomplish gigantic scientific and technical projects while failing to meet the most basic needs of the Soviet people, such as putting bread and cheese in stores. Svetlana Boym has identified this duality as a defining characteristic of "everyday life" in Russia (Boym 1996). Thus, a *babuskha's* (grandmother's) shopping trip to get a bag of sugar becomes sacrilized as a "podvig" (a Russian word meaning "heroic feat") when she narratively recounts the endless variety of empty shelves, transportation problems, and shopping lines that she overcame to accomplish her goal (Ries 1997:53). Such feats are rhetorical tropes in Russian culture, embodied in the popular figure of "Ivan the Fool," a person who can master gigantic feats, but cannot survive everyday life.

That such discourse enters into "Little Russia" indicates that it is a rhetorical gathering place in which language can become a linguistic playground wherein this trope figures centrally in rhetorics concerning notions of Russian identity. As Roger Abrahams writes, the playful dimensions of such stories are not mere embellishments to more serious themes but rather, demand "a recognition of an intimate sympathetic relation between a proposed solution of a recurrent societal problem and the movement involved in the artistic projection of that problem. [This linkage is made] not at the expense of the play element of culture, but rather by insisting on the essential utility of the 'playing-out'" (1968:168).

But playful language, while a rhetorically potent form of discussion on "Little Russia," is often overshadowed by more serious and heated banter. A recent example occurred under the topic, "Russia is the Best-America Sucks." This thread began when a Russian exchange student who said he had been living here for two years now realized that America "sucked." From this post emerged rhetorics legitimating, contesting and negotiating authentic "Russianness" and "Americanness," rhetorics that in general, did not fall strictly along national identifications. Some Russian participants imagined America as a "McDonalds" bent cultural imperialism. This prompted mixed replies from both American and Russian participants. There were American participants (one was even a veteran) who agreed that America "sucked," while other Americans argued that America was better since it won the cold war and that the original poster should return to Russia. Russia was constructed as anti-Semitic by both Russian and American posters. This prompted mixed replies from Russian émigrés, some of whom said they regret having ever lived in Russia, while others lamented various hardships living in the United States.

The following exchange exemplifies the ambivalent nature of this discourse:

> Posted by Alexei V. D-- on February 08, 1997 at 23:23:30:
> In Reply to: Re: russia is the best, posted by Art on February 01, 1997 at 13:37:02:
>
> Hey, Russia as a people and as a country is unique and certainly a great place. Now we've been screwed over by the government, but it doesn't make the

place we were born bad. Now all those fake ass so called russians [sic] who escaped to america [sic] and now find it amusing to put down our Motherland need to get a life. It's not the country's fault, it is the people's fault.

Posted by Zhanna on February 11, 1997 at 11:57:34:
In Reply to: Re: russia is the best, posted by Alexei V. D-- on February 08, 1997 at 23:23:30:

... What do you mean by "those fake ass so called russians"? Nationality? Religion? If you ment what I think you ment [sic], then people like you are exactly the reason why a lot of emigrants [sic] from Russia don't have very warm memories of their former motherland.
I have scars on my legs which will remind me for the rest of my life, that I was a jewish [sic] child growing up in the communist Russia [sic]. The government was not the one responsible for those scars, but a couple 10-year old kids were. They did not act on orders from KGB [sic], nor were they told by the communist party to cut my legs with a razor blade; it was their own choise [sic]. So, what did you say about it not being "people's fault"? And by the way, remember the famous frase [sic]: "People have the government they deserve"...

Now, having said that, overall I agree with you. One can't love or respect oneself if he does not love and respect his roots (for the sake of this discussion, the country one came from). I have a 8-month old son [sic], and I fully intend to have him speak fluent russian [sic] language as well teach him about russian [sic] traditions, culture and so on. On the other hand, I will also tell him what it was like to grow up there, and believe me a lot of stories I have to tell are not very pleasant...

In these posts, Zhanna indexes her credibility as both a Russian and a Jew, a somewhat problematic combination given the anti-Semitism in Russia and the former Soviet Union (Markowitz 1995). She narratively constructs a history of enduring physical torture at the hands of malicious 10 year-olds. Her most compelling witness is not textual, but physical in nature: the mute "scars" on her legs, which also serve to physically mark her ethnicity as a Russian Jew. Buried in her rhetoric is a narrative of why she came to America (ostensibly in part to escape anti-Semitism). Yet she also indicates a desire to forge and maintain a connection with her Russian homeland, saying that she intends to have her 8-month old son speak "fluent russian" and learn Russian traditions. In short, Zhanna's narrative is very much "diasporic," centered on the memory of a past homeland to which she believes she cannot return (Clifford 1994). It is a rhetoric that clashes with other émigré rhetorics, rhetorics of regret and bitterness. But Zhanna's rhetoric creates a more credible, if not sobering ethos: as a scarred Russian Jew she rightfully feels bitter, yet despite that pain, she still feels that true Russians should not ignore their ethnic roots.

These posts show that "Little Russia" can become a focal point where rhetorics formed by diverse individuals affect a specific cultural identification. As David Edwards argues, these debates are forms of transnational political activism by acting as "simulated politics" (1994). The permeability and fluidity of web technology permits a mix of discourses into the rhetoric of Russian cultural identity on "Little Russia," overcoming distance and time barriers to bring émigrés to the doorstep of political and cultural activity in their homeland while they are simultaneously situated in places of settlement. The outcome is a cultural identification that is neither unified nor officially sanctioned but rather, the product of diverse and often contestatory rhetorics.

6. Conclusion

The prospect of a transnational "Russian" ethos on the Web raises unprecedented questions pertaining to the relationship between literacy and national/ethnic identifications in computer mediated communication. If the rhetorical concept of "ethos" relies on a person's interrelatedness with a larger community, then ethos at its core is fundamentally about "belonging." (Note that "ethnic" comes from the Greek "ethnos," meaning "nation, people"). The communal ethos of "Little Russia" proceeds through a variety of rhetorics that test and authenticate one's belonging to the Russian community at large. But this belonging is not tied to geographic constraints, as the diversity of "Little Russia" shows. Virtual rhetorical gathering places are more like ethnoscapes, the product of changes in global organization from one of binary positionalities to disjunctive flows. Such a situation challenges traditional perspectives toward how people rhetorically construct cultural and national identities.

Historically significant changes in literacy have always altered conceptions of selfhood, national identity, and even metaphysics. David Porush, for example, has written about how the invention of the "Aleph-Tav" (the Hebrew Alphabet) permitted the expression and conception of a new Hebrew metaphysics and new sense of shared, collective consciousness (1997). In the Americas of the eighteenth century, the proliferation of the newspaper aided the formation of national consciousnesses, consciousnesses that Benedict Anderson calls "imagined communities." For Anderson, national consciousnesses are not distinguished by their authenticity, but by style in which they are "imagined" (1991:6). The creation of the newspaper, for example, created linkages among independent actors. It "brought together, on the same page, this marriage with that ship, this price with that bishop..." creating "an imagined community among a specific assemblage of fellow-readers, to whom these ships, brides, bishops and prices belonged" (62). Reading the newspaper, while performed privately, allowed one to imagine oneself as connected simultaneously to

millions of others whose existence one was confident of, yet whose personal identities one did not know (35).

Today, the World Wide Web plays an increasing role in forming these assemblages. Indeed, the Internet has already contributed to Russia's post-Communist identity, for it functioned as an underground press relaying speeches during the Soviet coup of 1991 (see archive). The Web transcends geographic and temporal limitations to link a diverse ethnoscape of people coming asynchronously from virtually anywhere on the globe. Geographic boundaries are displaced by "links" whose arrangement and content alone shape cultural sensibilities by relating items together in one semiotic space. Usually, participants are accessing a web site "anonymously," perhaps engaging in this activity at the very same instant as "anonymous" others across the globe. Yet anonymity is counter-balanced with an equal pull toward describing and placing oneself and others as credible representatives of an online communal ethos. What emerges from all this is a dialectic between rhetorics of anonymity and revelation, placement and displacement. These rhetorics are greatly aided by a medium that allows anonymity and mobility yet permits extremely rich and interactive means for personal expression. This unique combination of communicative forms and practices challenge traditional notions of community, identity, and ethnicity.

As web technology proliferates across national boundaries, cultural identifications will come to depend less on closed local groups and more on global "scapes" that transgress national and cultural boundaries. The growth of émigré web communities is not a separate phenomenon from offline social movements, but rather, coincides with an enormous increase in international and transnational movements resulting from the end of the cold war (McLagan 161). These "postnational social formations" include organizations, movements, ideologies, and networks which are not contained or defined solely in relation to a nation-state, but rather are "more diverse, more fluid, more ad-hoc, more provisional, less coherent, less organized, and simply less implicated in the comparative advantages of the nation-state" (Appadurai, cited in McLagan 188). As Internet-based transnational activity by émigrés becomes more prevalent, the web will play an increasing role in the forging of new cultural sensibilities.

References

Abrahams, R.: 1968, Introductory remarks to a rhetorical theory of folklore, *Journal of American Folklore*, **81**, 143-58.

Anderson, B.: 1991, *Imagined Communities: A reflection on the origin and spread of nationalism*, Verso Press, London.

Appadurai, A.: 1990, Disjuncture and difference in the global cultural economy, *in* M. Featherstone (ed.), *Global Culture*, Sage, London.

Appadurai, A.: 1991, Global ethnoscapes: Notes and queries for a transnational anthropology, *Recapturing Anthropology: Working in the Present*, School of American Research Press, Santa Fe.

Aristotle.: 1991, *in* G. Kennedy (ed), *On Rhetoric*, Oxford University Press, New York.

Baym, N. K.: 1995, The emergence of community in computer-mediated-communication, *in* S. Jones (ed.), *Cybersociety: Computer-Mediated Communcation and Community*, Sage, Thousand Oaks, CA.

Boym, S.: 1996, Everyday culture, *in* D. N. Shalin (ed.), *Russian Culture at the Crossroads: Paradoxes of Postcommunist Consciousness*, Harper-Collins, Boulder CO.

Clifford, J.: 1994, Diasporas, *Cultural Anthropology*, **9**(3), 302-338.

Clifford, J.: 1992, Traveling cultures, *in* L. Grossberg, C. Nelson, and P. Treichler (eds), *Cultural Studies*, Routeledge, New York.

Doheney-Farina, S.: 1996, *The Wired Neighborhood*, Yale University Press, New Haven.

Edwards, D.: 1994, Afghanistan, ethnography, and the new world order, *Cultural Anthropology*, **9**(3), 345-360.

Farrell, T.: 1993, *Norms of Rhetorical Culture*, Yale University Press, New Haven.

Fick, B.: 1996, The Internet lurches forward in Russia, *Transition*, **2**(21), 12-16.

Grossberg, L.: 1993, Cultural studies and/in new worlds, *Critical Studies in Mass Communication*, **10**, 1-22.

Halloran, S. M.: 1982, Aristotle's concept of ethos, or if not his somebody else's, *Rhetoric Review*, **1**(1), 58-63.

Hunt, K.: 1996, Establishing a presence on the World Wide Web: A rhetorical approach, *Technical Communication*, **43**(4), 367-386.

Ivanov, V.: 1995, In my beginning is my end: Traditional values in russian social life and thought, *in* H. Isham (ed.), *Remaking Russia*, M. E. Sharpe, Armonk, NY.

Jones, S.: 1995, Understanding community in the information age, *in* S. Jones (ed.), *Cybersociety: Computer-Mediated Communcation and Community*, Sage, Thousand Oaks CA.

Kelly, P.: 1996, Architecture is politics, http://www-home.calument.yorku.ca/pkelly/www/arch.htm.

Kingsolver, A.: 1992, Contested livelihoods: "Placing" one another in "Cedar" Kentucky, *Anthropological Quarterly*, **65**, 128-136.

Kirichenko, E. and Anikst, M.: 1991, *The Russian Style*, Lawrence King, UK.

Linenthal, E. T.: 1991, *Sacred Ground: Americans and their Battlefields*, University of Illinois Press, Urbana.

Marcus, G.: 1996, *Connected: Engagements with Media*, University of Chicago Press, Chicago.

Markowitz, F.: 1995, Criss-crossing identities: The Russian Jewish diaspora and the Jewish diaspora in Russia, *Diaspora*, **4**(2), 201-210.

McLagan, M.: 1996, Computing for Tibet: Virtual politics in the post-cold war era, *in* G. Marcus (ed.), *Connected: Engagements with Media,* University of Chicago Press, Chicago.

Miller, C.: 1993, The Polis as rhetorical community, *Rhetorica*, **XI** (3), 211-247.

Ong, W.: 1971, *Rhetoric, Romance, and Technology*, Cornell UP: Ithaca.

Paolillo, J. C.: 1996, Language choice on soc.culture.punjab, *Electronic Journal of Communication*, **6**(3), http://www.cios.org/www/ejcmain.htm.

Porush, D. Personal TAL-MUD, http://www.rpi.edu/~porusd.

Rai, A. S.: 1995, India on-line: Electronic bulletin boards and the construction of a Diasporic Hindu Identity, *Diaspora*, **4**(1), 31-57.

Rappaport, R. A.: 1979, *The Obvious Aspects of Ritual, Ecology, Meaning, and Religion*, North Atlantic Books, Richmond, CA.

Rubchak, M. J.: 1992, God made me a Lithuanian: Nationalist ideology and the construction of a North American diaspora, *Diaspora*, **2**(1), 117-129.

Rubchak, M. J.: 1993, Dancing with the bones: A comparative study of two Ukrainian exilic societies, *Diaspora*, **2**(3), 337-371.

Schuler, D.: 1996, *New Community Networks: Wired for Change*, ACM and Reading, Addison-Wesley, New York.

Tarasoff, K.: 1989, *Spells, Splits, and Survival in a Russian Canadian Community: A Study of Russian Organizations in the Greater Vancouver*, AMS Press, New York.

Turner, V.: 1967, *The Forest of Symbols: Aspects of Ndembu Ritual*, Cornell University Press, Ithaca.

ASPECTS OF DIVERSITY, ACCESS AND COMMUNITY NETWORKS

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Abstract. This paper addresses the issue of access to Community Networks for diverse cultural and ethnic populations. It utilizes ethnographic research conducted at La Plaza TeleCommunity in Taos, New Mexico. The paper asserts that access issues are very different for the three dominant cultures in Taos and much of the Southwest; Hispanic, Pueblo/Indian, and Anglo. It examines this Anglo-managed community network and the difficulty experienced in introducing e-mail and the Internet to Hispanics and Taos Pueblo Indians.

Introduction

Taos is located in a high mesa valley (7000' elevation) next to the foothills of the Sangre de Cristo range, 135 miles from Albuquerque. It is the center of a region that is home to a rich tri-ethnic culture (Bodine, 1967) comprised of 65% Hispanic, 27% Anglo, and 7% Native Americans.

Twenty-five thousand people live in Taos County. Approximately 10,000 people live in the local telephone calling area. Many of the roads remain unpaved and cable television arrived only 15 years ago. The closest major library is 1.5 hours to the south in Santa Fe, and the local branch of the University of New Mexico provides classes leading to the Associates degree. Tourist-related services and retail businesses provide the majority of employment (Taylor, 1996). Local media is limited to a weekly newspaper, two Internet Service Providers, and a single radio station.

A report by National Institute of Standards and Technology (1993) on the National Information Infrastructure (NII) suggests:

> The promise and vision of the NII is that all Americans will have access to a wealth of information in a number of arenas, from healthcare to history, from poetry to physics. In the next century the NII will be the means by which most Americans receive information, and the data, the imagery and the sounds it conveys will shape the very ideas of what culture is....

President Clinton's Executive Order of September 15, 1993, defined the NII as "the integration of hardware, software, and skills that will make it easy and

affordable to connect people with each other, with computers, and with a vast array of services and information resources" (Civille, Fidelman et al. 1993).

The Clinton Administration's vision of access to the NII must have seemed remote to the people of Taos and Northern New Mexico. Even as Internet usage skyrocketed across middle-class America, most Taoseños had never even heard of the Internet. Taos County is among the poorest regions of the country, with an average income of about $12,620 (Taylor, 1996). And with telephone coverage of only 65%, most Taoseños simply cannot afford personal computers and modems.

Until late 1994, dial-in Internet access was limited to a long-distance toll call in Taos. "The promise of an 'information superhighway' that links urban and rural areas with interactive voice, data and video connections" (Hines, 1996) was a remote possibility without local, affordable telecommunications technology. Clearly, there were huge gaps between the promises of the NII, and its practices.

In May 1993, a group of enterprising Anglos began to meet on how they could bring low-cost Internet access to Taos. Their organizing committee would soon become the *La Plaza de Taos TeleCommunity*. The name La Plaza was selected as a Southwestern metaphor for the old Spanish plazas which used to be gathering places to meet, gossip, buy, sell, and trade, and as a place of community.

The central mission of La Plaza was, according to one early participant, "to be an open system and provide free access to all Taos residents." The founding team recognized "The Taos Valley is rich in cultural diversity and provides an ideal environment to test new technologies. Native Americans, Hispanics, and Anglos have lived here for generations creating a diverse population in a rural and remote environment" (Finn, 1994, p. 5).

In December, 1996, La Plaza's total registered users numbered nearly 4700. The vast majority of users were Anglo. The number of users who accessed the Community network on a frequent (at least 3 times per week) basis was often under debate, but it was clear that number of actual users rarely exceeded 1500. The founder's goals for La Plaza were:

- to bring people together in new ways;
- to provide opportunities which do not sacrifice cultural identity;
- to promote community economic self-reliance;
- to give everyone access to new national resources (Finn, 1994, p. 5).

La Plaza's activists recognized that public access to computers and computer networks were not available to everyone in the community, and never would be if the community relied on federal funding. Their vision was one which brings social change with increased opportunities for communication, education, and economic development on the local level.

What is a Community Network?

A Community Network, via online technology, is an association that serves the communications and information needs of a group of people who have a common interest (Finn, 1996, p. 9). Like many Internet Service Providers, Community Networks provide Internet access and e-mail. They also provide information resources for their communities. A community network must fully be a part of the physical community by integrating with the cultural, economic, environmental, political and social fabric. Community networks facilitate communities as a geographically situated place, but provide an interactive communications medium that is not limited by time, space or geographical boundaries.

> I had been bargaining with a local plumber on the cost of installing an air conditioner in the room that houses La Plaza's central server and modems. We were negotiating a deal to trade for an access account for part of the installation costs. I have known the plumber since I arrived in Taos 14 years ago, so we were playing hardball with a smile. We finally reached an agreement and complimented each other on what good horse traders we were.

> After I got off the phone with the plumber, I asked myself "Is this community networking … trading access accounts for air conditioning?" The only answer is YES!

One of La Plaza's founders told this story with a broad smile on his face. Not only did his story exemplify so many Taos "business" interactions, it also illustrated the kind of frugal spirit needed to start and sustain a community network.

In December of 1994, La Plaza opened its "doors" to the Taos community. Until April of 1997, this distinctive network provided free networked computer connectivity to individuals, not-for-profit organizations, small businesses, and civic and service groups in the local calling area up to 15 hours per month. Training was free, as was access to the Learning Resources Center (LRC).

The Community networking movement seeks to help people form new associations within their local communities using computer technology. Early on, it became clear to community network advocates that their work was not about technology – it was about people. "They are about how people engage in communication with each other, develop relationships, dialogue about local and global issues, and plan and subsequently take action together" (Agger-Gupta and Strickland 1995, p. 39). Community networks seek to bridge the gap between cultures, institutions, places and communities by providing access, training, and the tools to bridge and build relationships in their locales.

Community networks are first and foremost advocacy organizations (Schuler, 1996, p. 369), driven by goals of social equity and justice. As such, community networks seek to enrich their communities by providing services

and opportunities they might normally have. The availability of Internet access to communities has the potential to better represent the "have-nots" (Anderson, Bikson, et al. 1995; Commerce, 1995; Marriott and Gegax, 1995) or underserved population. This population traditionally includes the poor, people of color, women, elders, the physically challenged and people with minimal formal education.

This paper recognizes that neither technology nor people are value-neutral. They shape and are shaped by each other, by constraints of the technological use and its side effects and by the community or group. Inherent in this lack of neutrality are the underlying values of people and the technical developers (Feenberg 1991, 1995; Mankin, Cohen et al. 1996; Sclove 1995; Wajcman 1991; Winner 1995; Zuboff 1988). To study the intersection of technology and people in community, it is essential to examine the systemic backdrop of culture, economy, politics and social relationships. To ignore any one aspect "separates technology from the social arena" (Latour, 1996 p. 287).

As a result, this research examined how computing technologies can act as a point of access and community resource. In my experience, it is also the place where we pay the least attention - where training is neglected or not provided, where confusion about how computers work is poorly addressed, misunderstood, ridiculed or ignored, where the learning process, and the different ways we experience computing, are sorely neglected..

Diversity and Culture in Taos

"Diversity," simply defined, is all the ways we are different and unique. This includes gender, culture, race, age, socio-economic class, religion and ability (Agger-Gupta and Strickland, 1995). These issues are reproduced in Taos as they are in any rural or urban area in the United States. Political and social interactions seem to follow familiar patterns of domination, subordination, resistance and acculturation.

Limiting discussions of diversity issues to culture is simplistic at best. Taoseños take great pride in their diverse community, especially among the Anglos. Anglos take their own "difference" very seriously; individuals go out of their way to be "consciously" diverse.

The three ethnic groups in Taos "still occupy overlapping yet recognizably distinct ecological niches" (Rodriguez, 1987). The Hispanic and Pueblo niches are based in their traditional land and water base, which Anglo developers, in-migrants, and conservationists threaten. Anglos, in the roles of in-migrant and tourist, occupy the hegemonic niche of class, privilege, and wealth. Bodine (1967) labeled this condition the "tri-ethnic trap."

The Tri-Ethnic Trap - Defined

Bodine (1968) describes the complexity of the tri-ethnic trap as a subordinate condition for the majority Hispanic population.

> In its creation the Anglos glorified Taos Indian culture and relegated the Spanish American to the bottom of the prestige structure (p. 147).

> … the Anglos … still [express] an attitude of tolerance and acceptance of both individual as well as cultural idiosyncrasy. While they sought from the two other ethnic groups proof of cultural difference which they found quaint, charming, mysterious and psychically satisfying, they never relinquished their claim to their own cultural superiority (p. 146).

Sylvia Rodriguez interprets Bodine's tri-ethnic trap as, "a dilemma in which Hispanos are confronted on the one hand with the devastating consequences of their land loss and subordinate status, and on the other with the Anglo glorification, advocacy, and imitation of Indian culture" (Rodriguez, 1990, p. 543).

Since 1968, land loss and water rights infringement, largely targeting the Hispanic population, have continued with Taos Ski Valley's expansion, the condo developments, and the overall upscaling of many historic buildings in town. Many older Hispanics no longer feel Taos is their home because, as one commented, of "all the Anglos coming in with their money."

Both the Pueblos and Hispanic cultures are "self-identified" (Rodriguez, 1987, p. 314). The dominant characteristic of a self-identified people, according to Rodriguez, is their opposition and resistance to domination and assimilation by the dominant culture. This is exhibited by the continued development of their own language, celebration of a unique cultural tradition, a sense of shared identity, and homeland. Both groups' ties to the land and scanty water resources of the region often put them head-to-head with Anglo in-migrants, developers and real estate speculators.

Lujan (1993) describes the discrimination Pueblos find in obtaining employment in Taos. Most jobs open to them are minimum wage as domestics, hotel maids, and casual workers. As much as 60% of the Taos Pueblo membership commute to jobs in Denver, Albuquerque and other large cities (Lujan, 1993).

On an economic level, it is clear the Hispanic population faces the trap most dramatically. While there are many jobs in local government and the schools, they are among the lowest paying in the nation. For example, an ad in the *Taos News* for one organization advertised for a full-charge bookkeeper with several years experience – with a salary of $6.00 per hour. According to Bodine (1968), even if Anglos were interested in such positions, the substandard wage scale dissuades them. I have also talked with several Hispanics who must work

second jobs to subsidize their professional positions as teachers, or government workers.

Most Hispanics believe tourism has robbed them of the traditional gathering places in Taos - the Plaza. Many are concerned with what the "Anglos, with all their money" are doing to their community. One Hispanic cultural informant was angry that the Hispanic traditions and events do not bring in tourism like those of the Pueblos.

In many cases, tourists and some Anglo locals only identify with Pueblos through their art, public ceremonies and dances (Laxson, 1991; Sweet, 1985). Through this same process, those Anglos who identify with the Pueblos through their rituals and "harmonious" ties to their land and nature, also remake those cultural experiences into "mirrors that reflect Western interests" (Adams, 1996, p. 111).

This phenomenon, dubbed "ethnic tourism" by Laxson, describes the stereotypical behavior exhibited by tourists towards Pueblo Indians. This behavior, grounded in Anglo cultural hegemony, consists of judging and evaluating others through their own lens of cultural values, and often ignores the continuing evolution of other cultures. Young (1990), discussing Foucault, adds that Western hegemony contains a claim to universal validity; claiming that Western truths and representations of reality are the *only* universally valid (p. 9).

Internet Access Issues and Community Networks

Community networks in rural communities like Taos clearly support the notion that the Information Highway is the key to success in any community of the future. Community networks provide a solution for the isolation of rural areas, for home-based businesses, for greater economic opportunity, and the opportunity to explore and compete in the global community.

Local content and interaction of this kind can make the Community network a dynamic force in building and redefining community. Karen Michaelson (1995) notes that many Community networks serve rural areas with declining economic bases, with little personal discretionary income and high unemployment rates, by providing affordable access to the Information Highway.

Community networks and Internet usage in general have long been the purview of white males (Barlow, 1995; Rheingold, 1993). No longer. Internet practice has evolved beyond the technology "toy" stage, making it potentially available to all segments of the population. It is no longer necessary to subordinate changes in social practices (ease of use) to technology. Community networks and the broader availability of the Internet are now driving more user-friendly changes in the technology.

On-line access itself is a universal issue discussed at length among Community networking, Internet, and telecommunications practitioners and theorists. It is a much broader issue than simply "how do I enter this thing" or "how do I learn how to use this thing?" Community networks, like La Plaza Telecommunity, are in the best position to address the task of bringing people access to the resources of the NII. However, access is clearly more than simply providing dial-in capability or a physical facility with networked computers.

> access may mean more than physical accessibility. The format and content of what is on-line can disenfranchise as easily as can physical access. Complex and sophisticated search tools and communications protocols distance those with less education from universal access. The most attractive World Wide Web page is unavailable to someone who reads at a tenth-grade level and needs the text modified to the appropriate reading level (Michaelson, 1996, p. 59).

I first became interested in the issue of Internet access for Taos' diverse population during the course of my dissertation research on La Plaza's community network, and talking with individuals in those communities. I observed that La Plaza's public access centers (Learning Resource Center, Convention Center and the Public Library) were used primarily by Anglos. I asked the volunteers who staffed the public access center about Hispanic and Pueblo participation. Their observations also revealed that Hispanic and Pueblo use of the LRC was much lower than that of Anglos. One volunteer trainer noted, "More ethnic roots need to be reached. There's not enough diversity there at La Plaza yet. You need to get some of the Hispanics in."

Providing access services is defined as the process of providing the framework, or infrastructure, so other types of access can be met. This includes, but is not limited to, maintaining the hardware and software, keeping Web pages up to date, and recruiting volunteers to act as trainers and helpers to provide the emotional and situational support. Providing services also considers the various levels of cultural and educational backgrounds. Therefore, I will discuss what I found to be the most problematical of these services at La Plaza - cultural access.

Cultural Access

Cultural access, according to Inga Treitler (1996), is governed by content, structure and context. Each cultural model contains "assumptions about the way the world works" (p. 62), how information is organized, and by rules of communication according to context.

This issue is one that challenges every community in the United States that wishes to provide access through Community networks. Many of the individuals who start and maintain the networks are Anglo professionals, who

faced with overwhelming technical and operational issues, often neglect issues of cultural access. They are also greatly influenced by the community itself, its attitudes, perspectives and values.

The provision of cultural access must be balanced with ensuring the CN remain open to many different cultural voices, in addition to implementation of those services most users need or request most. La Plaza's example indicates that simply providing a system for users is not enough. CN designers must be equally concerned about 1) whether the system provides relevant communication; 2) if it can be used effectively; and 3) what cultural messages are conveyed in Web page design and training. Treitler proposes,

> Much use of emerging telecommunications systems is by self-selected individuals who are in a sense frontierspeople or entrepreneurs and accept the challenge of crossing cultural barriers electronically. … However, beyond this elite group of individuals (who possess one or more of the characteristics of being employed, educated, or connected in some way with the mainstream), there are the vast majorities of the population (generally possessing one or more of the characteristics of dispossession, disenfranchisement, lack of adequate education, or difference from the mainstream) (p. 63).

Users, trainers, and community members helped to provide critical assessments of these questions. An early Anglo La Plaza supporter who has worked with New Mexico's Northern Pueblos noted,

> I think [the Pueblos] would be reticent to come into the LRC and sit down at a terminal and work like some of the other people do because they are such private people. The Native people I know who have computers love to use them and are very adept at using them. They use them in their businesses, play games on them, talk to each other just like anybody else. But they are more private people generally.

Community and American Indian activist George Baldwin (1995) discusses how, for Native people, face-to-face communication remains the "preferred mode of information exchange" (p. 138). However, even as the hostility of American Indians to Western technologies persists as a stereotype in the dominant culture, many Native peoples, including the Taos Pueblos, are quick to adopt those technologies that can benefit them. Computing technologies have been long employed on the reservations and preserves of North America, due in large part to government bureaucracies like the Bureau of Indian Affairs (Baldwin, p. 145).

Please note that I use "on the reservation and preserves." Herein lies the key to why the Tiwa and other Native peoples want the technology *on* the reservation, and at least in the case of La Plaza, will not journey off the Pueblo to use those services. Their homes are on those reservations. They are not comfortable in town or working in public facilities where their privacy may be invaded. Many Nations in New Mexico, including the Taos Pueblo and the Zuni

(Felsenstein, 1993) now have computing facilities on their land. One of La Plaza's founders agreed with this assessment, adding,

> That was why we were always pushing so hard to get it on the Taos Pueblo Day School. Get that wireless system going up there, because if they have a choice, they don't want to leave the Pueblo at all.

Projects such as "Postcards from Taos" brought the voice of the Hispanic community to life on the La Plaza system. The idea of the project was simple. Interview two dozen people from around the Taos community, emphasizing the Hispanic population. Take a photograph of them. Ask them three questions: 1) What is the most important thing to you? 2) What is your biggest dream? or alternately, What is the most fun for you? and 3) What do you like best about Taos? Post the whole thing on La Plaza's Web site.

Following a reception at La Plaza for the "Postcards" project, I received an e-mail describing the response from the community. The Hispanic sender noted,

> The postcards reception went great last night. I had the chance to show some of the local Hispanic people from the community whose ages ranged from 8-75 what the web is and what we are doing for the community of Taos. They were really excited in knowing that they can find information that they are interesting [sic] in without going to a library. A few of the them will be back to take the [training] classes with their children (Strickland, 1996).

It would seem that when personalized contact is made by other Hispanic community members, more interest is expressed in the Internet. However, most cultural informants agree that effective outreach in the Hispanic community must be undertaken with a door-to-door, or organization-to-organization effort by Hispanic community members.

Conclusions

The data represented here is only preliminary; much more work remains to determine actual percentage of Hispanic and Pueblo vs. Anglo Internet users in Taos, as well as the extent of cultural barriers in an Anglo organization like La Plaza.

La Plaza defined itself as an organization which served the community with a technological product: a socially constructed environment that worked for Anglos as a cultural and ethnic group who value the kind of individual initiative and inquiry required to learn the manipulation of new physical objects; that is, in this case, networked computer technologies. However, for the more communalistic culture of the Pueblos, and the family and relationship oriented culture of the Hispanics, this environment was not entirely suitable. It is also critical to consider whether this male Anglo-dominated organization could hope to conduct effective and long-term outreach in a community that has effectively

resisted such attempts for generations? The difference of course, was that they had a technological service, but not one that would be accepted by people(s) who had every reason to believe their best interests were not being put first. These conditions, grounded in historical context and behavior, Anglo assumption of representation, as well as the political and social rifts in the Taos community, prevented the success of such efforts.

Many questions remain to be asked, largely economic. Recent studies by Rand (Anderson, et al, 1996), and Bellcore (Katz and Aspden, 1996) sponsored by the Markel Foundation indicate the gap between the information haves and have-nots has widened since the 1980's. Their survey would indicate economics is the greatest barrier to interest in and use of the Internet. As the report adds "To the extent any demographic group becomes excluded from and under-represented on the Internet, it will also be excluded from the economic fruits that such participation promises."

It would appear from my observations, and those of some of my research participants, that the Anglo desire to withdraw from the larger community is also an unwillingness to recognize and participate in the cultural and ethnic diversity of the area. One such user insisted "…you don't have culturally sensitive people out there. And as multicultural as Taos is, and the [kind of] consciousness here, I think that Taos community organizations isn't probably open to accepting it."

The communicative and cultural practices of La Plaza were those of an Anglo organization. As such, the organization was managed according to those cultural precepts, as were the relationships made within and without it. In organizational culture, it was a representation of the Anglo community, and acted accordingly: manifesting white privilege, and acting on "behalf" of the whole community in representation.

It is clear that if La Plaza, and other Community Networks, hope to appropriately serve their diverse communities, they must seek not to represent those communities, but to bring those communities in as full contributing partners. Only in this way can the community determine the appropriate on-line content, build relationships with community organizational partners, and ensure appropriate access is available that represent all their interests.

Epilogue

La Plaza still exists, after a fashion. Following a hostile take-over in December, 1996, which forced the founders out of the organization, the 1997 elected board voted to impose users fees. The fees, set at $6 per month with five hours free usage, excluded many people living on the margin, many school children, and other low-income residents. One heart-breaking e-mail user wrote, "As a father, starting tomorrow I will have to limit my daughter's access to the Internet in

order to be able to manage the monthly fees that will now kick in." As of January 1, 1998, fees were raised to commercial rates to cover shortfalls when Foundation money raised by La Plaza's founders runs out. These rates denigrate the intent and spirit of community networks as community advocacy organizations which offer low- or no-cost access to the Internet.

References

Adams, V.: 1996, Tigers of the snow and other virtual Sherpas: An ethnography of Himalayan encounters, Princeton University Press, Princeton.

Agger-Gupta, N., and Strickland, C.: 1995, Moving telecommunities from exclusive club to reflecting community: Learning from the diversity trenches, Paper presented at the *Telecommunities Canada '95: Equity on the Internet*, Victoria, B.C, October.

Anderson, R., Bikson, T., Law, S. and Mitchell, B.: 1995, *Universal access to e-mail: Feasibility and societal implications,* RAND, Santa Monica, CA.

Baldwin, G.: 1995, Public access to the internet: American Indian and the Alaskan native issues, *in* B. Kahin and J. Keller (eds), *Public access to the internet*, The MIT Press, Cambridge, MA, pp. 137-153,.

Barlow, J.: 1995, Cyberhood vs. neigborhood, *Utne Reader*, 50-56.

Bodine, J. J.: 1967, *Attitudes and institutions of Taos, New Mexico: Variables for value system expression*, Unpublished doctoral dissertation., Tulane University, New Orleans, LA.

Bodine, J .J.: 1968, A tri-ethnic trap: The Spanish Americans in Taos*, Proceedings of the 1968 Annual Spring Meeting of the American Ethnological Society*, Seattle, Washington, pp. 145-153.

Civille, R., Fidelman, M. and Altobello, J.: 1993, *A National Strategy For Civic Networking: A Vision Of Change,* The Center for Civic Networking, Cambridge, MA:

Feenberg, A.: 1991, *Critical theory of technolog,* Oxford University Press, Oxford.

Feenberg, A.: 1995, Subversive rationalization: Technology, power and democracy, *in* A. Feenberg and A. Hannay. (eds), *Technology and the politics of knowledge*, Indiana University Press, Bloomington, IN, pp. 3-22.

Felsenstein, L.: 1993, *Ideas Festival Telecommunity Conference Proceedings*, Telluride, Colorado.

Finn, P.: 1994, *Community resources for the information age.* Available from La Plaza de Taos Telecommunity, 224 Cruz Alta, Taos, New Mexico, 87571.

Finn, P.: 1996, Introduction: The human factor in community networking. *Proceedings of the Community Networking 1996: Bringing People Together*, Taos, New Mexico, May 14-17.

Hines, F. O.: 1996, *Telecommunications and its impact on rural America,* National Association of Development Organizations Research Foundation, Washington, DC.

Hollinshead, K.: 1992, White gaze, Red people - shadow visions: The disidentification of Indians in cultural tourism, *Leisure Studies,* **11**, 43-64.

Hooks, B.: 1990, *Yearning: Race, gender, and cultural politics*, South End Press, Boston.

Hooks, B.: 1994, *Outlaw culture: Resisting representations,* Routledge, New York.

Katz, J. and Aspden, P.: 1996, Motivations for and barriers to internet usage: results of a national public opinion survey. Paper presented at the *24th Annual Telecommunications Policy Research Conference*, Solomons, Maryland.

Latour, B.: 1996, *Aramis or the love of technology*, Harvard University Press, Cambridge, MA.

Laxson, J.: 1991, How we see them: Tourism and Native Americans, *Annals of Tourism Research,* **18***,* 355-391.

Lujan, C. C.: 1993, A sociological view of tourism in an American Indian community: Maintaining cultural integrity at Taos Pueblo, *American Indian Culture and Research Journal* **17**(3), 101-120.

Mankin, D., Cohen, S. and Bikson, T.: 1996, *Teams and technology: Fulfilling the promise of the new organization*, Harvard University Press, Boston.

Marriott, M., and Gegax, T.: 1995, The haves and the have-nots, *Newsweek,* February 27, pp. 50-3.

Michaelson, K.: 1995, *Sustainable community networks for sustainable communities.* Unpublished manuscript.

Michaelson, K.: 1996, Information, community and access, *Social Science Computer Review* **14**(1), 57-59.

Rheingold, H.: 1993, *The virtual community: Homesteading on the electronic frontier*, Addison-Wesley, Reading, MA.

Rodriguez, S.: 1987, Land, water and ethnic identity in Taos, *in* C. Briggs and J. Van Ness (eds), *Land, water, and culture: New perspectives on hispanic land grants*, University of New Mexico Press, Albuquerque, NM, pp. 313-403.

Rodriguez, S.: 1990, Ethnic reconstruction in contemporary Taos, *Journal of the Southwest,* **32**(4), 541-55.

Schuler, D.: 1996, *New community networks: Wired for change*, Addison-Wesley, Reading, MA.

Sclove, R.: 1995, *Democracy and technology*, Guilford Press, New York.

Strickland, C.: 1996, *Re: Postcards reception,* La Plaza Telecommunity, Taos, NM.

Sweet, J.: 1985, *Dances of the Tewa Pueblo Indians: Expressions of new life*, School of American Research Press, Santa Fe, NM.

Taylor, P.: 1996, *Taos community profile, 1996,* Taos Chamber of Commerce, Taos, New Mexico.

Treitler, I.: 1996, Culture and the problem of universal access to electronic information systems, *Social Science Computer Review,* **14**(1), 62-64.

US Commerce Department.: 1995, *Falling through the net: A survey of the 'have-nots' in rural and urban America*, Washington DC [Online] Available: http://www.ntia.doc/ntiahome/fallingthru.html.

Young, R.: 1990, *White mythologies: Writing history and the west*, Routledge, London.

Zuboff, S.: 1988, *In the age of the smart machine: The future of work and power*, Basic Books, New York.

NGOS AND INTERNET USE IN UGANDA

Who Benefits?

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Abstract: Information technology (IT) research has ignored examining the impact of the Internet on unconnected stakeholder communities in the South. This research, which investigates how non-governmental organisations (NGOs) with connectivity are utilising the Internet for their daily operations, and how they are able to acquire and disseminate information from the Internet to their stakeholders, hopes to correct such injustices. The research was undertaken over an eight-week period in early 1998 in Uganda, East Africa. The survey involved representatives of 33 non-governmental organisations (NGOs) responding to seven open-ended questions related to their organisations' use of the Internet, and their information communication patterns. The paper begins with a brief background on Uganda and its telecommunications environment, including a summary of the seven Internet Service Providers (ISPs) currently operating in the country. The survey questions are identified, and the responses are organised into thematic categories which became apparent during the course of the study. The term "Internet" is used to refer to email-only services, as well as World Wide Web services.

The research found that NGOs report benefiting from their use of the Internet through reduced transmission costs, access to new and relevant information, and greater contact with their own field sites and partner organisations. NGO representatives' responses also indicate that the dissemination of Internet-acquired information is occurring with their stakeholders, regardless whether those stakeholders have connectivity or not. The majority of NGOs surveyed (70%) have only one computer with Internet connectivity within their offices; this presents challenges and restrictions in terms of the frequency with which the Internet can be accessed. A mere 5% of the NGOs with field sites reported that those sites were connected with either email or Internet; 33% reported having field sites without any means of direct voice or data transmission systems. The majority of NGOs with World Wide Web service reported using the systems for accessing and researching documents relevant to their work, but 32% of those organisations reported that they either seldom or never used the Internet that was available to them. Most NGOs reported that

they used the email to communicate with international partners; use of the Internet for local communications is low. Respondents reported that email was a very convenient mode of communications, effective in transmitting documents at lower costs than other technologies. Obtaining access to the computers, and the sending and receiving of attached documents proved the most problematic issues for respondents; the latter issue raises questions about the quality of training these organisations are receiving from their ISPs. The paper concludes with lessons learned from the research, and recommends areas for more detailed study.

1. Introduction

The expansion of the Internet in the developing world is occurring at a very rapid pace. Governments have recognised the Internet as an important tool that can be used in the fight against poverty, disease, and environmental degradation. Development agencies, which in the past have been negligent about expanding telecommunications beyond the urban centres of the South (Zijp, 1996), are now assisting with the countrywide expansion of indigenously managed Internet services (Richardson, 1996). Given this scenario, the final years of the twentieth century promise to be an incredibly dynamic period in the technological development of the Third World; the role that non-governmental organisations (NGOs) will play in this development can not be underestimated.

NGOs have been referred to as the "backbone of civil society"(Hyden 1995: 43). Compared to the bureaucracy and corruption that is traditionally associated with national governments, NGOs are, "efficient, less bureaucratic, grassroots oriented, participatory, and contributing to sustainable development in grassroots communities" (Ndegwa, 1996). It is owing to this reputation for competent and appropriate programming that NGOs are being given more and more responsibility for in-country development. A 1996 report on Ugandan development, for example, reported that NGOs were responsible for the disbursement of approximately 25% of all official aid to that country (Ibid.).
According to William Frederick, the worldwide growth of NGOs during the 1980s and 1990s, "is due in no small measure to the development of global communication technology" (Frederick, 1993). As Southern telecommunication networks expand, development organisations are placed in closer, faster, and more affordable contact with overseas donors, in-country partners, and stakeholder communities. As a recent article in the Science and Technology magazine, *Wired*, confirmed, "development is starting not only to include but to mean telecommunications"(Negroponte, 1998).

While there is little argument over the potential advantages to be gained through using the Internet as an information tool, there is a growing realisation that the technology alone is useless unless it is acquired and used appropriately (Du Toit, 1995). Following this argument, this research attempts to add to an

area of social science where little research has come before it: understanding whether or not stakeholder communities that do not have connectivity are able to benefit from their association with NGOs that do. In spite of the immense popularity of Internet technology, current literature on the subject of information communication technologies (ICTs) and their use by NGOs pays the unconnected stakeholder little, if any attention.

1.1. PREVIOUS STUDIES

Two separate reports published in 1997 by the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC) evaluated the adoption of ICTs in projects located throughout the developing world. CIDA's report, *ICTS and Development: Testing a Framework for Evaluation, Volume 1* (1997) sought to determine how an evaluation framework measuring information, borderless connections, timeliness and improving costs and benefits would fare on five CIDA-funded projects in Africa, South-east Asia, and South America. IDRC's report, *Use of Information and Communication Technologies in IDRC Projects: Lessons Learned*, was designed to test "assumptions about the role of information and communication technologies (ICTs) in development …" (Graham, 1997). Both reports, while they provided insights into how organisations and projects were able to utilise the Internet and email for their work, failed to address any issues regarding communications with unconnected stakeholders.

Gomez (1997), in his report, *Electronic Agora or Disneyland Democracy?*, surveyed Colombian NGOs with Internet connectivity to record their perceptions of the Internet as it related to their work. The Gomez report, like the two Canadian reports before it, offered valuable information with respect to the value, usage and benefits placed on the Internet by NGO staff. However, it, too, failed to address any issues relating to NGOs' use of the Internet for their communications with unconnected stakeholders.

This paper intends to complement the existing literature available on NGOs and the Internet through its additional focus on how organisations communicate with their connected and unconnected stakeholder communities. If NGOs are to continue to remain leaders in Southern development, it is vital that research be done to assess and understand how well these organisations are able to integrate information technologies (IT) such as the Internet into their programs. More information must be learned about how these organisations are able to share the benefits and resources emerging from the Internet with those who do not have them.

For the purposes of this paper, the term Internet is used throughout this paper to refer to both email and the World Wide Web. Full Internet refers

specifically to connectivity that includes email with World Wide Web access; email refers to access to email only.

2. Background on Uganda

Uganda is a landlocked country located in a region referred to as the Great Lakes Region. Uganda shares its borders with five nations: the Democratic Republic of Congo (formerly Zaire), Kenya, Rwanda, Sudan, and Tanzania. For over two decades, this region has been victimised by some of the most politically and socially unstable environments in the world. At the time of the writing of this paper, only Tanzania could claim an absence of violence and civil unrest within its own borders.

Uganda's population is comprised of some fourteen different ethnic groups, each accounting for anywhere from 1% to 8% of the population (CIA, 1995). The official language in Uganda is English, though at least five different native languages are spoken throughout the country. The 1994 population estimate for Uganda was 19 million, with an annual growth rate estimated at 2.4%; the current population estimate is close to 20 million people (World Bank, 1996). Of this number, approximately 48% of those over the age of fifteen years are able to read and write. 88% of the country's labour force is employed in the agricultural sector; coffee, cotton, and tea account for 99% of Uganda's export earnings (CIDA, 1996). The per capita GDP in Uganda is a low US$200 per person. The average Ugandan's life expectancy of forty-two years ranks as the third worst in the world, barely ahead of Sierra Leone and Guinea-Bissau, which have expectancies of forty and thirty-eight years, respectively (World Bank, 1996).

For the last twelve years, rebel insurgencies mounted against the government and people of Uganda have taken a heavy toll on the development and welfare of the northern half of the country. The poor social and technological infrastructure existing in the North is primarily due to such instability. Under these circumstances, the challenge for development organisations, and indeed, for the Ugandan people, is immense.

3. Ugandan Communications

Like its development activity over the last twenty years, Uganda's existing communication systems have favoured those living in and around the capital city of Kampala. There are ten AM radio stations operating in the country, all but one of which are located in the capital (Nyirra, 1997). At the time of writing this paper, however, an indigenous, Ugandan NGO is co-ordinating an East African regional project to establish an FM radio station in the far western town

of Kagadi, in Kibale district (Musisi-Kabuye, 1998). There are currently six television companies in operation, all based in Kampala; the government TV Station provides connection to ¾ of the country, with the exception of the unstable northern areas (Nyiira, 1997).

Uganda's telephone density is reportedly .25 lines per 100 inhabitants; the ratio within the City of Kampala is 2.8 per 100 inhabitants. Comparatively, estimates for the number of main telephone lines in Sub-Saharan Africa range from 0.5 to 1.6 per 100 inhabitants (de la Brosse, 1995; UNESCO, 1996; Wresch, 1996). Such statistics classify Uganda as a country with one of the worst telephone communication systems in the world.

Kampala, with less than 10% of the national population, lays claim to 73% of the installed telephone lines in the country. Moreover, 80% of the digital telephone lines and modern switching technology serve less than 15% of the country's population (Nyiira, 1997). Until recently, the state-owned Uganda Post and Telecommunications Corporation (UPTC) has been entrusted with running the operations of the country's telephone network. U.P.T.C has, by all accounts, provided a standard of service to the country which can only be described as abysmal. Reports abound of year-long waits to have individual telephone lines installed; even Internet Service Providers (ISPs) report that their requests for additional lines and improved system capacity go unheeded, face lengthy delays, or are addressed in the most minimal way possible (Balidawwa, 1998; Somaiya, 1998). Understandably, most Ugandans share the opinion of one ISP executive who stated that UPT, "has outlived its usefulness" (Balidawwa, 1998).

In 1997, as part of the government of Uganda's current privatisation of state-owned industries, the UPTC was divided into two entities: a telecommunications division and a postal division. The telecommunications division is soon to be sold to private interests, a move intended to, "enable the telecommunications arm to launch itself into the competitive business" (Mukalazi, 1998). In 1998, the purchaser of this company is expected to compete with Mobile Cel Tel, a South African telecommunications company that was awarded the rights to operate in Uganda. One of the conditions for granting the license to Mobile Cel Tel was for the expansion of the telecommunications network into all of Uganda's forty-five districts. As a result, hopes are high for an improvement in telephone accessibility throughout the country. Indeed, the expansion plans call for increasing the number of lines from under 70,000 lines to 300,000 lines, thereby increasing the national density from 0.25 to 2.0 lines per 100 persons by the year 2000 (Nyirra, 1997). With such progressive activity in the telecommunications industry, the Uganda of 1998 is in large contrast to the scenario which existed in 1986, when the government banned NGOs' use of radios for cross-country communications (Ndegwa, 1996).

4. Computers and the Internet

Like the wide diversity of access to main telephone lines throughout Sub-Saharan Africa, the range of African's access to ICT and computers varies greatly. A 1996 report stated that while South Africa had over 800,000 computers in use, Uganda had "just a few thousand" (de la Brosse, 1996). Estimates for Uganda are that there are approximately 3,000 active Internet clients, with a potential ceiling of 4,000 (Balidawwa, 1998). Based on a survey of ISP managers conducted for this research, there are approximately 2,300 Internet and email clients in the country.

In a country of 20 million people, 2,300 Internet users represents a very small number, and may relate to the clash of societal values and norms taking place between Africa and the developed world. Indeed, the concept of using a computer as a means of communicating with someone across town or around the world, as opposed to telephoning or posting a message to them has been described as, "an alien culture" (Musisi, 1998). The limited number of Internet clients in Uganda has also been attributed to the high cost of computers, low levels of computer literacy and poor educational institutions, high transmission rates for telephone usage, and the fact that, "the people have no value for information and knowledge"(Balidawwa, 1998). Woherem (1993) echoes this last point when he states that what Africa needs most at this time is a, "culture of IT, a culture that is aware of the technology and its different uses and that utilises it in governmental, industrial and service sectors" (Woherem, 1993). Until information technology and knowledge become appreciated and integrated into African society, computers and the Internet will risk remaining an elitist tool under-utilised by the majority of people.

5. Internet Providers In Uganda

5.1. BACKGROUND

The birth of the Internet industry in Uganda dates back to 1991, when ESANET, an IDRC-funded project, linked Kampala's Makerere University on-line with universities in Kenya, Tanzania, Zambia, and Zimbabwe using Fidonet technology. MUKLA's ESANET operations, led by Charles Musisi of Makerere University, became operational with the adoption of Fidonet, a system which offered regional interconnection across regular, dial-up telephone lines (Musisi, 1996). MUKLA later combined its ESANET operations with NGOnet, a bulletin board system initiated by the Environmental Liaison Centre International (ELCI) in Nairobi. By the end of its first year in 1992, MUKLA was providing email and bulletin board services to 50 clients. MUKLA also assisted in the 1995 creation and operations of Healthnet, a service provider

targeting the health services community. MUKLA continued to operate until 1997, when the competition from newly created Full Internet providers was undermining its client base.

5.2. INTERNET SERVICE PROVIDERS IN 1998

Uganda currently boasts a number of ISPs offering various services aimed at reaching different target markets. Three different categories of service providers exist: those offering Full Internet, those offering email-only, and those offering HF Radio service to clients out of range of telephone services. The first category is composed of three companies which offer Full Internet, World Wide Web access accounts to their clients: Infomail, Starcom, and Swift Global; a fourth company, Uganda On-line, offers Full Internet services through links to a virtual server in Oregon, U.S.A. Subscribers pay anywhere from US$50 to US$65 per month for unlimited Internet and email access, and from US$29 to US$30 for unlimited email accounts; all companies charge approximately US$50 for initial registration and software installation.

At the time of writing this paper, plans were announced of the impending merger of the two largest ISPs in the country, Starcom and Infomail. In addition to having a combined 70% share of ISP business in Uganda, these two companies also lease Internet lines to two other local ISPs. What impact this merger will have on the present-day shape of the Ugandan Internet market is unclear at this time.

The second category of ISPs is composed of three companies offering email-only services: Infoma, Healthnet, and MAFNET. These companies all offer connectivity using Fidonet technology, a dial-up, store and forward networking system that has proved itself a cost-efficient method of meeting the communication needs of people who do not need the instantaneous delivery of information and resources offered by Full Internet connections (AAAS, 1993). With Fidonet, independent nodes and hubs use high-speed modems to establish "gateways" with larger, international electronic mail systems. During daily scheduled transmission times these independent nodes and hubs regularly dial into the larger systems to trade incoming and outgoing messages. All three ISPs use this technology to send and receive messages from international hubs approximately every two hours. Monthly rates for the service average between $US20 to $US25 per month.

The third category of ISPs offer HF Radio email accounts to clients who are stationed in remote areas of the country that are not accessible by telephone lines. Two companies currently offer this service: Bushnet, which has been in operation for one year, and Infomail, which has recently expanded its services to include HF Radio in addition to the Full Internet services it has offered for 2 1/2 years. Due to the sophisticated nature of HF Radio service, costs are

significantly higher than for services using conventional telephone lines. Initial hardware costs US$8000, with minimum monthly charges in the neighbourhood of US$150 - $200 per month. As the data transmissions are slower with HF Radio than transmission rates through telephone lines, the clients are charged for the extra expense; rates range from US$ .24 - $ .30 per kb of data.

6. NGOs in Uganda and the Internet

This study of Ugandan NGOs operating with Internet connectivity involved interviews with thirty-three organisations, seventeen of which are categorised as indigenous. Each organisation was personally interviewed with a series of eight key questions, the results of which are charted below. It should be noted that no definitive list or directory of NGOs with connectivity in existence. All NGOs participating in this study were contacted either through referrals from one NGO to another, through ISPs, or by chance.

Of the thirty-three primary NGO representatives who were interviewed for this paper, thirteen (39%) were women, and twenty (61%) were men. In three of the interviews, a second female representative also took part in the discussion. The staff positions of the representatives ranged from executive administrators, to resource and communications personnel, to program officers.

7. The Survey Questions

NGOs were asked the following questions:

1. How long has your organisation had connectivity?
2. Does your organisation have email or Full Internet connectivity?
3. Why did your organisation choose to subscribe to the service?
4. How many computers does your organisation have with Internet access?
5. With whom does your organisation communicate using email?
6. How does your organisation communicate with its stakeholder communities?
7. What have been the positive experiences of the Internet for your organisation?
8. What have been the negative experiences of the Internet for your organisation?

8. NGO Responses by Theme

8.1. LENGTH OF CONNECTIVITY

Of the thirty-three NGO representatives interviewed, thirty responded to the question of how long their organisation had had connectivity. Eleven NGOs (37%) reported having Internet or email connectivity for one year or less. Four (13%) reported connectivity between one and two years; Eight (27%) reported between two and three years; and seven (23%) reported having connectivity for four years or more. Thus, one-half (50%) of all NGOs who responded to the question reported that they had had connectivity for two years or less.

8.2. TYPE OF SERVICE

Twenty (61%) NGOs reported having Full Internet access accounts, while thirteen (39%) had email-only accounts. Of the twenty with Full Internet access, six reported that they initially began their connectivity service with email-only accounts, later upgrading their service to Full Internet.

8.3. PURPOSE FOR OBTAINING INTERNET CONNECTIVITY

Of the thirty-three NGOs surveyed, twenty-one (64%) stated that their primary motive for obtaining Internet connectivity was related to the need to transmit information to and communicate with other organisations. Email is viewed as the fastest, easiest and most reliable way to transmit documents to overseas donors and maintain communications with other agencies. It is viewed as faster and cheaper than regular post, courier, or fax transmissions.

Seven representatives (21%) stated that the primary reason for their Internet access was to have greater access to information. Many of the organisations use the Internet to bolster their resources as well as to stock the resource centres that they offer to other organisations.

Three representatives (9%) stated that the primary motive for obtaining the Internet was financial. Email is seen as a way to reduce costs of communicating with other agencies. For example, the cost of sending a one-page fax anywhere in Africa is approximately US$3.00 per page, whereas the cost of sending a document through email is significantly lower. During one particular interview, an NGO representative presented nine separate documents to be faxed. Not only did the transmissions take a great deal of time to complete, but the total bill for the nine documents came to US$36, which is more expensive than the monthly cost of an email account in Kampala.

One NGO representative (3%), an executive with a school program in Kampala, stated that the Internet was brought in to promote IT knowledge and

incorporate its use as a learning and a teaching tool for both students and teachers alike.

One representative (3%) declined to give a response.

8.4. NUMBER OF NGO COMPUTERS WITH INTERNET CONNECTIVITY

Seventy percent of the NGOs contacted in the survey reported having only one computer in the office with Internet connectivity. Four NGOs (12%) reported having two Internet accessing-computers in the office, three (9%) reported having three computers, two (6%) reported having four computers, and three (9%) NGOs reported having a local area network (LAN) of more than five computers in their office.

The location of the Internet-equipped computer was also reported as a factor affecting its use. In organisations with one computer for Internet connectivity, staff frequently reported being unable to access email or the Internet because the computer was being used by a secretary or other staff person to conduct their normal workload of computer tasks. This often led to cases where staff members' ability to use the Internet for work-related functions was restricted to either the early morning or after-work hours. In one case, the NGO representative, who was also the Resource Centre co-ordinator, reported that when the Internet-equipped computer was located in its former position, at the desk of the main secretary, it was rarely ever used. When the computer was moved to the Resource Centre, however, the frequency of Internet use greatly increased. Further research is required to determine whether a correlation exists between the number of computers in an NGO office and the number of staff who report Internet accessibility as a problem; and between the location of the Internet computers and the frequency of Internet use.

8.5. NGOS WITH CONNECTIVITY IN FIELD SITES

Eighteen (55%) of the NGOs interviewed had one or more field sites outside of the city of Kampala. Of that group, however, only five (28%) had field sites which had on-line connectivity with the headquarters. Of the eighteen NGOs that reported having field sites, six (33%) had one or more field sites which are currently without any form of on-site voice or data transmission equipment. As a result of these field sites' isolation from telecommunications infrastructure, staff must relied on a variety of information delivery mechanisms to maintain contact with them, including personal visits, public radio messages, and delivery of mail and documents using bus drivers and visitors.

While all NGOs involved in this study have adopted the Internet as a means of communicating between their headquarters and other organisations, less than one-third of these organisations have extended those communication tools to their field sites. The reasons for this were not researched in the survey, but may

be related to frequent remarks about budget restrictions, as well as NGO staff 's unfamiliarity with basic computer technology. In cases where field sites are out of range for telephone lines, there is a need to explore and promote the use of email through HF radio to bring remote stations into contact with their headquarters; many NGOs were unaware that such technology existed.

8.6. USE OF THE WORLD WIDE WEB

8.6.1. Subscribers Who Use the Web

Many of the organisations that reported using the World Wide Web stated that they found it helpful in order to have access to information directly related to their own programs. To various degrees, documents, reports, and general information searches from around the world are being undertaken by those organisations actively using the Web. Indications from the interviews are that, no matter what the frequency of use is within the organisation, the Web's presence is an important one for the staff. For example, one representative reported that he was only able to access the Internet for information twice a month, but presented a number of examples of papers which he had downloaded from the Internet and which were related to his professional interests at the NGO. Another NGO representative regularly gives presentations to fellow staff members on diverse, development-related topics that he discovers and learns of through the Internet. Yet another representative stated that prior to having access to up-to-date resources on the Web, his NGO was, "talking from nowhere" when faced with environmental advocacy issues that required current, accurate information (Kimbowa, 1998). Thus, despite the limited opportunities reported by NGO staff in accessing the Internet, there is evidence to suggest that it is still able to serve a beneficial purpose for the organisations using it.

From the responses of those interviewed, however, there are indications that many of the NGOs are operating the Web with a learn-as-you-go attitude. One organisation reported that they were in the habit of "bookmarking" Web sites for fast and easy reference in an effort to counter the time and costs spent searching on-line for appropriate information. Another organisation's representative, however, who was also its resource person and main Internet user, was unaware that such features were even available. The reality, as one NGO representative remarked, is that a lack of experience with and exposure to the technology leaves many organisations in the position where they, "haven't realised the wealth of the Internet yet" (Sabiti, 1998). It appears that while there is a great deal of information that is accessible to NGO staff, there is much about the Internet and its applications that remains to be tapped through more basic education and training. Further research is required to fully explore how NGOs are able to benefit from their use of the Web.

8.6.2. *Subscribers Who Do Not Use the Web*

Six of the twenty NGOs (30%) with Full Internet connectivity reported that they either seldom used or never used the World Wide Web. Time constraints were listed as the major barrier to individuals' ability to access the Web. Of the six NGOs who reported little or no use of the Web, three stated that time constraints and conflicts with regular workloads as the primary reason. In one example, the American director of a Medical NGO appeared to be the only staff member accessing the Web; the director had his own computer with connectivity, while the other staff were forced to share the Internet on one computer that was used for normal work. Another NGO representative, who admitted to using the Web once in the previous six months, summed up the futility of not having the time to use the Internet when she said, "We know that the information is there (on the Web) but we can't access it" (van der Grift, 1998). Another NGO executive blamed his non-use of the Internet on his regular workload, which prevented him from searching the Internet for information; he also reported that the poor training and service provided by the organisation's ISP left him unable to use the service properly. Given that this executive was the only one in his NGO to have Web access, the result was that no one in the organisation could benefit from its use.

Costs of engaging the telephone for long periods of time in order to search for Internet information was also listed as a factor in non-use of the Web. Average costs for engaging the phone line in Uganda are approximately US$0.11 per minute. The Country Manager of one major international development organisation reported that she felt "guilty" every time she used the Web to search for information because of the costs incurred during her searches (Virani, 1998). When the executive of a major international NGO reports feeling guilty about the telephone costs charged to her organisation when doing Web searches, one wonders where this leaves the staff who work for smaller, less wealthy organisations.

The sixth NGO representative to report either little or no use of the Web stated that they had only had the Internet installed for one month, and had not had any time to access it.

8.7. COMMUNICATING WITH OTHERS BY EMAIL

The majority of NGO representatives reported that they primarily used email to communicate with organisations and individuals based outside of Uganda. While email transmission costs to international destinations are cheaper than using the telephone or fax, another reason for the focus on international use appears to be the low number of locally based businesses and individuals with connectivity. As one representative stated, "being connected here does not help if others are also not connected" (Ibid.). Another representative complained that

her rural-based organisation was unable to use its email to communicate with other agents operating in the same area. While the organisation uses HF Radio email to communicate with its Kampala-based headquarters, it is unable to communicate with the local District Medical Officer (DMO) one hour away because the authorities lack any communication technologies. Thus, the only way to communicate with the DMO was to make the one-hour drive to their offices, although there was never any guarantee that the staff would be there to receive them (Desonge, 1998). In such cases, their organisation's ability to communicate with the outside world did not help them to communicate locally.

Twelve NGOs (36%) reported using the Internet for in-country communications. In many cases, however, representatives stated that it was just as easy to use the telephone to contact a local organisation, or personally deliver a document, than it was to send an email to them. One organisation's representative, underlying the fact that many organisations are not yet connected with email, stated that all local correspondence is hand delivered rather than sent using email because, "email is not in vogue here yet" (Byanyima, 1998).

Even in cases where the email is being used for local communications, organisations reported using the telephone as a back-up medium to ensure that the message has been received. A small number of NGOs reported that, when urgent email messages are sent to organisations, their staff telephones the organisation to inform them that the message has been sent, thus ensuring that the message would in fact be discovered and read.

8.8. COMMUNICATION WITH STAKEHOLDER COMMUNITIES

8.8.1. General Communication with Stakeholder Communities

Oftentimes, rural stakeholder communities served by NGOs lack any communications technology to assist them in their work. In such cases, communication takes place through physical meetings held in person, or through messages delivered by post, taxi or bus. Many of the organisations interviewed for this research reported using local radio stations to get messages out to the rural communities in the country. In using radio as a communications medium, messages can be disseminated to a large audience; if the intended individuals miss the broadcast, others who do hear it are able to pass it along to them. For example, when one organisation needed to alert its rural members that a meeting was scheduled in Kampala in two days' time, the message was broadcast over the local radio; the meeting had 19 of 20 people in attendance (Ereemye, 1998). Thus, organisations and individuals, in the absence of telecommunications infrastructure such as telephones and Internet, use whatever means available to deliver messages to their stakeholders.

8.9. NGOS USING THE INTERNET AS AN INFORMATION TOOL TO ASSIST
        STAKEHOLDER COMMUNITIES

Based on the interviews undertaken for this research, organisations appear able
to make use of the Internet to benefit their stakeholder communities with
information that is appropriate to their needs. Three of the NGOs that
participated in this survey are associations with member organisations located
throughout Uganda; all three have a small number of members with Internet
connectivity. These associations reported that they were able to use email to
forward information directly to those members with connectivity, ensuring that
information dissemination is able to occur quickly and efficiently. In cases
where the intended beneficiaries of the information did not have Internet
connectivity, the NGO representatives stated that the information is downloaded
from the Internet, printed, and then either delivered personally, or sent by fax or
post.

     NGO associations are not the only organisations disseminating Internet-
acquired information. For example, the Mission Aviation Fellowship (MAF), a
Christian-based NGO offering air travel and communications support for rural,
religious NGOs in Uganda, takes information that has been downloaded from
email and has it flown to organisations located in the North. FOWODE, an
indigenous NGO promoting women's issues in politics, publishes briefing notes
based on information found on the Internet. These documents are distributed in
hard copy format to government MPs to raise their awareness on issues
concerning women. All Internet-acquired information which is not used in the
briefing notes, but which is deemed relevant to the organisation and its resource
centre, is collected and stored in hard copy format in the organisation's resource
library (Byanyima, 1998).

     The Uganda National Institute for Special Education (UNISE) is another
organisation disseminating Internet-acquired information to its stakeholders.
UNISE receives on-line discussion texts from a student discussion list based at
the University of London. Though the Ugandan students, many of whom have
never worked with computers, do not actively participate in the discussion
group, they receive the downloaded discussion texts from the school
administrator. The texts are categorised by the students based on the relevance
of the texts to the UNISE program as judged by the students themselves. Once
the information has been sorted, it is bound in a resource manual that is made
available to the student body. In this way, the students are given the raw
information as it appears on the Internet, and can make use of that information
in the way that best meets their needs (Ojwang, 1998).

     The Uganda Rural Development and Training Program (URDT), an
organisation working in rural, western Uganda, has used the Internet to acquire
information on appropriate technologies which can be used to assist local

villagers. In one example, the organisation used the Internet to acquire information on solar panel energy, as well as solar panel product and pricing information, which was then presented to the villagers. With the information concerning their energy options before them, the stakeholders were able to assess their options and make the decision that best suited their means (Hardman, 1998). The result is that the village now has ten residents with solar powered energy, able to offer cold drinks and electric light to fellow villagers for the first time ever (Goertzen, 1998).

The above examples suggest that stakeholder communities are able to benefit from NGOs' use of the Internet and email. While the stakeholders, themselves, may not have Internet connectivity, NGOs are still able to disseminate the information acquired from the Internet to them for their own use.

8.10. POSITIVES OF INTERNET USE

Cost savings were reported as the number one benefit for NGOs using email in place of other communication modes such as fax and telephone. As stated earlier, the cost for one organisation's transmission of nine faxes to destinations outside of the country more than paid for the cost of an email account for one entire month. Other organisations noted that prior to having the ability to use email to contact their rural field offices, a driver would have to be sent from Kampala to the field sites to pick-up or deliver a needed document. With the use of email, the need for such transportation was reduced, thereby reducing program costs. Another NGO representative related how he had to make a three-day return trip to their field site in order to retrieve a document needed for the writing of a project proposal. The staff member noted that if the NGO had email connectivity at the field site, such costly journeys for information retrieval would not be necessary.

Most NGO representatives expressed the opinion that the use of email as a communications tool was a convenient way of communicating with others. Respondents pointed out that, whereas with regular post correspondence, a letter from Uganda to another country in Africa might take one month of travel to reach its destination, staff can send an international email message one day and often have a reply by the next morning. Such immediacy of correspondence led one representative to remark that email was, "more personal" than mail correspondence (Were, 1998).

For some of the NGO staff interviewed for this report, the convenience of email made for an easier workload. One representative noted that email enabled the individual sending the correspondence to bypass the need for a secretary to draft and re-draft letters before they were sent. With email, one individual could independently manage the entire letter-writing process much more quickly, and expect to have a response to the message as early as the next day. Other NGOs

stated that the improved communications within their own organisations was a benefit. One NGO executive explained that with email, her organisation's African field offices could now engage in on-line discussion groups with their headquarters in London. With email, she said, "Discussions may take two weeks (to occur), but compared to the cost of a telephone call there is no comparison" (Komagum, 1998).

8.11. PROBLEMS EXPERIENCED WITH THE INTERNET

The most common difficulty associated with the use of the Internet was the sending and receiving of attached files over email. Some of those who expressed this complaint stated that they were able to solve the problem simply by sending an email to the sender of the document and asking it to be re-sent in another format. Two representatives reported that they often solve the decoding problems by physically taking their lap top computers from their offices to the offices of their ISP, where the staff are competent in dealing with such difficulties. One NGO reported that when they have difficulty sending or receiving attached documents, they usually end up faxing the document to save the time and trouble of solving the problem.

General accessibility to the computers with connectivity was also mentioned as a problem for NGO users; this may be related to a number of circumstances. Firstly, as 70% of the NGOs surveyed had only one computer with connectivity in the office, it is obvious that conflicts will emerge when one individual wishes to use the Internet while another wishes to continue the administrative work being done on that same computer. Secondly, many of the offices had either one telephone line in the office with which to share the Internet and the telephone, or else the Internet was using the same telephone line used by the office fax machine. In such situations, the use of the Internet requires the co-operation and patience of not only those using the Internet, but also that of the other staff who rely on the technologies put out of use by the Internet.

Another problem expressed by NGO representatives was the increase in individual workloads as a result of having the Internet. Some representatives stated that the demand for faster replies to email correspondence forced them to respond more quickly than if the correspondence had been through regular post. Furthermore, some representatives reported that, when coupled with their already heavy work responsibilities, the demands of attending to email and Internet were too much for the staff to handle. With staff responsibilities already stretched to the limit in short-staffed offices, the Internet was proving to be yet another burden to be dealt with.

9. Lessons Learned

9.1. LIMITED COMPUTERS AVAILABLE

70% of the NGOs involved in this survey have just one computer available in their offices on which to use the Internet. Based on the responses of these organisations, two aspects of this theme are recommended for further study. Firstly, investigation is needed to determine whether there exists a relationship between the number of NGOs that have one computer with connectivity and the number of NGO representatives who reported that their regular responsibilities prevented them from using the World Wide Web. Secondly, further investigation is needed to determine whether a relationship exists between the location of the NGO's Internet computer(s) and the staff's frequency of Internet use. More information is needed to ensure that organisations are equipped with the tools required to operate the Internet efficiently and effectively.

9.2. EMAIL USE DOMINATES

In virtually all cases, email is the main use of on-line connectivity for organisations and their staff. It is a telling statistic that while the majority (61%) of NGOs surveyed have access to the World Wide Web, over one-third of that number reported having had either very limited use of the Web, or none at all. If donor agencies and organisations are to assist NGOs in acquiring Internet facilities and equipment, they should do so in a way that does not overburden the staff with more work. If it is necessary for an office to have two or more computers to enable its staff to benefit from the resources of the Internet and maintain their current work-levels, then that is something that should be done.

9.3. INTERNET MEANS COMMUNICATIONS COST SAVINGS

The majority of organisations surveyed reported that they chose to obtain Internet connectivity because of their need and desire to have cheap and efficient communications with international organisations and donors. While no economic study was done to determine whether cheaper communications had actually been achieved, most of the representatives pointed to reduced costs in terms of faxes that could now be sent as emails with attached documents. Most representatives were satisfied that their organisation's decision to use the Internet was a wise one.

9.4. MINIMAL USE OF EMAIL FOR LOCAL COMMUNICATIONS

Email communication is used primarily with international partners and organisations. Local communications are carried out using either the telephone or personal visits, due to the lower numbers of local email and Internet clients.

9.5. FEW NGOS WITH FIELD SITE CONNECTIVITY

Of the eighteen organisations that reported having field sites, only five (28%) have sites with email or Internet connectivity. Furthermore, six organisations (33%) reported that their field sites had no form of on-site voice or data transmission equipment available for their staff. Perhaps through a greater use of their own headquarters' systems, organisations will begin to realise the benefits of having connectivity with their field sites. Indeed, those organisations with connectivity at their field sites reported that having the option to send attached files over the email, and thereby avoiding the inconvenience of sending a driver or courier to transport the documents, saved the NGO in terms of staff resources, time and money.

9.6. NGO STAFF BENEFITING FROM THE USE OF THE INTERNET

Organisations which have integrated the Internet into their daily programming appear to be benefiting from the access to new and relevant information. Even representatives who reported minimal frequencies of Web use produced documents that had been downloaded from the Web for their own benefit. The Web gave NGO staff access to recently published documents that greatly enhanced their resource centres. Prior to their access to the Web, many of these organisations relied upon publications from their own resource centres that were as many as twenty years old to assist them in their programs.

9.7. INTERNET BENEFITING CONNECTED/UNCONNECTED STAKEHOLDERS

Use of the Internet appears to be assisting NGOs in acquiring and disseminating information to unconnected stakeholders. Organisations stated that they were now able to obtain relevant information and documents for their programs and stakeholders more quickly. Furthermore, organisations appear to be in the habit of downloading, printing, and distributing on-line information to both field staff and, indirectly, to their rural, unconnected stakeholders. Further study is required to determine the extent to which such communication is really occurring, and the success of bringing the Internet and its opportunities into the sphere of the unconnected rural stakeholders.

9.8. PROBLEMS WITH INTERNET TRAINING AND HUMAN RESOURCE
DEVELOPMENT

Organisations expressed difficulties in their ability to send and receive attached files through email, and a lack of awareness of the Internet tools available to facilitate easier use of the technology, such as "bookmarking" Web sites. ISPs have a responsibility to provide their clients with the training and the tools that are necessary to operate their Internet systems effectively and efficiently. All of the ISPs in Kampala boast of strong customer service and training when new clients register with them, yet the comments of many NGO representatives appears to indicate that the quality and quantity of training offered to new users of Internet systems is not sufficient. The degree of training provided to all Internet clients may need to be reassessed and improved upon. If clients are unable to perform basic operations with their Internet and email services, they are missing out in their ability to harness the benefits that the Internet can offer them.

10. Conclusion

This research was undertaken to achieve an understanding of the issues and challenges facing NGOs in Uganda as they adapt the newly emerging technology of the Internet into their developmental work. More importantly, it was an attempt to understand the degree to which the NGOs' stakeholders, those with and without connectivity, are able to benefit from the NGOs' use of the Internet. This study succeeds in presenting initial evidence that NGOs are using Internet technology to not only benefit themselves, but to also benefit the connected and unconnected stakeholder communities that they work with. NGO representatives reported using the Internet as a tool with which they could forward documents and information to their stakeholders that had connectivity.

By downloading and distributing information relevant to their unconnected stakeholders, NGOs are demonstrating that the absence of stakeholder connectivity does not prevent Internet-acquired information from reaching them. Indeed, many of those stakeholders who are reported to receive Internet-acquired information from NGOs have neither Internet connectivity nor any previous computer experience. In terms of receiving Internet-acquired information, the only difference between stakeholders with connectivity and those stakeholders without it are the mediums that are used to actually deliver the information to them.

The contents of this report are based entirely on the comments and observations provided by the NGO representatives who participated in the research. It is the intent of this author to investigate further the information communication patterns practised by NGOs with Internet connectivity, to

document exactly what the impacts of NGOs' Internet connectivity are on the unconnected stakeholders with whom they work. It is only through understanding how information that is received through the Internet flows within an organisation, and how that information is able to be shared with the stakeholders who are meant to benefit from it, that the true impacts of the Internet will be known.

11. Bibliography

AAAS.: 1993, *Electronic Networking in Africa: Advancing Science and Technology for Development*, American Association for the Advancement of Science, Washington, DC.

Balidawwa, E.: 1998, Internet Manager, Starcom Ltd., Kampala, Uganda, Personal Communication, March 6.

Byanyima, W.: 1998, Chairperson, Forum for Women and Democracy (FOWODE), Kampala, Uganda, Personal Communication, February 23.

CIA: 1995, Uganda: Information, Paper published on the World Wide Web and available at http://www.info.usaid.gov/Horn/uganda/cia/uganda.html.

CIDA: 1996, CIDA and Uganda, Paper published on the World Wide Web and available at http://www.acdi-cida.gc.ca/cida_nsf/852562900065548b8525625b00126ec3/1984c7477d06a1af85256448006afcf4?OpenDocument.

de la Brosse, R.: 1995, The Internet and the South, *Panos*, **16**, October.

Desonge, C.: 1998, Physician, Medécins du Monde. Masaka, Uganda. Personal Communication.. February 21.

du Toit, C.: 1995, Developing Information: An NGO Case Study, *in* P. Fitzgerald, A. McLennan, and B. Munslow (eds), *Managing Sustainable Development,* Oxford University Press, Cape Town, pp. 608-625.

Ereemye, I.: 1998, Program Officer - Training, National Association of Women's Organisations in Uganda (NAWOU), Kampala, Uganda, Personal Communication, February 27.

Frederick, H. H.: 1993, Electronic Democracy, *in* Harasim, L. M. (ed.), *Global Networks: Computers and International Communications*, MIT Press, Cambridge, pp. 283-295.

Goertzen, H.: 1998, Volunteer, Uganda Rural Development and Training Program (URDT), Kampala, Uganda, Personal Communication, February 9.

Gomez, R.: 1997, *Electronic Agora or Disneyland Democracy?*, Partial results of a study on the uses of computer-mediated communication (CMC) among NGOs in Latin America, Cornell University.

Graham, M.: 1997, *Use of Information and Communication Technologies in IDRC Projects: Lessons Learned,* Evaluation Unit, Corporate Services Branch, International Research Development Centre, Ottawa.

Hardman, E.: 1998, Appropriate Technology Officer, Uganda Rural Development and Training Program (URDT), Kampala, Uganda, Personal Communication, January 30, 1998.

Hyden, G.: 1995, Bringing voluntarism back in, *in* Semboja, J. and O. Thirkildsen (eds), *Service Provision Under Stress in East Africa,* Centre for Development Research, Copenhagen.

Kimbowa, R.: 1998, Program Officer (Agriculture and Forestry), Joint Energy and Environment Projects (JEEP), Kampala, Uganda, Personal Communication, March 11.

Komagum, H.: 1998, Program Manager, Mission Aviation Fellowship, Kampala, Uganda, Personal Communication, February 25.

Mukalazi, S.: 1998, Way Cleared for Sale of Uganda Telecommunications Giant, *The East African*, January 19-25, p. 2.

Musisi, C.: 1996, MUKLA: Evolution of a Homegrown Network in Uganda, *in* National Research Council (ed.), *Bridge Builders: African Experiences in Information Communication Technology*, National Academy Press, Washington, DC, pp. 157-176.

Musisi, C.: 1998, Director, Africa On-line, Kampala, Uganda, Personal Communication, February 27.

Musisi-Kabuye, F.: 1998, Director, Uganda Rural Development and Training Program (URDT) Institute, Kampala, Uganda, Personal Communication, March 6.

Ndegwa, S.N.: 1996, *The Two Faces of Civil Society: NGOs and Politics in Africa,* Kumarian Press, West Hartford, Connecticut.

Negroponte, N.: 1998, The third shall be first: The net leverages latecomers in the developing world, *Wired*, January 1998. p. 96.

Nyiira, Z.M.: 1997, *The ACACIA National Strategy for Uganda: Background, Vision, and Implementation Strategy,* Paper prepared for the National Workshop for the Development of a Ugandan National Strategy for the Utilisation of Information and Communication Technologies for Community Development, December 8 - 10, Kampala, Uganda.

Ojwang, P.: 1998, Lecturer, Community Based Rehabilitation Program, Ugandan National Institute for Special Education (UNISE), Kampala, Uganda, Personal Communication, February 10, 1998.

Richardson, D.: 1996, *The Internet and Rural Development: Recommendations for Strategy and Activity,* Paper published on the World Wide Web and available at http:/www.fao.org/ waicent/faoinfo/sustdev/CDDirectct/CDDO/contents.htm.

Sabiti, A.: 1998, Program Officer, COOPIBO, Kampala, Uganda, Personal Communication. February 11.

Somaiya, A.: 1998, General Manager, Infomail Ltd, Kampala, Uganda, Personal Communication, February 4.

UNESCO: 1996, *Conference of Ministers of UN Economic Commission for Africa, May,* Paper published on the World Wide Web and available at http://www.unesco.org/cii/telematics/ cm22-6.htm.

Virani, Z.: 1998, Country Manager, Aga Khan Foundation, Kampala, Uganda, Personal Communication, February 24.

Van der Grift, V.: 1998, Communications Officer, Redd Barna - Save the Children (Norway), Kampala, Uganda, Personal Communication, February 24.

Were, J.: 1998, Assistant Documentation Co-ordinator, Isis-Wicce, Kampala, Uganda, Personal Communication, February 5.

Woherem, E. E.: 1993, *Information Technology in Africa: Challenges and Opportunities,* African Centre for Technology Studies, Nairobi.

World Bank.: 1996, *From Plan to Market: World Development Report 1996,* Oxford University Press, Oxford.

Wresch, W.: 1996, *Disconnected: Haves and Have-nots in the Information Age,* Rutgers University Press, New Brunswick, NJ.

Young, V., G. Brown, and J. Laursen.: 1997, *ICT Development: Testing A Framework for Evaluation, Volume 1,* Final Report, Performance Review Division, Canadian International Development Agency, Ottawa.

Zijp, W.: 1994, *Improving the Transfer and Use of Agricultural Information - A Guide to Information Technology*, World Bank, Washington, DC.

PART 3

COMMUNICATION IN CYBERSPACE

CYBERSOCIALISM

Group Consciousness in Culturally Diverse Collaboration

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An important new social and work unit is emerging with the rapid advances in communication technologies: distributed collaborative groups. While there has been much research focused on the technological development of computer-supported collaborative work, less is known about sociocultural attitudes and an understanding of how people perceive "belongingness" to a collaborative group in an environment where interaction is mediated by shared computer resources.

What, for example, defines a group whose members communicate in a "vacuum" unrestrained by time and space and never meet face-to-face? Can there be a sense of shared identity? Marx writes that the development of "class consciousness" - an *awareness* of an identification with a group of people who share like interests - is a precondition for a class existence. Weber writes that a "community" can exist for geographically dispersed individuals if there is a sense of meaningful identity and shared experience. I argue that for collaborators who are culturally diverse, geographically dispersed and temporally asynchronous, there must exist a sense of group consciousness in addition to, inter alia, shared identity, purpose, communication style, cooperation and cohesiveness.

In this paper, I use a case study of a distributed collaborative group of more than one hundred researchers whose goal was an examination of selected quantitative characteristics of computer-mediated communication. The collaborators proposed a research study to satisfy a shared desire to understand more clearly the nature of communication, culture and community on the network. The group used asynchronous computer-mediated communication as a tool for project management and for the distribution, collection and verification of data. Participant recruitment, distribution of information, coordination, formulation of policies, decision making, encouragement and data exchange took place through public and private email. The group was heterogeneous in age, qualifications, affiliation, research experience, culture, and nationality.

After the two-year project was completed, a survey questionnaire was distributed to and collected from the participants of the collaborative group via the Web and email. The survey included seven open-ended questions and 37 closed-ended questions which were constructed to determine if group consciousness exists, using the following criteria:

- the collaborative process
- task delegation
- interpersonal relationships
- participation patterns
- formal management
- informal management
- the medium

The closed-ended questions were presented in a Likert-type scale, yielding ordinal measures. Qualitative analysis and quantitative statistics are applied to open-ended and closed-ended responses respectively to find support for a number of hypotheses.

From the findings related to the hypotheses, collaborative group processes in a computer-mediated environment can be predicted thereby integrating, facilitating and coordinating distributed groups across cultural and geographic boundaries. The outcomes of this work can be applied in all fields which use distributed group support systems, such as distance education, virtual design studios, collaborative authoring, and organizational management.

COMPUTER MEDIATED COMMUNICATION AND THE CONNECTION BETWEEN VIRTUAL UTOPIAS AND ACTUAL REALITIES

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Abstract. People have generally been very ambivalent about the potential future roles of new technologies (and the internet specifically) and their possible effects on human society. Indeed, there has been a tendency for polarization between attitudes or perceptions of naive enthusiasm and cynical resistance towards the use of computers and computer networks, and for such related concepts as 'the information superhighway' and 'cyberspace'. The projection of such ambivalent perceptions into naively utopian (or even ironically dystopian) images and narratives might be seen as the latest and uniquely global permutation of a basic function of human culture - that is, to imagine 'a better future' or represent 'an ideal past'. This paper will consider the extent to which the kinds of virtual utopias made possible by computer-mediated communications are 'connected' to the actual individual and social realities of human participants. In other words, how important might it be to recognise a distinction between the use of virtual utopias (and utopian representations in any culture) as merely escapist, self-indulgent fantasy on one hand, and as a useful, transformative media for reinventing the human condition on the other?

> Whether we live in a Panoptic or democratic Net ten years from now depends, in no small measure, on what you and I know and do now.
>   Howard Rheingold, Afterword to *The Virtual Community* (1994, p. 310)

Introduction: Emerging Utopian vs Dystopian Images of Cyberspace

In contrast to dominant perceptions of global computer networks as basically an 'information technology', the alternative focus on the internet as new or extended media of human communication and, indeed, of human community has been ambivalent at best. Perhaps because the pioneering programs of internet chat (i.e. MUDS and IRC) were based around 'mere' adventure games and social chat, the development of synchronous computer-mediated

communication (CMC) was often seen as a frivolous off-shoot to the main focus on the internet as an 'information superhighway'. Rheingold's popular book *The Virtual Community* (1994), which celebrated the utopian potential of cyberspace in the tradition of the 1960s counter-culture movement, did help to change the way people perceived the new technology. However, there was an immediate 'dystopian' backlash to such a vision as the original innocence of network communities gave way to a recognition of not only the internet being open to use and abuse, but also issues of control and regulation. From such a perspective Clifford Stoll's *Silicon Snake Oil* (1995), for instance, challenged what Stoll perceived as a selective view gaining currency in the popular media - the information superhighway as a 'computer utopia… said to educate, entertain and inform'.

Rheingold's vision of a 'virtual community' is not the only utopian view of a cyberspace based on computer-mediated communication. Reflecting the emerging commercial interest in the internet as programs become more sophisticated and potential applications more obvious, there are also consumer-focused models of virtual spaces and communities (e.g. Negroponte, 1995) - virtual constructions of alternative realities which allow paying customers to temporarily 'escape' their every-day lives and situations. In contrast to the text-based format for the virtual communities which inspired Rheingold, a 'theme park' model of virtual utopia is exemplified by the kinds of graphics-based virtual reality worlds being developed by the Worlds Chat project (Cf. http://www.worlds.net/) where participants take on virtual bodies or 'avatars' as a focus of interaction. In short, such a contrast reflects the kind of tension between romantic and rationalist versions of a virtual utopia anticipated by the mid-Eighties project leader of Lucasfilms Habitat project (Morningstar, 1991) - that is, an opposition between a grassroots, community-focused cyberspace on one hand, and the designed virtual spaces commissioned by corporate and other institutional interests on the other.

What has been so ironic about emerging perceptions of cyberspace is how they have been anticipated and perhaps even influenced by a dystopian science fiction genre which has become perhaps the emblematic sub-culture of the internet - cyberpunk (e.g. Dery, 1995). Although basically a marginal literacy genre, the stories of authors typically associated with the cyberpunk genre (in particular, Bruce Sterling and William Gibson) have generally 'connected' with key themes and issues of the often disaffected popular youth sub-cultures - as well as with cutting edge uses and visions of new technologies. Many of the Hollywood movies which have integrated notions of cyberspace have reflected some of the key themes and plots of this genre (e.g. *Bladerunner, The Lawnmower Man, The Terminator, Total Recall*) - the film *Johnny Mnemonic* being directly based on a William Gibson short story. Typically, cyberpunk images and stories pessimistically depict a futuristic social landscape of

alienated individuals oppressed by systems of control and authority maintained by a range of new technological means. However, also typical of the genre is a secret fascination with these electronic media and a latent and ambivalent belief that such technologies might still be used to resist and subvert the dominant order. Just as Clifford Stoll freely admits his own personal ambivalence when challenging both the virtual community' and 'theme park' models of virtual utopia, so too the typical sub-cultures of the internet (and self-styled ethnographers of global electronic culture such as Douglas Rushkoff, Mark Dery, and even Howard Rheingold) tend to be very ironic about the relation between cyberspace and normal everyday personal, social and cultural realities.

It should be clear by now that it is not as easy as it appears to distinguish between the use of virtual utopias (or dystopias) to cater to escapist human fantasies on one hand, and facilitating personal or social liberation on the other. This paper proposes to consider ways of approaching the connection between virtual and actual realities of human experience and existence in terms of how emergent notions of virtual utopia are related to the utopian function in human cultures generally. In such a context the discussion below will address two related questions. Firstly, are the individual voices of cyberspace - the invented and intrinsically plural identities - that participate in computer-mediated communication somehow still 'embodied' and thus connected to physical as well as social and cultural realities? Secondly, is it possible to avoid characterizing cyberspace as some kind of postmodernist simulacrum (or a separate symbolic order of human representation) which is detached from every-day individual and social realities - for instance, a domain in which participants are perpetually engaged in closed games of simulation and seduction (Baudrillard, 1983).

New World Frontiers and the Utopian Tradition

Rheingold's personal involvement with the WELL (Whole Earth 'Lectronic Link) virtual community - an electronic conferencing group associated with the Whole Earth Catalog - provided him with a direct connection between a 1960s Californian countercultural ethos and the 'democratizing' possibilities of cyberspace. Others (e.g. Kling & Lamb, 1996) have gone further to suggest that this utopian model of cyberspace might usefully be seen as part of a local utopian tradition of alternative communities going back to the nineteenth century. But it is possible to go further to view the Californian model as part of greater utopian traditions, including that of the American 'frontier' mythology and post-Enlightenment, western projections of a New World order outside Europe (including other post-colonial countries besides the United States - such as Australia).

Utopian uses of a frontier rhetoric traditionally delineated between the 'here and now' of a safe, familiar and domesticated suburban world and the wild, exotic, and ambivalent possibilities on 'the other' side of the frontier as a New World paradise or a place of migrant exile (Richards, 1996). Such representations tended to merge both physical landscape and cultural or imaginary perceptions, and also function as a temporal metaphor of past or future ideal societies as well as a spatial metaphor for projected European notions of elsewhere and otherness. Indeed, Rheingold's (1994) account of the formation of the Electronic Frontier Foundation makes plenty of suggestive even if mostly ironic allusions to a pioneering American frontier rhetoric (and even a 'Wild West' ethos). As well as a distinction between external and internal utopian spaces, the frontier rhetoric of cyberspace incorporates both a 'forward' view to an ideal future technological society and a 'backward' reference to the model of organic and grassroots rural communities.

Although related to traditional mythical representations of heaven and hell imagery (e.g. Eliade, 1963), post-Enlightenment models have thus tended to be polarized in terms of a basic distinction between romantic and rationalist representations of utopia. Many of the classic utopian writers used the genre primarily to parody or critique their immediate societies (Thomas More, Jonathon Swift), as others did to either invent an ideal society for a privileged literary audience or to entertain a popular audience with myths of a better life elsewhere. However, the distinct sub-genre of 'dystopian' writing in the 20th century (e.g. Orwell's *1984* and Huxley's *Brave New World*) has tended to oppose both the authoritarian utopias of the nineteenth century and technological utopias of early modernism (e.g. Berneri, 1950). In short, there is a significant link between the romantic visions of an organic 'grassroots' utopia and individualistic credos of dystopia which similarly oppose utopian models of technological progress linked to an imposed social order. Similar forces would seem to be at work in the utopian projections of cyberspace discussed earlier.

The particular relevance of a distinction between romantic and rationalist utopias for the present discussion lies in how both views similarly project a battle between humans (or even nature) and machines in the modern age, a conflict reflected in a whole host of related oppositions such as emotion vs reason, and nature vs culture. Related to this is Morningstar's (1991) distinction, referred to earlier, between a top-down 'creation' and a bottom-up 'settlement' of virtual worlds through the use of computer-mediated communication. The top-down approach to designing a virtual utopia proceeds as if a community was the sum of its individual parts - like a machine that can be engineered. In contrast, as Morningstar points out, like any community the virtual communities of the internet have emerged more as a gradual and organic settlement - even when designed or engineered ('while each part of it is designed and organised by somebody, the totality is not').

Many people find it difficult to view computers and their applications in any other way than in terms of the industrial age metaphor of the machine. This tendency is reflected in a fear of computers taking over and humans becoming more passive in their thinking and doing (Roszak, 1994). However, electronic computer networks work more in terms of wholes, patterns and relationships than isolated parts or linear connections. Digital literacy therefore probably has more in common with an immediate oral literacy than a print literacy reliant on spatially decoding the parts of language-use (Ong, 1986; Lanham, 1993). A related problem is an influential perception that, as the function of a network of computers, the internet is a kind of machine or artificial media which humans interact with. Ironically , as users of computers start to move from a 'culture of calculation' to what Sherry Turkle calls a 'culture of simulation', things only seem to get more complicated. As Turkle (1994: ch.1) argues, increasing numbers of adults as well as a generation of computer literate children are tending to think of computers as more like an organism than a machine, and also increasingly thinking of some human characteristics (i.e. the functions of the brain) as machine-like.

One reason that computers have become emblematic of what Turkle sees as a large cultural paradigm shift is the development of a graphical interface which 'hides' the computer and facilitates interaction through the use of visual metaphors (e.g. Disney characters on a multimedia program). Like a good story, designers hope that they can construct an interface which gets users to suspend their disbelief and interact more strongly with a particular program. Likewise, Turkle also discusses in her book *Life on the Screen: Identity in the Age of the Internet* (1994) how the use of nicknames and characters in computer-mediated communication media reinforces a notion of fragmentary selves and plural identities which challenge traditional senses of an unchanging, unitary self. What Turkle is implicitly suggesting is that all media of human interaction and communication are kinds of 'mirrors' and that, by being developed in terms of a 'culture of simulation', the computer interface similarly functions as a cultural mirror to an intrinsic diversity and flux in human identity. However, by avoiding the question of whether such diversity and flexibility are still linked to an embodied self in the real world, Turkle also seems to avoid considering further how a computer interface might function as a media or 'mirror' of human communication. She appears to remain content to merely describe cyberspace as a playful postmodern tool with no particular purpose except to seduce its users (Turkle, 1994: 26).

Computer Mediated Communication: What Kind of Media?

When attacking the notion of cyberspace in terms of how 'computer networks … isolate us from one another and cheapen the meaning of actual experience',

Stoll (1995:3) took the view that a machine-mediated media is an artificial substitute which inevitably opposes face-to-face communication. Indeed, as even Rheingold (1994:182) concedes, some users of synchronous CMC do become addicted to internet chat and socially reclusive. However, as Turkle also argues, computer-mediated communication can also productively augment human identity and community. At stake here is not only a question of CMC perhaps being open to use and abuse - like any medium of communication or interaction - but the very nature of the connection between the virtual and actual in human experience. In other words, any challenge to Stoll's perception needs to be able to argue a case that CMC is related to, but goes beyond, the traditional media of communication in human cultural history.

There is a useful connection between changing notions of utopia in human culture and, for instance, Levinson's (1990) conception of three historical ages in the evolution of human media as a context for 'placing' the use of the computer-mediated communication. The first communication age is defined in terms of the *immediate* 'here and now' interaction of primarily oral cultures. This age corresponds to the cultural function of utopia as a mythical time and place - typically a transcendent reality of heavens or paradises opposed by demonic hells. Similarly, the second age described by Levinson is that of *mediated* communication which is distant in either time or space - as exemplified by the use of both the written word and printed texts. This age corresponds to the post-Enlightenment notions of utopia as either an obviously imaginary society and invented place, or a believed literal reality. Synchronous computer-mediated communication is emblematic of a third age in that it embraces aspects of the first two ages as well as being both immediate and mediated. Perhaps this corresponds with a notion that a distinction might be made between escapist models of virtual utopia and those linked to human actuality.

Like Mark Poster's (1995) model of two electronic ages of communication - a model which compares the linear sequence of 'broadcasting' with the 'two-way, decentralized communication' of the digital interface - Levinson's model also implicitly recognises the central importance of the reader or user in the process of mediated communication. However, it goes further to provide a framework for focusing on the problem of the connection between the virtual and actual in human experience in terms of a similar relation between the rhetorical and actual (i.e. immediate) aspects of any human media.

In similar fashion to Turkle, Poster adopts a postmodernist model for interpreting the use of digital media (and especially hypertext) in terms of readers or users being the central focus of any communication as producers or constructors of their own meaning and identity. The problem with this model is that it suggests that an author's or designers' strategy of meaning - as distinct from literal intention - is merely contingent and accidental in the overall scheme of things. It does not distinguish between the literal intention of an author or designer and a rhetorical strategy which frames and elicits the response of

readers or users. Moreover, it does not distinguish between the use of a media of communication as a function of *translation* on one hand, and one of *transformation* on the other. Poster argues that his model subverts that of a linear and hierarchical relation between senders and receivers (also, producers and consumers) of communication. But, in many ways, it merely reverses and ultimately reinforces the very model it opposes. The collective as well as individual reader or user effectively replaces the writer or designer as a locally contingent (rather than objectively literal) constructor of meaning and the transformer of a particular media.

As Ong (1982:176) has suggested - when discussing the 'secondary orality' of technologically-mediated communication - the difference between immediate communication and the strictly mediated kinds of communication such as print texts is that participants are more obviously senders and receivers at the same time and engaged in a process of dialogue (even, as Ong further stresses, when individuals interact 'with themselves'). In other words, a linear model of communication viewing media as either a transparent window or a postmodernist mirror tends to ignore how the production of meaning through any media of communication is ever a process of dialogical interaction (Bahktin, 1986; Taranhao, 1990).

The work of Paul Ricoeur (1976, 1986) develops a similar insight as a basis for not only viewing a possible convergence between the virtual and actual in human experience, but - as will be discussed below - also a distinction between the use and abuse of a utopian rhetoric. Going beyond Derrida's 'postmodernist' delineation between writing and speaking as separate systems of communication, Ricoeur's theory of interpretation treats all human media as if a 'here and now' interaction and any act of communication - either a face-to-face interaction or via a written text - in terms of various aspects of non-local mediation. On one hand, this perspective recognises that oral interactions are just as much expressed through a linguistic and cultural filter of preconceptions and stereotypical prejudices as any other text. On the other hand, Ricoeur's particular use of reader-response theory focuses on how a reader embodies and activates the 'immediate' dimension of a printed or distantly-mediated text in such rhetorical terms as the linguistic uses of tenses (past, future, subjunctive, etc.) - and not simply a merely subjective response to the surface content of any media.

In other words, Ricoeur tells us that we should treat all human communication as if a virtual process linked to actual human realities. If we read a book, for instance, we should imagine ourselves engaged in dialogue with a persona or mask of the writer, a rhetorical identity with a particular strategic purpose of communication (as distinct from literal intentions). In this way, a reader might avoid confusing a necessary, as distinct from sufficient, connection between the virtual and actual identities of a particular writer or designer of texts. In contrast to both the humanists and postmodernists, Ricoeur

recognises a sufficient rather than necessary link between an organising sense of self and the multiple selves or personas which people often take on. Such advice obviously has useful application to computer-mediated communication.

Many critics, including Stoll (but mostly those that have never or rarely interacted in this way), hold that CMC is inevitably superficial and impersonal and relies on an artificial and disembodied media of communication. Such a view is partly related to the fact there is clearly a lack of the kinds of contextual and non-verbal cues which characterize face-to-face communication (facial expression, tone of voice, etc.). If computer-mediated communication is viewed as just a matter of *human-machine* interaction then the playful, informal and often intimate language-use and dialogue which typically characterize internet chat might be conveniently dismissed as a pale imitation of 'real' human relationships - notwithstanding how virtual friendships are sometimes physically consummated and even occasionally lead to marriage. But a view of humans interacting with other humans using a computer network media - especially in terms of partially collapsing the distinction between immediate and mediated communication - provides a context for several arguments against this latter view.

One argument that can be made is that users of text-based CMC programs have developed ways of using verbal cues that provide context and represent typical non-verbal cues (e.g. as reflected in the vocabulary of shorthand expressions that have built up around internet chat, including the use of so-called 'emoticons'). Many of the critics referred to above who are familiar with various forms of CMC would support a further argument that internet chat actually often encourages a less inhibited, more democratic and even, paradoxically, a typically more personal and creative form of human interaction and language-use than is generally the case in the normal everyday conversations that take place in modern, suburban societies. Indeed, a number of substantial studies have been made of how CMC can empower marginalized or disadvantaged individuals and various groups, and promote collaborative learning practices and global perspectives in educational contexts especially (Lea, 1992; Herring, 1996).

In general, computer mediated communication represents a specific media which uniquely converges the functions of language and technology as symbolic and physical media or tools (i.e. of the mind and body) respectively for human interaction with the world. The product of this convergence - so-called cyberspace - thus needs to be appreciated as a rhetorical locus of symbolic action which links the cultural or imaginary and physical, material dimensions of human reality. The question remains whether such links can be sustained by the kind of postmodernist culture of simulation described by Turkle.

Rediscovering the Virtual Dimension of Human Actuality: and Vice Versa

One key implication of the discussion so far is that, as Sherry Turkle suggests, computer mediated communication provides a useful basis for recognising that all human experience, knowledge and communication is somehow represented and mediated as functions of language and culture - and therefore filtered through a mixture of both individual and collective preconceptions and expectations. Turkle's ambivalence about a computer culture of simulation would seem to be also reflected in her uncertainty about how to interpret what she sees as a gradual erosion of the human capacity to distinguish between virtual and actual realities.

Such a view - especially in so far as Turkle views the internet culture as representative of an emerging global postmodernist culture - is perhaps consistent with Baudrillard's (1985) notion that individuals and societies in the contemporary age have become enmeshed in an electronic media of communication that can only simulate reality (i.e. a simulacrum). For Baudrillard, people today are increasingly and inevitably living in the kind of global mass media culture in which the words and images of others (especially advertisers) have become detached not only from their physical referents, but also even from conventional meanings. People are increasingly discovering that identities and objects which appear to be fixed and certain often dissipate and transform upon closer inspection. If cyberspace also represents a merely seductive and distortional semblance or simulation of the world, then CMC participants are indeed similarly 'trapped' in the kind of postmodernist simulacrum which many critics believe rules the conventional mass media and, thus, both individuals and societies in the contemporary age.

The culture of simulation described by Turkle refers to the ability of computer applications to provide substitutes for reality across a range of human activities. This includes the learning of skills and knowledges safely in a simulated situation before actual practice or tests (e.g. learning to fly an air force jet using a simulator). A central focus of her own work is on the use of computer mediated communication to simulate human identity and social interaction. Just as it may be asked whether a culture of simulation provides an effective basis for learning real-life skills and knowledges, so too whether it is possible for people to get beyond virtual role-playing with multiple identities to connect with or develop an enduring and transformed sense of self acting in and upon the world.

Put another way, is it possible to tell when people are deceiving others in internet chat, to 'hear' an authorizing voice behind the various roles, characters and avatars? An exemplary instance of this issue is when participating characters have indeterminate or even 'suspicious' identity. As any regular user of internet chat is aware, there is always the possibility that the other character has engaged in virtual 'gender-swapping' or some other pretence (i.e. they may

even be a programmed 'bot'). As Turkle (1995:212) suggests, it is difficult for anyone to sustain the illusion of the opposite gender since there are always subtle verbal indicators and cues of how gender inflects 'speech, manner, the interpretation of experience'. But there is also the additional factor that CMC is a medium which encourages immediate intimacy, especially in one-on-one interactions. The very fact that people knowingly engage in reciprocating role-play, and that there is a relative absence of obvious contextual and non-verbal cues (which often contradict and confuse), tends to 'expose' the voice behind the mask. Ironically, then, it may be sometimes easier in internet chat than in face-to-face interaction to tell whether a person is being sincere and genuine or not. In the relatively safe context of CMC simulation, people are often ready to share private worlds and secret hopes and fears - to reveal vulnerable, sincere and organizing senses of self. Such a self need not be reduced to either actual biography or virtual persona, but rather be seen as a dialogical interplay of unity and multiplicity.

The problem with simulation is not when people view this *as if* reality, but when they treat reality *as if* a simulation (i.e. a novice jet fighter pilot obviously does not get a second chance to avoid crashing in a real flight). On the other hand, it is clear that if people suspend their disbelief or simply embody an attitude of participation, then simulation or virtual activity involving the use of imagination can be a powerful tool for learning and applying actual skills and knowledges - that is, for extending one's 'comfort zone' of familiarity. It would seem to be important, then, to recognise that cyberspace is primarily or ultimately also a function of human culture and imagination. In other words, there are pragmatic reasons for replacing a *human-machine* interface model with a view that the internet might be most productively interpreted as case of humans communicating with other humans (or even themselves) and interacting with the actual world using computer networks as a transformative and interactive media of communication.

Turkle's more ambivalent conception of a postmodernist culture of simulation - in contrast to Baudrillard's quite pessimistic and dystopian pers-pective - implicitly reflects a different view of human media of communication. Baudrillard represents a particular postmodernist view that derives from the Marxist notion that ideologies which inevitably distort and manipulate people are the pre-condition of any social condition and human interaction. Other poststructuralist Marxists taking a similar starting point (e.g. Althusser) began to realize in the nineteen-sixties that ideologies not only work at the informal and personal level as well as in the public and institutional domain of discourse, but also are open to use and abuse as an unavoidable basis of human communication. In short, there is another stream of postmodernism, typified by Turkle's view of the internet, which simply takes a non-committal, ambivalent strategic position - about the personal, social and cultural functions of utopian rhetoric as well as that of ideology.

By recognising that metaphor, narrative and virtual imagination generally are constitutive or central aspects of human thought and language-use, the dialogical framework of Paul Ricoeur is perhaps more usefully situated to critically distinguish the connection between virtual and actual realities in human experience. In terms of an overriding distinction between 'ideology as a symbolic confirmation of the past, and utopia as a symbolic opening towards the future', Ricoeur (1986) makes a crucial delineation between merely escapist and unachievable uses of virtual or imagined utopias which project onto distant 'other' locations of time and space, and transformative, achievable uses that are 'grounded' in the here and now of overlapping physical, social and cultural realities. Such a distinction should also be applied to the distinction between romantic and rationalist utopias discussed earlier. Naïvely romantic versions of a utopian rhetoric conceived in a vacuum are just as escapist as those more sophisticated and engineered visions of a technological society free of crime, poverty and disease. However, as suggested by the example of pioneering virtual communities, a 'grassroots' utopian vision which connects with an effective 'top-down' framework or design may just provide a model for the connection between virtual or imagined and actual, achievable utopias.

According to Ricoeur, both the imagined and lived stories, images and experiences of all humans contribute to individual and collective memory of the past as a basis for recognising future possibilities and potentials. As a process of transformation rather than merely of translation, simulations of self, society and reality are both virtually and actually linked to acting bodies, local communities, and cultural worlds. It is ironic then that, as well as wanting to connect with like-minded people with similar interests, one reason many people participate in 'cybersociety' is possibly to seek out a sense of community which seems to be disappearing in the closed worlds of much contemporary suburban life (Jones, 1995; Castells, 1996). This should remind us that the very notion of 'community' has never been located merely in terms of the physical proximity of people, but has always been connected to the cultural (and therefore 'virtual') mediations and networks of human communications.

References

Bakhtin, M.M. : 1981, *The Dialogic Imagination*, ed. M. Holquist, University of Texas Press, Austin.

Baudrillard, J.: 1983, 'The Precession of Simulacra', *Simulations*, Semiotext(e), New York.

Berneri, M. L.: 1950, *Journey Through Utopia*, Routledge & Paul, London.

Castells, M. : 1996, *Rise of the Networked Society*, Blackwell, Oxford.

Dery, M. (ed.): 1994, *Flame Wars: The Discourse of Cyberculture*, Duke University Press, Durham.

Eliade, M. : 1963, *Myth and Reality*, trans. W. Trask, Harper & Row, New York.

ATTITUDES TOWARDS TECHNOLOGY AND COMMUNICATION ACROSS THE MULTIPLE CULTURES OF SWITZERLAND

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Switzerland enjoys the "luxury" of no less than four official national languages. This "multiculturality" within a narrow space, however, is not often exploited fully, so as to enliven and enrich national discussions and debates. More often than not the public remains focused within its own language domain; facility in more than one language is the exception rather than the rule. It is hence little surprise that linguistic boundaries are at once cultural boundaries. This is often apparent in national elections; differences of opinion run along linguistic boundaries. The different linguistic communities also distinguish themselves one from another in their daily routines. Rey proposes a few differences can be ascertained in the communication of German- and French-speaking Switzerland. On the basis of a small study of letters to the editor, delivered via e-mail to various newspapers in German- and French-speaking domains, Rey develops some empirically grounded hypotheses concerning the different uses of electronic communication in German- and French-speaking Switzerland.

Herring, S. (ed.): 1996, *Computer-Mediated Communication: Linguistic, Social and Cross-Cultural Pespectives*, John Benjamin, Philadelphia.

Jones, S. (ed.): 1995, *Cybersociety: Computer-Mediated Communication and Community*, Sage, Thousand Oaks, Calif.

Kearney, M.: 1991, 'Between Tradition and Utopia', *in* D. Wood (ed.), *On Paul Ricoeur: Narrative and Interpretation*, Routledge, London.

Kling, R. & Lamb, R. : 1996*, 'Bits of Cities: Utopian Visions and Social Power in Place-Based and Electronic Communities'*, Center for Social Informatics, University of Indiana, *http://www.slis.indiana.edu/~kling/* (2/10/98).

Lanham R.:1993, *The Electronic Word: Democracy, Technology and the Arts*, University of Chicago Press, Chicago.

Lea, M. (ed.): 1992, *Contexts of Computer-Mediated Communication*, Harvester Wheatsheaf, New York.

Levinson, P.: 1990, 'Computer Conferencing in the Context of the Evolution of Media*', in* L.Harasim (ed.*), Online Education*, ed. L. Harasim, Praeger, New York.

Morningstar, C.: 1991, 'Settlements on the Electronic Frontier', IEEE Conference Paper, University of North Carolina, Chapel Hill, *http://sunsite/unc.edu/pub/academic/communications/papers/habitat/settlemnt.txt* (2/6/98).

Negroponte, N.: 1995*, Being Digital,* Vintage Books, New York.

Ong, W.J.: 1982, *Orality and Literacy: Technologising the Word*, Methuen, New York.

Petrie, D. & Harrington, D.: 1996 *The Clever Country: Australia's Digital Future*, Lansdowne, Sydney.

Poster, M.: 1995, *The Second Media Age*, Polity Press, Cambridge.

Rheingold. H.: 1994, *The Virtual Community: Homesteading on the Electronic Frontier,* Harper Collins, New York.

Ricoeur, P.: 1976, *Interpretation Theory: Discourse and the Surplus of Meaning*, Texas Christian University Press, Fort Worth.

Ricoeur, P. : 1986, *Lectures on Ideology and Utopia,* ed. G.H. Taylor, Columbia University Press, New York.

Roszak, T. : 1994, *The Cult of Information*, 2nd edn, University of California Press, Berkeley.*.*

Taranhao, T. *et al*: 1990, *The Interpretation of Dialogue*, University of Chicago Press, Chicago.

Turkle, S.: 1996, *Life on the Screen: Identity in the Age of the Internet*, Weidenfeld & Nicolson, London.

Stoll, C.: 1995, *Silicon Snake Oil: Second Thoughts on the Information Highway*, Pan Books, London.

PART 4

SOCIOCULTURAL CONVERGENCE OF NORTH, SOUTH, EAST AND WEST

NATIONAL SECURITY AND DEMOCRACY ON THE INTERNET IN ISRAEL

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A recent parliamentary committee meeting devoted to "Freedom of Expression and the Internet", began with a short demonstration in which Internet sites describing the Order of Battle of the Israeli Airforce, Nuclear weapons[1], as well as some pornography were reviewed. Members of the Israeli Knesset (parliament) were shocked and astounded -- not by the pornography, but rather by the fact that "classified" information was readily available on the Internet. The discussion quickly turned from dealing with freedom of expression, to how to prevent information of this kind from being readily available on the Internet. This incident serves to underscore the inherent conflict of values in Israeli society -- the primacy of national security, which subordinates almost every other aspect of democracy in Israel, versus the ideal of liberal democracy focusing on individual rights -- chief among these being freedom of expression. These conflicting values have been brought to the surface in recent years due to the incredible growth of Internet use by the general public in Israel.

Yitzhak Rabin, the late Prime Minister of Israel and a former military leader, once described Israel's security situation as one of "dormant war" erupting every few years into active conflict.[2] Others have described Israel as a garrison state, surrounded by enemies. In order to understand the relationship between national security and democracy in Israel, one must view the social, political and cultural context. In the founding Zionist ethos of Israel, the tension between national security and democracy hardly existed as an issue.[3] When matters of

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[1] The sites reviewed were: http://www.geocities.com/TheTropics/9305/ (The Air Force) and http://www.envirolink.org/issues/nuketesting/hew/Israel/index.html; http://www.janes.com/geopol/sentinel/geosent_focus10.html (Nuclear Weapons). These sites are based solely on information garnered from open sources generally available to the public.

[2] See Y. Rabin's lecture in *Academy in Memory of Yitzchak Sadeh,* Sept. 21, 1967 (Hebrew). Quoted in Horowitz and Lissak *Trouble in Utopia*, p. 195.

[3] Cohen, A.: 1993, Nuclear Weapons and Israeli Democracy, *in* A. Yaniv (ed.) *National Security and Democracy in Israel*, Lynne Rienner, Boulder, p. 203

national security are at stake, democratic considerations are seen as a luxury. The security of the state is strongly tied to the state's survival, and as such, the cause of security must override all other causes, including democracy, but more specifically, freedom of expression. This attitude towards national security in Israel has been adopted and internalized not only by the government and government institutions and agencies, but since Israel's founding in 1948, by the public as well.

Partial roots of the attitudes towards the primacy of national security may be found in the policy of *mamlachtiut* or statism, as developed by David Ben Gurion, Israel's first prime minister. Briefly stated, the official policy of statism developed by Ben Gurion was composed of three elements: The necessity for the state framework to provide universal services; the exclusiveness of state activity in certain areas of public life; and the depolitization of state structures to render them impartial to political party considerations. This statism was crucial in forming the framework for a common political culture among new immigrant from varying backgrounds. A crucial component of Ben Gurion's statism was the Israeli Army (IDF), whose role, beyond that of defense, was to fulfill the function of a melting pot in society, serving as a crucible in shaping the national identity of Israel's Jewish citizens. Thus, all men and women, from the age of 18 are expected to serve three and two years respectively, with an additional month of reserve duty for men, every year until the age of 55. The mandatory service in the IDF, and the subsequent reserve duty tend to strengthen respect for issues of national security in Israel.

A number of incidents have taken place over the past few years which has served to test the feasibility of protecting national security from the eyes of the public as well as Israel's potential enemies. The turning point was the Gulf War. While the Pentagon enforced severe restrictions on the press in the theater of operation, the foreign press in Israel used satellite and facsimiles to broadcast reports. The height of this was when missiles were falling on Tel Aviv, and the reporter for CNN was broadcasting the exact point of impact. The Iraqis could not have hoped for better information regarding their ability to launch missiles at civilian targets. In a conversation with a reservist who served in the military censor's office during the war, the military censor admitted to being powerless in the face of communication technologies such as satellite and facsimile broadcast, and could only hope to do his best at keeping up appearances. At the same time, beyond the public eye, the IRC channels and Usenet groups on the Internet were providing an additional source of information to the public within Israel and beyond, much in the way of Ham Radio operators did in the US in the '40 and '50s. Computer users seized technology and made it work, providing accurate, uncensored reports of the effects of the Gulf War (see Frederick, 1992).

The second incident concerned a posting to various Usenet news groups dealing with Israel, providing the name and address of the newly appointed head of the General Security Services (GSS). Until then, the names of the heads of Israel's intelligence organizations were known to a relatively few people, and were considered state secrets. On March 14, 1995, the following post appeared on a number of news groups on Usenet:

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Message-ID: <123311Z14031995@anon.penet.fi>
Path:
NetVision.net.il!aristo.tau.ac.il!barilvm!dearn!nntp.gmd.de!stern.fok
us.gmd.
de!ceres.fokus.gmd.de!
zib-berlin.de!Germany.EU.net!EU.net!news.eunet.fi!anon.penet.fi
Newsgroups: soc.culture.israel,talk.politics.mideast
From: an217892@anon.penet.fi
X-Anonymously-To: soc.culture.israel,talk.politics.mideast
Organization: Anonymous contact service
Reply-To: an217892@anon.penet.fi
Date: Tue, 14 Mar 1995 12:27:34 UTC
Subject:      Shabak[4]
Lines: 12

Mazel tov to the new head of Shabak Carmi Gilon.  You can send
letters of congratulations to:

Carmi Gilon
6 Hagefen Street
Mevaseret Zion
Jerusalem
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This Usenet posting managed to make headlines in all the daily papers in Israel, but following orders of the military censor, the name and address was blacked out. At the same time, anybody with Internet access could view the posting. A number of months later, the name of Carmi Gilon was officially made public, as was the name of the head of the Mossad. Since this incident, every intended appointment to the heads of both security services are now made public, allowing public debate and criticism prior to the appointments.

The third incident occurred a few months ago, following the attempted assassination of Khaled Mishal by the Mossad in Jordan. While the story was breaking elsewhere, the prime minister requested that the press refrain from reporting on the matter, claiming that such reports would endanger the lives of Mossad agents still in Jordan. The press went along with the voluntary censorship until details of the botched operation appeared on the Sunday Times of London web site. The dailies then felt free to deal with details of the case, leading to a public debate which almost caused the resignation of the prime minister, and which eventually led to the appointment of a new head of the Mossad.

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[4]*SHABAK* is the Hebrew Acronym for the GSS.

These incidents serve to underscore the tensions between national security and democracy in Israel, a tension that today is related more to the political and cultural concepts of democracy than to any real threat to the country's existence. Israel as a society is struggling with traditionalism, authoritarianism and nationalism, each appearing as components within the country's unique political culture. This paper will deal with the political and cultural aspects of democracy and national security in Israel vis a vis computer mediated communication, focusing on where these issues conflict with prevailing cultural attitudes towards freedom of expression and freedom of information. Prospects for cultural and political change as a result of widespread Internet use in Israel will also be discussed.

VIRTUAL ENVIRONMENTS AS SPACES OF SYMBOLIC CONSTRUCTION AND CULTURAL IDENTITY

Latin-American Virtual Communities

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Abstract. The aim of this work is to understand the sociopsychological and cultural realities of virtual communities as live spaces of meeting and high interaction framed within the Latin American context. The study will consist of a comparative ethnographic study of several Latin communities, using the tools of participant observation and focused interviews.

1. Approaching the Symbolic Dimension of Virtual Life

The present work has as a principal goal to assess the sociopsychological and cultural (symbols and meanings) realities of the virtual community group life framed in the Latin American context. Using a comparative ethnographic study of several Latin virtual communities, the sociopsychological and cultural phenomena of the virtual group in the sense expressed by Harré (1979), will be described.

The specific psychological phenomena and concepts central to this work are íntersubjectivity (Fernandez, 1989), group identity, symbolic communication, social acts (and its expressive dimension) and meaning processes. There's an obvious influence from Symbolic Interactionism, and Etogenics.

More than new channels of global communication, with CMC we are facing the birth of new social and cultural spaces of interaction for daily life. This symbolic and cultural meeting is a very complex and rich phenomenon that opens a new horizon of proposals and questions. Will it be the end of the ruler ideologies, or the birth of a new global unifying one? Habermass (1993) says that as long as there is two way communication in media, there will be public communities that fight homogenizing ideologies. CMC offers this double direction communication.

In this particular case, the project will be developed in the Internet Relay Chat environment. Despite the purely textual nature of the chat environment, it offers the versatility for the creation and maintenance of communities. Its commands and other features make IRC a very popular and attractive medium for communities to live in.

We define *virtual community* in the sense of Rheingold (1993) presented in his book *The Virtual Community: Homesteading on the Electronic Frontier*: "Virtual Communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace".

To assess analytically the study of virtual communities, Jones (1997) proposes a distinction between cyberspace, within which the community operates (called virtual settlements), and the community itself. It is through the analysis of these virtual settlements (objective components), that my research will characterize and classify the properties of a virtual community. Those are the two faces of the same coin. The notion of interaction is central to virtual settlements (Jones, 1997). Virtual settlements are cyberspaces symbolically delineated by a topic or topics of interest inside which an interesting proportion of CMC interrelationship and interaction occurs. The existence of a virtual settlement implies the existence of a virtual community. The conditions necessary for the establishment of a virtual settlement are the following according to Jones (1997): (i) a minimum level of interactivity; (ii) a variety of communicators; (iii) common public space (where a significant portion of a community's interactive group CMC occurs); and (iv) a minimum level of sustained membership.

This work assumes technology not as a determinant of on-line life, but a prerequisite for the occurrence of the virtual community social phenomena (Fletcher, 1995). Virtual environments offer a unique space for the creation and recreation of group cultures, showing all the meaning and valorization processes involved in the sociopsychological interaction. The main objective is not to focus on the community members' intraconscious life, but on the *inter*conscious "space" of the communities. We see the virtual community as a whole sociopsychological phenomenon created by the interaction of its members, who belong and make their own íntersubjective dimension. The principal notion of culture assumed is that of Geertz (quoted by Van Maanem, 1990), who defines it as "webs of significance he (man) himself has spun". This shared symbolic and meaning delineation also explains our notion of group identity.

We can say that the major part of this research is of an exploratory nature, because its main objective is to describe and to understand the virtual communities phenomenon. The implicit tasks are: the description and recognition of common and proper expressive resources (culture) of the

communities under study; and to discover the codes, norms and meaning structures that shape and valorize the members' acts.

Acknowledgments

References

Fernández, P.: 1989, Psicología social de la cultura cotidiana, *Cuadernos de Psicología. Serie Psicosociológica* 1, UNAM, Mexico.

Fletcher, R. J.: 1995, *The Limits of Settlement Growth: A Theoretical Outline*, Cambridge University Press, Cambridge.

Habermass, J.: 1993, *Teoría de la Acción Comunicativa: Complementos y Estudios Previos*, Edit. Rei, Mexico.

Harré, R.: 1979, *Social Being: A Theory for Social Psychology*, Basil Blackwell, Oxford.

Jones, Q.: 1997, Virtual communities, virtual settlements and cyber- archaeology: a theoretical outline, *Journal of Computer Mediated Communication*, 3(3).

Rheingold, H.: 1993, *The Virtual Community: Homesteading on the electronic frontier*, Addison-Wesley, Reading, MA.

Van Maanen, J: 1990*, Qualitative Methodology*, Sage, New York, pp. 19-36.

ADDRESSIVITY AND SOCIABILITY IN "CELTIC MEN"

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The development of a culture of communication rooted in the local and small-scale into one that operates within a much larger virtual environment raises a number of interesting issues for those studying CMC. This paper looks at the organisation of the "talk" that goes on within a newsgroup whose core was established in a Scottish island but which is now open to all UK subscribers to RumCom.

The linguistic organisation of computer-mediated communication shares many characteristics with other corpora, including conversational speech, interview talk and fiction narratives (Collot and Belmore, 1996). There is little doubt that while CMC draws upon and hybridises other forms of communication it is culturally distinct in its content and organisation. Yet there is a scarcity of research that describes the basic features of the communicative practices used in computer-mediated channels. How do participants recognise and maintain agreed structures of communicative exchanges? What methods of self-presentation are employed during these exchanges? As Baym (1995: 29) points out, there has been a tendency in studies of Internet culture to focus on the more outstanding or spectacular incidents of communication and interaction, such as "sexual harassment, gender-switching, electronic cads who break women's hearts, flaming and other abuses." What this leaves unexamined is the communicative and interactional processes through which harassment, flaming, gender-switching and the rest are done. In our case, we are interested in the methods through which sociability is accomplished in an ISP 'local' newsgroup.

This paper is part of a larger project which examines the sociable dimensions of computer-mediated communication in local newsgroups on the Internet. This paper, however, takes as its primary data a complete thread of eighty five messages posted to RumCom's largest ISP specific newsgroup, rumcom.local. The messages share the subject header "Celtic Men" and play off contributors ideas about regional aspects of masculinity and male sexuality. As a whole they provide a good example of both a specific culturally located example of developing communication and a more general example of newsgroup CMC. Using this case as our exemplar we shall hold up for examination three matters: how the technology and software supplied by

RumCom influence the form of interaction within the newsgroup; how different types of addressivity are used by posters to manage their communication; and how the notion of sociability figures as a useful device to characterise the specific traits of newsgroup interaction.

Technological Influence

RumCom provides for its subscribers' use its own proprietary off-line reader that dials into the ISP and downloads compressed news and mail packets. This is a significant consideration as online telephone costs in Britain vary between approximately one and four pence per minute depending on the time of the call. Typically, subscribers will dial into the server, get online, download their messages to their own computer and then go offline while they deal with them. By its asynchronous nature it is not possible for contributors to a newsgroup thread such as "Celtic Men" to interrupt another speaker's turn as it would be in face-to-face interaction.[1] Each poster is able to compose their contribution to the developing thread offline before posting their entire turn in its complete form. This also has the effect that the paralinguistic contributions made by a listener in face-to-face interaction are absent from the interaction that takes place within the newsgroup. The readers of any one post (whether they be actively involved in the developing thread of non-posting "lurkers") are not required, and indeed cannot, demonstrate involvement in the interaction by nodding, smiling or using phatic phrases such as, "uhm," "yes," or "I see."

This "passive" or "inactive" cast of this part of the communicative exchange contrasts with what is generally acceptable in face-to-face talk.[2] Perhaps the most noticeable feature is that individuals simply seem to drop out of the interaction. More precisely, the communicative form itself includes a 'latent' phase (cf Goffman, 1983: 3) that is standard and allowable. Should a thread lose interest for a reader for whatever reason, the reader can simply just stop reading the thread of contributions by particular posters. There is no need for the reader to excuse himself or herself as they would have to in face-to-face interaction nor face any later ramifications for such an unannounced exit from the interaction. Unlike face-to-face interaction "time out" from communicative demands is permissible. The non-sanctionable character of these absences is, within some general limits, made possible by the nature of the technology and associated economic constraints.

[1] In this way it is similar to the synchronous CMC discussed by Werry (1996) in his exploration of Internet Relay Chat.

[2] This is not to say that interaction in newsgroups is itself passive. Downloading, reading posts in the newsgroup are all active roles regardless of whether one chooses to post or chooses to remain lurking.

Addressivity

Since postings are asynchronous and because threads develop in virtual space rather than a shared physical space it becomes necessary for posters to recognise, orient to and negotiate what we shall call a layered organisation of addressivity. By this we mean that both posters and readers demonstrate an ongoing and self-maintained awareness of the implications of addressing persons within a posting. They recognise who is being addressed in any posting (i.e. who a specific part of a posting is "to"); who the message may refer to (either implicitly or explicitly); and the difference in posting messages addressed to individuals, groups, or the entire readership of the thread.

Thus, addressivity is an important area of concern in computer-mediated interaction. Newsgroup postings have developed practical methods to indicate who is undertaking focused interaction with whom in the absence of the usual embodied cues that are apparent in face to face interaction. Instead, a range of addressivity techniques are employed which seek to make messages more inferentially rich. These techniques fall into the following categories:

- *Specific*, i.e. to a named individual.

  Xref: rumcom.co.uk rumcom.local:94443

  Hello Robin,

  > Oh come on Fifi, grow up!

  Well, I'll be celebrating my fortieth birthday shortly.

- *Thread specific*, i.e. to all readers of a thread.

  Xref: rumcom.co.uk rumcom.local:93281

  Dunno about the rest of Britain, but I can say that Scotsmen are definitely a breed unto themselves! Absolutely sexy, passionate, willing and fun - as well as deep, understanding and very, very warm and loving. Well, my Scotsman is, anyway! :) (Much better than any American man I've known...)

- *Non-specific*, i.e. a posting to all potential readers of a list or lists. As suggested by the example below these are most often found either at the beginning of a thread of as an isolated posting.

  Xref: rumcom.co.uk rumcom.local:93243

  Are Celtic men a breed apart? How do they differ from the men beyond the Welsh border heading towards London?

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My mother said the Welsh are deep and brooding silent types.
Rather like Heathcliffe!
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- *Mis-addressed*, i.e. postings which are posted to a thread or newsgroup in error or as a spam such as this inappropriate advertisement for a pornographic web site posted to alt.binaries.missing-adults:

Xref: rumcom.co.uk alt.binaries.missing-adults:2235

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Over 70 Categories and growing.. 2 Absolutely FREE samples
in each category plus links to more porn then you can ever
shake your dick at !!! special offer
http://freepornpages.com/cgi-bin/receive?news
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- *Non-addressed*, i.e. a "me too" posting to a troll or dead thread. An example of this would be a posting from a newbie to one of the "Free Warez" (pirated software) or "Free Porn" threads which feature in a number of the alt.* newsgroups. Except for the first posting which claims to be building a list of recipients for the free goods/passwords/pictures these threads are made up almost entirely from people postings "me too" to a request to be added to the list. As these list get longer the original posting is deleted from news servers and the "me too" posting which follow it are effectively addressed to no one and read similarly.

Xref: rumcom.co.uk alt.2600.warez:65668

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>Please add me too ubatchelor@hotmail.com

Please add me too
delcastillo@earthcorp.com
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As the origins of these illustrative extracts suggest as we descend towards the bottom the list of forms of addressivity their presence within the Celtic Men thread decreases. This is due in part to the intimacy and sense of community maintenance that is associated with a rise along the above list.

With detailed reference to the development of the Celtic Men thread our research explores the use of addressivity techniques to secure differing 'footings' (Goffman, 1981). Footing refers to the 'alignment we take up to ourselves and others present as expressed in the way we manage the production or reception of an utterance' (Goffman, 1981: 128). We show the relevance of this concept for an analysis of the message-by-message constitution of a thread.

Given the virtual nature of newsgroup interaction, that all these categories must be constructed, recognised and responded to only through cues and

integrated into the text of the posting themselves.[3] Like the radio DJ, there is often no way in which a poster can know who or how many people they may be addressing through a single posting or how that may vary through a series of such. Similarly, even when addressivity is highly specific and posting are directed at a single reader of the newsgroup there is not, in general, a knowledge or relationship prior to or beyond the virtual familiarity that the addresser and addressee have.

It is at this point that the "Celtic Men" thread becomes a particularly useful working example as posting on rumcom.local are, at times, an interesting counterpoint to this general state. Because the ISP has its roots in a scottish sland there is still an unusually high amount of people subscribed to RumCom who live in this remote area. These people have often known each other before moving online and this pretextual knowledge is often highlighted in their postings. Therefore, "real life" relationships are singled out as separate and distinct from online ones.

Sociability

It is central what goes on in many newsgroups in general but rumcom.local in particular that the interaction and communication is sociable in Simmelian (1950) terms. That is it "has no ulterior end, no content and no result outside itself." Unlike business e-mails, task orientated CMC projects or web-based learning the main reason for involvement in the rumcom.local interaction is the pleasure that the interaction itself promotes. Not only do the threads in the newsgroup often taken on and playful, humorous and flirtatious complexion but even when arguments and heated debates occur they act as "The lively exchange of speech [which] unfolds it attractions" (Simmel, 1950). In short, "people become involved because they want, not because they have to" (Baym, 1995: 31).

The issue our research explores is how the organisation of CMC permits the posters of these messages to present themselves as agents with distinct identities and personas and how this is achieved within the frame of sociable interaction.

Although this mixture of physical acquaintance and virtual familiarity would suggest that there is a little need for individuals to "flesh out" their off-line identities in postings the Celtic Men thread demonstrate poster desires to paint physical pictures of themselves. Messages include individual allusions not only to broad physical attributes such as hair colour, body size or age but also more

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[3] It may be useful to delineate recognition of the organisation of addressivity as a general concept which is acquired through and applicable to newsgroups as a general interactional phenomenon and the specific encoding and recognition as a pragmatic example of specific communication within individual postings.

intimate revelations such as marital status, names of children and even experience of one night stands. Further, the thread, and postings to the newsgroup in general, demonstrate that as certain individuals post more often (and write more consecutive postings) to the newsgroup they become "known" and recognised by other readers and posters.

From an interactional perspective, the offering of such pieces of information suggests that a community-like environment is being maintained in which not only does the organisation of the CMC facilitate the ongoing talk but a sense of trust is being offered and accepted by those involved. Much of this exchange of information is done within a sociability frame (the 'thresholds' [Simmel, 1950] of which are eventually exceeded, which quickly leads to the termination of thread). Like the "sociable arguments" explored by Schiffrin (1984) the thread terminates unpredictable and "without speakers realigned toward a previously disputed issue." Further, because of the sociable nature of such debates there is no evidence that this failure to reconcile viewpoints carries with it any negative consequences and indeed appears to help build and maintain the community culture within shetlandcom.local and emphasis the closeness of the participants in that community.[4]

The manner in which addressivity (who talks to whom) and (self-) disclosure (what they say about whom) manifest themselves makes this form of CMC a specific form of interaction and marks the interaction as temporally and culturally specific site for the negotiation of identity.

References

Baym, N.: 1995, From practice to culture on Usenet, *in* S. L. Star, *The Cultures of Computing*, Oxford, Blackwell, pp. 29-52.

Collot, M. and Belmore, N.: 1996, Electronic language: A new variety of English, *in* S. Herring, *Computer-Mediated Communication: Linguistic, Social and Cross-Cultural Perspectives*, Amsterdam, John Benjamins, pp. 13-28

Goffman, E.: 1981, *Forms of Talk,* Blackwell, Oxford.

Goffman, E.: 1983, The interaction order, *American Sociological Review*, **48**, 1-17.

Schiffrin, D.: 1984, Jewish argument as sociability, *Language in Society*, **13**(3), 311-335.

Simmel, G.: 1951, Sociability, *in* K. H. Wolff (ed.), *The Sociology of Georg Simmel,* Free Press, New York.

Werry, C. C. 1996, Linguistic and interactional features of Internet Relay Chat, *in* S. Herring, *Computer-Mediated Communication: Linguistic, Social and Cross-Cultural Perspectives*, John Benjamins, Amsterdam, pp. 47-63.

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[4] Indeed, subscribers to shetlandcom.local often arrange "meets" in different parts of Britain. These are fully participated in by both contentious and non-contentious posters.

CULTURAL ATTITUDES AND TECHNOLOGY

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The theories that relate to the acceptance of technology tend to discuss the issues of media, leadership and networking. Although these processes are important in the acceptance of technology, it is proposed that epistemologies as measured by belief systems or mindscapes also play an important part in the acceptance of technology.

The cyclic epistemology, that is hypothesized by Maruyama (1994) as an Eastern epistemology is contrasted with the hierarchical epistemology of the West. The dialectic of Hegel (1975) is a borrowing of a cyclic epistemology to allow creativity in the midst of the hierarchical epistemology of Western philosophy. The G-Type of Maruyama accepts creative possibilities in the midst of the never changing cycles of the cyclic epistemology. Both Hegel and Maruyama require a combination of both cyclic and hierarchical epistemologies to develop a "spiral link" in order to have creativity.

To determine the relationship between acceptance of new technology and epistemology I administered a survey with students studying in the Honolulu area that compared their claimed use of technology with the results of the Harvey/Gore Belief System test. To compare with other factors I included the Inkeles and Smith (1974) Modernity Scale, which measures interest in media, acceptance of newness and new people, and concern about public issues

The survey also asked a series of demographic questions, especially ones that were considered to be related to the acceptance of technology. This part of the survey was extremely successful as most subjects answered all of the demographic questions.

The acceptance of technology was more related to particular demographic issues than to either the Modernity of Inkeles and Smith or the Belief Systems of Harvey and Gore. In particular, different types of technology showed that different demographic issues were important. The most interesting demographic effects were those of gender, father's education and area of national/cultural origin.

A very interesting result was that the belief systems of students who originate in the United States (mostly Hawaii) and are attending school in Hawaii were shown to be more commonly in System 3 and System 4 than the respondents in mainland United States as found by Rowley et al. (1992) in a recent test. The data indicated that mindscapes or belief systems, as predicted by Maruyama, are significantly different for different cultures. In fact the mindscapes of the students from Hawaii were more toward system 3 and system 4 than students who were from Asia. This shows that Students from Hawaii are more Asian in mindscape than Asians.

The survey indicated that neither the Modernity Scale results nor the Harvey/Gore Belief System Test results were strongly related to the use of technology. The demographic issues seemed to be far more important. This is in contrast to the theory envisioned.

The need for information is a cyclic process. Before the printing press people were satisfied with the little information they had because they knew nothing else. With the World Wide web, we have an extreme increase in the amount of information available. If there is no Internet, or I don't know it exists, then such information has no value to me. But once I know about the Internet, and see a need for some of the information that comes in that form my relationship to that technology will cycle from need to use to need, and grow.

The father's education differences, the gender differences, the age differences, and the lack of class differences tend to indicate a need function rather than economic function in the growth of technology. The lack of significance of either the Harvey/Gore or the Inkeles and Smith scales indicates that the old conception of the growth of technology is flawed. Herbig and Polumbo (1994) list the criteria for innovation. These include applicability, profitability, and affordability. These can be summarized into the concept of need, while recognizing the cyclic character of the need/use process.

It is obvious that new technology efforts need to be tied to the needs of those for whom the technology is aimed. The acceptance of one level of use based on need can be used as a starting point and stepping stone in developing further need from the need/use cycle. An innovation that is not needed in this kind of relationship with use will not be accepted or the acceptance will be minimal.

References

Hegel, G. W. F.: 1975, *Lectures on the Philosophy of World History*, [trans. by H. B. Nisbet includes an introduction, by Duncan Forbes], Cambridge University Press, New York.

Herbig, P. A., and Palumbo, F.: 1994, The effect of culture on the adoption process: A comparison of Japanese and American behavior, *Technical Forecasting and Social Change*, **46**, 71-101.

Inkeles, A., and Smith, D. H.: 1974, *Becoming Modern*, Harvard University Press: Cambridge, MA.

Maruyama, M.: 1994, *Mindscapes in Management: Use of Individual Differences in Multicultural Management*, Aldershot, Dartmouth.

Rowley, D. J., Rosse, J. G., and Harvey, O. J.: 1992, The effects of belief systems on the job-related satisfaction of managers and subordinates, *Journal of Applied Social Psychology*, **22,** 212-231.

PART 5

EAST/WEST CULTURAL ATTITUDES AND COMMUNICATIVE
PRACTICES

PRESERVING COMMUNICATION CONTEXT

Virtual workspace and interpersonal space in Japanese CSCW

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Abstract. The past decade has seen the development of a perspective holding that technology is socially constructed (Mackenzie and Wacjman, 1985; Bijker, Hughes and Pinch, 1987; Bijker and Law, 1992). This paper examines the social construction of one group of technologies, systems for computer supported cooperative work (CSCW). It describes the design of CSCW in Japan, with particular attention to the influence of culture on the design process. Two case studies are presented to illustrate the argument that culture is an important factor in technology design, despite commonly held assumptions about the neutrality and objectivity of science and technology. The paper further argues that, by looking at CSCW systems as texts which reflect the context of their production and the society from which they come, we may be better able to understand the transformations that operate when these texts are "read" in the contexts of their implementation.

This paper describes the design of systems for computer supported cooperative work (CSCW) in Japan with particular attention to the influence of culture. In doing so, it raises larger issues of the relationship between technology and context, asking how ideas and circumstances affect action. As such, it is part of a growing body of work struggling to come to terms with this question, made more significant by increasing globalization and the growing impact of technology (computer-based or not) in our lives.

We believe that CSCW is a particularly appropriate object for this type of inquiry, since it is generally recognized as a field which spans a number of boundaries and integrates a variety of perspectives, ranging from those of hard science (engineering) to social science and even philosophy. As such, it can be thought of as a messy model or hybrid, in which the social and the technical are inextricably intertwined. The social "content" of a CSCW system is thus much greater that that of, say, a toaster or even a television. On the other hand, one

cannot make abstraction of the very real technical knowledge and constraints that go into building a working system.

This paper suggests that CSCW systems, like all technologies, can be read as texts. These technological texts contain some elements which are distinctive to their culture of origin, without necessarily being unique to that context. It further offers a plausible explanation for these design choices, basing its argument in the discourse of designers themselves. It draws on the notion of technological frame (Bijker and Law, 1992) to explain how Japanese CSCW designers invoke Japanese culture in general and certain aspects in particular as resources upon which to found technical decisions, illustrating the translation of these cultural arguments in CSCW systems.[1]

1. Background

Cultural attitudes towards technology and cultural dimensions in the implementation and use of technology are topics of increasing interest worldwide, perhaps as a result of increasing globalization and intercultural contact. This subject is becoming all the more significant with the proliferation of new communications technologies which hold out the promise of global communication. The novelty of new computer-mediated communication networks does not, however, mean that we must start from scratch in attempting to understand how people from different cultures will use them, and how diverse cultural attitudes are likely to affect their use. Over the past twenty years these question have in fact been explored in the fields of both organizational and development communication.

In development communication, a turn-key approach to technology transfer has been rejected in favor of other models which accord substantial importance to culture. Among them, there has been considerable research on the importance of technological infrastructure and predisposition or competency as preconditions for technology transfer (Andrews and Miller, 1987; Copeland, 1986), as well as various measures for increasing the likelihood of successful transfer: modification of imported technology by local engineers to make it more "appropriate" (De Laet, 1994; Ito, 1986), a two-step flow in which new ideas or technology are introduced first to an opinion leader or technological gatekeeper who then persuades others to adopt it (Rogers and Shoemaker, 1971), or involving stakeholders in planning and decisions (Ackoff, 1981; Madu, 1992). All this work shares a concern for facilitating accommodation to a

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[1] It is not the intention of this paper to demonstrate causality, and the author is well aware of the dangers involved in the retrospective reconstruction of intentions and influences from a finished product so characteristic of early SCOT (social construction of technology) work. It should simply be read within the larger objective of clarifying the relationship between what designers do and how they do it, and between what they do and what they say.

changing environment produced with the introduction of new technology. In other words, making the technology fit its context of implementation and use has been found to considerably improve the chances of optimal use.

Understanding the reciprocal link between organizational practices and technologies has also been a key concern of organizational communication scholars, particularly with the advent of office automation and computerization. Many have drawn on Giddens" structuration work (Orlikowski and Gash, 1994; Orlikowski, 1992; Poole and DeSanctis, 1990) to explain how computerization changes organizational structure. Heath and Luff (1994) have studied the evolution of social interaction in technological environments. In the field of information systems management, several authors have suggested that differences in national culture may explain differences in IS effects (Deans and Ricks, 1991; Raman and Watson, 1994; Watson and Brancheau, 1991).

In short, studies in development and organizational communication over the past two decades have consistently pointed to three key factors in explaining successful IT implementation:
1. existing technological infrastructure and predisposition - the context;
2. the process of implementation; and
3. the importance of viewing use as a process in which uses change over time. This is evidenced in needs and gratifications, and active reception theories of communication.

At the same time, there has been a growing backlash against technological determinism, an increasing awareness that the path a given technology takes may not be inevitable and absolute. Although many engineers may continue to support the position that the technologies they build are neutral, it has become something of a commonplace in the social sciences to say that technology is socially constructed. In recent years, numerous instances of how technical artifacts embody political, cultural or economic positions have been identified (see for example the collections edited by Bijker, Hughes and Pinch,1987 and Bijker and Law, 1992, as well as Winner, 1993). Increasingly, it appears important to understand how technological artifacts are constructed and how the end result relates to its conditions of construction if we are to understand their implementation and use.

The challenge for social science, in our view, is to go a step further to examine *how* this process of social construction is accomplished and to determine which aspects of the black box called "technology" are more or less susceptible to social influences. By asking how ideas and circumstance affect action, we are in fact raising larger issues of the relationship between technology and context. As such, this research is part of a growing body of work struggling to come to terms with this question of growing significance given increasing globalization and the increasing impact of technology (computer-based or not) in our lives. (Hales, 1994; Jackson, 1996).

2. Research Question and Method

This paper focuses on one object: computer-supported cooperative work (CSCW), one stage in the process: design, and one cultural context: Japan. It is based on a larger, comparative study (Heaton, 1997) whose central research question was the extent to which different preoccupations in different countries are the result of different "cultural constructions of computing." In other words:

1. How do CSCW designers translate their ideas about what people do when they work, and the role of computers in supporting work, into the systems they design?
2. What is the impact of the circumstances[2] in which designers find themselves, on the systems they design?

Given the complexity of the subject matter, and the small number of laboratories actually involved in CSCW design, we adopted a case study approach as an appropriate means of capturing the subtleties of the multitude of situational variables and their interaction. During five months of observation in various CSCW laboratories, the author conducted extensive interviews with over twenty software designers and took part in numerous informal conversations with others involved in CSCW research. Earlier typologies of cultures, particularly as they have been applied to the world of work, were used as a starting point and a general guide for observation, although no attempt was made to fit the data gathered into these classificatory schemes. Analysis of documents produced by the laboratories in question was also an important part of the process. Some of these documents described the CSCW systems, while others were explanatory in nature. Both internal (working documents, memos, project reports) and external documents (scientific publications) were analyzed. The focus was double: to understand how designers perceive their work through what they say and write about it, and to analyze the work itself (both work practices and the resulting machines and software), the goal being to draw parallels between the two.

The present paper focuses primarily on the relationship between designers' justifications for their choices and how these choices are reflected in the design of machines and software. The specific cases presented are illustrative of larger tendencies and trends in CSCW design in Japan.

3. Patterns in CSCW Research

In the context of this paper, CSCW has been broadly defined as: *work by multiple active subjects sharing a common object and supported by information*

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[2] Circumstances here include the larger institutional context, as well as daily work practices, which serve as both resources and constraints on what can be *done*. While they provide structure, these resources and constraints should not be taken to be immutable.

technology. The presence of active subjects provides a means for delineating CSCW from traditional office automation perspectives. Furthermore, a community which shares a common object of work can always be delineated in practice, whatever the contributions of the different participants. The focus of computer supported cooperative work, then, is less on working with computers than on working with each other *through* computers. This changing orientation opens the door to a real contribution from social scientists to understanding the complex relationship between technology and its context of emergence and implementation.

A quick survey of the CSCW literature points to an amazing variety of "solutions" or approaches to similar problems. What is more, these solutions seem to follow certain patterns. Not only are there very real differences between the various communities of practice involved in CSCW[3], the field also demonstrates marked regional differences in emphasis and perspective. American CSCW has tended to take an empirical approach and to focus on product development and small-group applications, while Europeans are generally more theoretical or philosophical in orientation and tend to focus on the user organizations and organization systems. In Japan, considerations have generally been pragmatic and there is considerable interest in formal workflow management systems and the software factory concept.

A systematic review of the CSCW and European CSCW conference proceedings over the past decade (Heaton, 1997) documents a number of general patterns in how CSCW researchers present their work to the international academic community of their peers. Presentations coming out of Japan illustrate a considerable homogeneity in research interests. *All* the research presented at international CSCW conferences has centered on the exploration of the possibilities of video, multimedia, and large screen displays. Gesture has a major importance, as does shared view of workspaces. Japanese work tends to present solutions which are technically innovative and which require major investments of technical resources (high bandwidth communication channels, large flat screen displays, a number of video cameras, etc.) Finally, the Japanese groupware scene is much more technically oriented than European or American contexts. Japanese researchers readily admit to their technical focus and product orientation. In fact, one of the prime criteria for evaluating a research project appears to be whether or not it is up and running, and it is inconceivable for the researchers interviewed that research not lead to a *working* system.

In contrast, video-mediated communication is completely absent in Scandinavian work, which focuses on organizational issues and is typically presented in

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[3] The pervasive tension between designer/engineers on the one hand and social scientists on the other has been referred to within the CSCW world as the "great divide". It is increasingly recognized as a fact (even a defining characteristic) within the field. (see Bannon and Schmidt, 1991)

the form of cases in which designers have been active participants. Cooperative design, supporting users in their daily work, and looking at work as situated in a specific context are common themes. British work is fairly equally distributed among case studies, conceptual and technical articles, while the volume and variety of work done in North America makes it very difficult to classify: all tendencies are represented, from high-tech video-intensive environments, to ethnographic studies of implementation and use, to theoretical models of coordination.

The question remains: how can we explain that designers, who have similar technical knowledge and professional backgrounds, choose to explore different issues or questions, and, what is more, appear to answer them in different ways? This is all the more astonishing given the fact that they identify themselves as members of the same research community and are in regular contact with designers from various countries and institutions. Clearly differences between communities of practice alone cannot explain these differences in orientation. Grudin (1991a, 1991b) has outlined a number of partial explanations: institutional support, funding, even cultural norms; others have applied an actor-network approach to analyze the political and cultural regimes in which design is embedded in specific cases (Gärtner and Wagner 1994; Hakken, 1994). Here, we seek an explanation for regional differences in CSCW not in institutional variables, nor in strictly professional ones, but at a mid-level between micro and macro - in culture, which is both an individual attribute and a collective phenomenon. Field research provides concrete illustrations of the importance of culture as a variable in the technology design process.

4. On Culture

While Japanese CSCW design is the focus of this paper, this should not be taken to imply simply a discussion of national culture. As will become clear in the discussion of our cases, organizational and professional cultures are also vital elements in the mix. First, however, some background and clarification of what we mean by culture is in order.

The movement to distinguish between national cultures finds its roots in social anthropology of the 1930s and 40s. More recently, forces in the real world have heightened awareness of the importance of the cultural factor and a number of studies on work organization and work attitudes have consistently demonstrated significant differences across national cultures. Among a number of typologies of cultures, the most widely cited and one of the most thorough is that of Geert Hofstede. In an attempt to identify cultural predispositions that

Bourdieu has called *habitus*[4], Hofstede (1980) administered standardized questionnaires to some 116,000 people working for IBM in a variety of professions in over 50 countries in 1968 and again in 1972. On the basis of this data, Hofstede defined several *dimensions of culture*.[5] This, and other similar studies clearly indicate that people from different cultures bring different attitudes to their work and that this results in national differences in the way work is organized as well as in different work practices.

Japan, for example, can be characterized as a group-oriented society with a long-term orientation, strong uncertainty avoidance, highly differentiated gender roles, and which accepts the unequal distribution of power. North American society, on the other hand, is highly individualistic and less tolerant of the unequal distribution of power, with a short-term orientation, and medium degrees of uncertainty avoidance and gender role distinction. The four Scandinavian countries form a relatively homogeneous group, with few gender distinctions and generally low power distance, more group-oriented than North America but less so than Japan.

Another body of literature has examined differences in attitudes, values and practices between professions. A person's occupation or training undoubtedly has a major influence on how he or she approaches the world. For example, computer scientists likely draw on a similar pool of knowledge and techniques relative to systems development, which in turn calls for and constitutes a particular way of looking at the world.[6] Similarly, social scientists may not always share common frames of reference but most will share certain elements of common knowledge. In the case of CSCW, it is probably justifiable to

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[4] Bourdieu's idea is that certain conditions of existence produce a habitus, a system of permanent and transferable dispositions. A habitus functions as the basis for practices and images which can be collectively orchestrated without an actual conductor.

[5] The first dimension, that of *power distance*, refers not the actual distribution of power, but to the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. This dimension has implications for hierarchy, centralization, privilege and status symbols. The *individualism/collectivism* dimension identifies the strength of ties to and belonging in a group. One might expect this dimension to be correlated with loyalty, trust, shared resources, even the relative importance of verbal or nonverbal communication. The *masculinity/femininity* dimension measures the clarity of gender role distinction, with masculine cultures having clearly defined gender, and feminine cultures considerable overlap. Finally, the *uncertainty avoidance* dimension measures the tolerance (or intolerance) of ambiguity, the way in which people cope with uncertain or unknown situations. In the workplace, one might expect correlations with the way the environment is structured, rules, precision and punctuality, tolerance of new ideas, as well as with motivation (achievement, security, esteem, belonging).

[6] Although the training of computer scientists in Scandinavia, Japan and North America may also differ significantly in terms of "peripheral" components, with consequent implications for how they see their role. See Dahlbom and Mathiassen (1993) for a detailed description of the mechanistic, rational worldviews implicit in computer science and systems development.

distinguish a third general professional group, composed of managers and end-users.

Professional culture becomes a central concern as soon as communication between communities of practice becomes necessary. Systems engineers may be operating from one set of assumptions, while those studying the work practices the system is designed to support or supplant may have a fundamentally different perception of the task at hand, and those who initiated the project (upper management, unions, etc.) yet other objectives and perceptions. The negotiation of shared meanings is a key research issue in CSCW. [7]

Ulf Hannerz (1992: 249) has coined the term transnational cultures, which he defines as "structures of meaning carried by social networks which are not wholly based in any single territory." Many transnational cultures are occupational. Hannerz suggests that, while it makes sense to see them as a particular phenomenon, they must at the same time be seen in their relationships to territorially based cultures and argues that their real significance lies in their mediating possibilities. While "transnational cultures are penetrable to various degrees by the local meanings carried in settings and by participants in particular situations"(p. 251), they also provide points of contact between different territorial cultures.

The important point here is that occupational culture need not be a subset of national culture. Rather, the two are distinct and interrelated. Those involved in CSCW system design share a common "CSCW culture"[8], but they also reflect and interpret this professional culture within the framework of their territorial cultures, just as professional training and perspectives lead them to interpret elements of territorial culture in certain ways. A given situation, say the design of a particular CSCW system, can be understood in cultural terms as the product of what is unique (national culture) and what is shared by all (occupational culture). The resulting combination of the two will necessarily differ between cultures and even between systems in the same national culture, because conditions can never be identical.

Finally, there is organizational culture, which is perhaps best understood as a root metaphor. Starting with the premise that organization rests in shared systems of meaning, and hence in the shared interpretative schemes that create and recreate that meaning, it directs attention to the symbolic or even "magical" significance of even the most rational aspects of organizational life and calls for recognition of the complexity of everyday (organizational) life. Erez and Earley (1993: 69) cite a number of empirical studies which suggest that national or

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[7] The notions of communities of practice, boundary practices and boundary objects have been explored by a number of authors, including Brown and Duguid (1991, 1994), Wenger (1990), Star and Griesemer (1989).

[8] This should not be taken to suggest that there one could identify a single CSCW culture. Far from it! It is surely more appropriate to talk about a *mix* of CSCW influences.

societal culture must be considered along with organizational culture in order to fully understand the relation of an organization's culture to its functioning.

In summary, for the purposes of this research culture is defined as a dynamic mix of national/geographic, organizational, and professional or disciplinary variables in constant interaction with one another. Culture changes according to context and over time, and should be understood not in terms of pre-existing, fixed categories, but as resources, accumulations of actions, patterns which constitute, reinforce and transform social life. In short, culture is continually constructed and reconstructed.

5. Culture in the Frames of CSCW Researchers

The notion of technological frame provides an interesting way of approaching culture from a constructivist perspective. Law and Bijker (1992:301) uses the notion to "refer to the concepts, techniques and resources used in a community - any community. ... It is thus a combination of explicit theory, tacit knowledge, general engineering practice, cultural values, prescribed testing procedures, devices, material networks, and systems used in a community." It is simultaneously technical and social, intrinsically heterogeneous. The related expression *frame of meaning* as coined by Collins and Pinch (1982) and adopted by Carlson (1992) in his study of Edison and the development of motion pictures, translates the specific focus of this paper on how cultural patterns and assumptions inform actions and shape choices most closely:

> ... in any given culture there are many ways in which a technology may be successfully used... To select from among these alternatives, individuals must make assumptions about who will use a technology and the meanings users might assign to it. These assumptions constitute a frame of meaning inventors and entrepreneurs use to guide their efforts at designing, manufacturing, and marketing their technological artifacts. Such frames thus directly link the inventor's unique artifact with larger social or cultural values. (Carlson, 1992:177)

Carlson argues that designers attempt to impose pre-existing frames based on previous experience on new products or invention, rather than inventing new frames. This unconscious process of "cultural creep" results because designers create artifacts to fit into the cultural spaces suggested by their existing frames of meaning. It is only after their introduction that new uses and new cultural meanings are developed. Thus, users are present *virtually* in designers' frames, whether or not an artifact has actually been used (Flichy, 1995). The distinction between design and use thus appears more of an analytic convenience than a hard and fast rule. Consequently, we suggest that it may be more valuable to

approach design-implementation-use as a single process, in which all stages are interrelated.

The following section presents the world of two Japanese CSCW laboratories, with a view to highlighting common research themes. A brief description of the overall context of CSCW design in Japan is followed by detailed presentation of two research projects. The section concludes with a discussion of general trends and characteristics and relates them to cultural characteristics and beliefs, which are intimately connected to designers' views of their systems' eventual use.

6. Japanese CSCW: Quality (and Quantity) of Work

CSCW in Japan is a development of the telecommunications, electronics and engineering industries and is thus closely identified with a product, rather than a research orientation. A "hard" science approach dominates. Virtually all those involved in designing CSCW systems in Japan are engineers or computer scientists. They identify strongly with their profession, and building a *good* system, that is one that works, is reliable, state-of-the art, original, is both the goal and a measure of their capabilities as engineers. Design work is done exclusively in the labs, and any evaluation of prototypes takes the form of controlled laboratory experiments. Designers are not generally concerned with who will use their systems, or how they will be implemented. Multidisciplinary collaboration is not considered, let alone practiced.

With so technical a focus, it is not surprising that the main justifications for design choices are technical ones. There is however, another, more social, element to Japanese design choices, that of Japanese culture. Professional engineering or scientific culture notwithstanding, Japanese CSCW researchers, like most Japanese people, clearly believe that Japanese culture and the Japanese way of working are different from the Western ways.[9] How to reflect or cope with this difference in designing technology is a constant *leitmotif* among Japanese CSCW researchers. Although most would prefer to believe that science and technology are culturally neutral or universal, they nevertheless recognize that, if use is a consideration, designing a groupware system cannot be approached the same way as designing a television.

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[9] Mouer and Sugimoto (1986) trace the long history of the theme of Japanese uniqueness and suggest that, while the ideology of Japanese uniqueness has been used in the service of many interests, the basic assumption that all Japanese possess a common set of attitudes and share similar behavior patterns has remained largely unquestioned, particularly in English language publications. They conclude that the relationship between this ideology and views of Japanese society is maintained by a complex network of interpersonal and inter-institutional relationships. In other words, Japanology is a self-fulfilling prophesy, a social construction almost universally subscribed to.

The dean of groupware in Japan, Professor Matsushita, cites five principal specifically cultural reasons why groupware must be different if it is to be used in Japan: cultural differences in views on cooperation and competition, negotiation style, degree of context, the importance of human relations, and the relation of the individual to the group. Even those who deny specifically cultural aspects in the design of CSCW and groupware in Japan, acknowledge cultural effects in implementation and use. Some major Japanese companies are now selling workflow systems developed by American companies, but this is problematic. In the words of another leading researcher, the biggest challenge facing Japanese groupware is "attaining widespread use. Managers don't want to change the way they work. They want to be able to consult with people as they usually do."

How does this desire to reflect cultural particularities play out in practice?

6.1. TEAMWORKSTATION/CLEARBOARD (NTT HUMAN INTERFACE LABS)

Our first example, TeamWorkStation, is one of the earliest and most documented Japanese CSCW projects. It has been widely cited within the CSCW community and has inspired considerable research within Japan around the concepts of seamlessness and gaze awareness. Ishii and his collaborators at NTT Human Interface Labs were not the first to develop the concept of a seamless work environment, however; nor were they the first to explore peripheral awareness. Both were borrowed from work done originally at Xerox PARC. But the Japanese way of dealing with these issues is unique, and the progression from TeamWorkStation I to TWS II to ClearFace to ClearBoard is illustrative of incremental development of research intuitions as well the resolution of technical problems.

TeamWorkStation (TWS) is "a desktop real-time shared workspace" which integrates both computer and desktop workspaces. Starting from the premise that "no new piece of technology should block the potential use of already existing tools and methods" (Ishii and Miyake, 1991: 39), the team set out to design a system that would allow users to maintain their preferred work practices, using their preferred computer applications, or even working with pencil and paper within a shared virtual workspace. Acknowledging that people might not do everything by computer and supporting their continued use of paper-based media were revolutionary concepts in CSCW at the time.

A second design requirement was a shared drawing surface. The research team chose video as the basic media of TWS for its ability to fuse traditionally incompatible media such as papers and computer files (Ishii and Miyake, 1991: 39). Live video image synthesis was employed to capture individual workspaces (both computer screens and physical desktops) and to display them in separate layers on a computer monitor. The overlay function created with this technique

allowed users to combine individual workspaces, and to point to and draw on the overlaid images simultaneously.

The three-member design team began to use the prototype on a daily basis in July 1989, and informal evaluations of its use pointed to the importance of gesture as a means of enforcing the sense of shared space. They preferred hand gestures to pointing or marking with a mouse "because hand gestures are much more expressive, and because hand marking is generally quicker" (Ishii and Miyake, 1991: 45). Since the TWS prototype was designed without a formal floor control mechanism for passing the input control among collaborators, voice contact played an important role in preserving informal social protocol and coordinating action, especially the use of the limited workspace on the shared screen (Ishii and Miyake, 1991: 45).

The faces of collaborators were displayed in separate windows beside the shared workspace in TWS. But spatial awareness was already a concern, and was developed further by ClearFace and later ClearBoard. All previous approaches to CSCW screen layout (tiling (i.e. laying them side by side) or overlapping windows) required users to shift their focus between the shared drawing space and the facial images and deal with separately. Developed initially as a solution to a technical problem: how to make the most of limited screen size (14" in the TWS prototype), the ClearFace interface proposed translucent, movable and resizable face windows which overlay the shared workspace window. The user could see the drawing space and his collaborators' faces in the same space and shift easily between the two. The team explained this facility using Neisser's theory of selective looking and the high recognizability of human features, further reasoning that it is rarely necessary to attend to both at the same time (figure ground relationship), thus eliminating possible confusion of different "layers". In use, they observed that people hesitated to draw or write over people's faces, inciting them to make the face windows movable and resizable.

With ClearFace, the design team began to explore the dynamic relationship between elements in design meetings. Their focus shifted away from task - what workers are doing - to how they are relating to each other as they do it. In one of their later papers, Ishii et al. present this change as a transition from a focus on *shared workspaces* to the creation of *interpersonal spaces* (Ishii, Kobayashi and Grudin, 1992: 33).

> At the same time, in the discussion, the participants are speaking to and seeing each other, and using facial expressions and gestures to communicate. In the conversations it is essential to see the partner's face and body. The facial expressions and gestures provide a variety of non-verbal cues that are essential in human communication. The focus of a design session changes dramatically. When we discuss abstract concepts or design philosophy, we often see each other's face. When we discuss concrete system architectures, we intensively use a whiteboard by drawing diagrams on it.(Ishii and Arita, 1991:165)

The effort to simulate as closely as possible the collaboration in front of a whiteboard was taken a step further in ClearBoard, the first prototype to refer explicitly to eye contact and gaze awareness (see Figure 1). The design metaphor here was talking *through* and drawing *on* a transparent glass window. The system used colored markers on a glass board, and video and a half-mirror technique to capture and orient the drawings. In this case, users recognized their partner as being *behind* a glass board and they did not hesitate to draw over the facial image. The large size of the drawing board supported awareness of gesture and of the partner's surrounding environment, as well as of his visual focus.

> The most novel feature of ClearBoard, and the most important, is that it provides precise "gaze awareness" or "gaze tracking". A ClearBoard user can easily recognize what the partner is gazing at on the screen during a conversation. ...The importance of *eye-contact* is often discussed in the design of face-to-face communication tools. However, we believe the concept of gaze awareness is more generalized and is a more important notion. *Gaze awareness* lets a user know what the partner is looking at, the user's face or anything else on the shared workspace. If the partner is looking at you, you know it. If the partner is gazing at an object in the shared workspace, you can know what the object is. Eye contact can be seen as just a special case of *gaze awareness* (Ishii and Kobayashi, 1992: 530-531).

Figure 1. *Clearboard*
© ACM, 1993, *TOIS*, **11** (4) Ishii, Kobayashi and Grudin

Gaze awareness allows participants to better situate the interaction within its context, providing a wider variety of cues for feedback and a richer awareness

of the environment and others' activities. The emphasis on non-verbal cues and direction of gaze rather than eye contact is particularly significant coming from a culture in which eye contact is much less common than in Western culture and is in many cases considered rude. Indeed, Ishii et al. make a veiled reference to this problem: "ClearBoard makes eye contact easy to establish and may even make it more difficult to avoid. It has been shown that the use of eye contact varies with the culture (e.g. Argyle, 1975); these are issues for further exploration in ClearBoard settings" (Ishii, Kobayashi and Grudin, 1993: 372).

Several technical problems present in ClearBoard-1 (low video resolution, forcing the use of thick markers which quickly used up the drawing space, and the inability to alter the partner's drawing in shared video drawing) were resolved in ClearBoard-2, an extension of the same idea but this time using computers. Multi-user drawing software and digitizer pens were used to permit the direct recording of work by any number of users simultaneously. This also allowed the integration of computer files into the system, and enabled the results of design sessions to be saved as PICT files. Finally, the ClearBoard-2 design led to some reflections on interpersonal distance:

> ClearBoard creates the impression of participants standing about *one meter apart*, because both sit (or stand) close enough to the screen to draw directly on its surface. This virtual distance belongs to the *personal distance* in Hall's classification. When people use ClearBoard with close friends or colleagues, this distance seems appropriate. However, for a formal meeting with a person of much higher rank, this virtual interpersonal distance might seem too small, and the participants might be uncomfortable. Therefore, we would like the media to provide users with some control over the virtual interpersonal distance. We are planning to provide an option of indirect drawing using a wireless tablet or pen-based personal computer for that purpose.(Ishii, Kobayashi and Grudin, 1993:371-372)

While the NTT Human Interface Labs team was disbanded before they were able to pursue this research direction, the concern for interpersonal distance was picked up and further explored by another research group in our next case, MAJIC.

6.2. MAJIC (MATSUSHITA LAB, KEIO UNIVERSITY)

Our second case is a system developed at the Matsushita Lab in the Instrumentation and Engineering Department of Keio University, a prestigious private university located near Tokyo. MAJIC illustrates many research themes characteristic of Japanese CSCW. To a large extent, it builds on earlier Japanese work at NTT on eye contact and gaze awareness, adding a multiparticipant dimension and a more explicit focus on the surrounding environment. This relationship to earlier work is both professional and personal. In addition to the bibliographic citations in published papers, one of the designers told me

specifically that he was influenced by Dr. Ishii's work on gaze awareness. Furthermore, one of the Clearboard designers was his *sempai* (upperclassman) at Keio University. The MAJIC team explains clearly why they feel this line of inquiry is important:

> When we have discussions in face-to-face situations and people approve of a statement, we can tell by their attitude, tone, eye movements, gestures and so forth, whether or not they approve wholeheartedly. It is difficult, on the other hand, to estimate how strongly they approve when we read only the minutes without attending a meeting. Hence, one of the purposes and/or advantages of face-to-face meetings is that all of the participants are *aware of the speaker's intent and the other listeners' reactions* based on both verbal and nonverbal communication. (Okada et al.,1994:385)

As in TeamWorkStation, there are multiple references to the importance of context, orientation to the other (how what you say is being received), and a focus on interpretation of intention rather than surface meaning. The key design issues of MAJIC were defined as (i) support of multi-way round-table meetings and multiple eye contact; (ii) maintenance of peripheral gaze awareness; (iii) seamless presentation of life-size images of participants to achieve a sense of reality; and (iv) a shared work space (Okada et al., 1994: 385).

The creation of a seamless environment and sense of presence in MAJIC relies extensively on nonverbal behavioral information, such as eye contact, gaze awareness, gesture and body language, and on contextual cues such as image size, distance and background. References to these elements are extremely specific. For example, the MAJIC team refers to symmetrical or asymmetrical postures and body orientations as important cues: "In this way we sense the atmosphere in the meeting room and the aura of the participants, and, consequently, we can understand the opinions of the participants clearly and make the meeting productive" (Okada et al., 1994: 386). They cite gaze as a means of controlling a meeting: "A chairperson sometimes gazes at participants to urge them to speak when there is silence in a meeting" (p. 386), and discuss the social uses of eye contact: "Of course eye contact is very important in communicating with one another, as mentioned above, but especially in Japan it is impolite to look into someone's eyes for a long time" (p. 387). In their observations of face-to-face meetings, the designers noted that participants most commonly averted their eyes by looking down at material on a table in front of them, and decided to provide such a table in their design (p. 390).

Referring to Hall's (1976) classifications of appropriate distances for interactions, the MAJIC team discusses elements which may affect *virtual distance* (the sensed distance among participants): physical distance from the display, the size and quality of video images, voice fidelity, backdrop, etc. In fact, this has been the central focus of most of the MAJIC research. Starting with the assumption that image size of participants and background are the two

important factors in achieving a sense of reality during videoconferencing, MAJIC I was designed to project life-size video images and to simulate a virtual social distance of approximately 4 feet between participants.

The central element of MAJIC is a large (4x8 feet), curved semi-transparent screen. Each MAJIC unit also contains a workstation (with a recessed, tilted monitor), two video projectors, two video cameras, two directional microphones and two loudspeakers. Video images of the participants are projected onto the screen and captured from behind it. Each participant sees the frontal view of the others and the edges of the images overlap slightly (see Figures 2 and 3).

The second factor deemed essential for "achieving a feeling of togetherness during videoconferencing" (p. 390) is the continuity of background images. In this interpretation of "seamlessness" if images run into each other, it is difficult to tell where one ends and the next begins; "if users are surrounded by other participants with a seamless background, they can feel as though they are together." (p. 386) In actual fact, the backgrounds must be "matched" at the seam. But this is only a prototype; MAJIC proposes doing away with the actual background altogether and replacing it with an artificial one that can be chosen to create a desired mood, to relax or to inspire (p. 386 and personal communication). This would be done using a chromakey blue background.
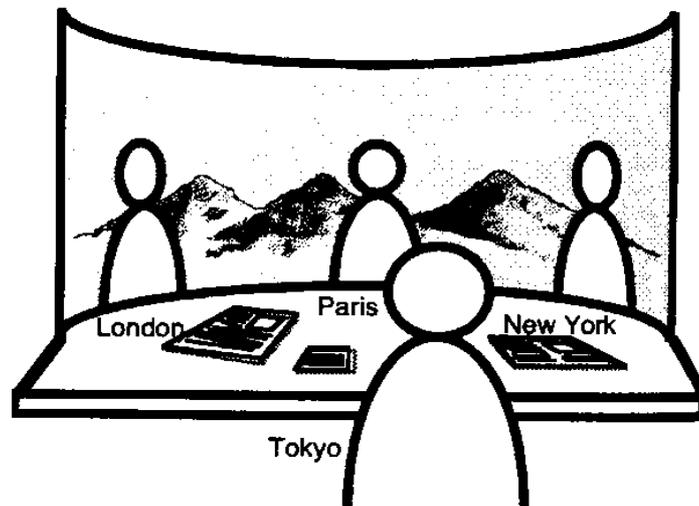

Figure 2. First draft of MAJIC
©ACM, 1994 CSCW'94

Figure 3. Gaze awareness in MAJIC, ©ACM, 1994 CSCW'94

Laboratory evaluations of MAJIC I and observations of use at a trade fair led to several improvements or additions in MAJIC II. For example, in a questionnaire administered to 40 students, 3/4 size images were rated more convincing than life sized ones. This led to experiments to determine the ideal relationship between distance from the image and image size and an adjustment in MAJIC II. There have also been a number of strictly technical improvements: improvement of image quality, reduced size of the prototype, etc.

A further extension of the idea of direct physical manipulation in MAJIC II is the "Whisper Chair." By leaning right or left, the person sitting in this chair (equipped with sensors) can talk to one or the other persons on screen without the third party hearing. The rationale behind this development is that leaning is a more subtle, more natural way of confiding a secret than flipping a switch to turn the audio channel off.

MAJIC represents a curious mix of virtual or imaginary space and an interest in simulating reality as closely as possible, including providing direct physical feedback whenever possible. In the demonstration video of MAJIC shown at CSCW'94, the participants have a "virtual tea party" in which one person "pours" and real tea comes out into the cup of another. Although this is a presentation gimmick (and the metaphor of sharing tea is highly significant in Japanese culture), one is left wondering where the limits might be.[10]

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[10] In fact, the Matsushita Lab has continued to pursue its research into the blurring of the physical and the virtual. A recent presentation at the 10th annual symposium on User Interface Software and Technology (UIST) in Banff, Alberta (October 14-17, 1997) was entitled "A virtual office environment based on a shared room realizing awareness space and transmitting awareness information."

7. Discussion

Characterizations of Japan as a society in which human relations are all-important, relationships are dependent on positioning people on vertical (hierarchy) and horizontal (in or out-group) axes, and where communication is highly indexical or context-dependent have been widely discussed in the business and sociological literature on Japan (see for example Stewart, 1987, Ito, 1989, and Barnlund, 1989 specifically on interpersonal communication in organizations). The extent of agreement in the literature suggests that they are firmly grounded in reality.

Edward T. Hall (1976), an author cited by CSCW researchers, uses the terms high- or low-context culture to refer to a culture's preferred communication style: the degree to which the meaning of a message can be abstracted from the situation in which it was produced and received. A high-context message is one in which "most of the information is either in the physical context or internalized in the person, while very little is in the coded explicit transmitted part of the message"; a low-context message is one in which "the mass of information is vested in the explicit code" (Hall, 1976: 91). The concept has implications for implicit/explicit, verbal/non-verbal, affective or intuitive/ fact-based, and relational/absolute communication. In a society like Japan where most behavior and the use of language is highly codified, the form is standard. It is important to look beneath the surface to interpret the meaning of an exchange, hence the importance of positioning and the emphasis on atmosphere. Much of the content of a message will be implicit; interpretation will often be based on intuition rather than facts; and relationships will continually shift and be redefined.

Several common traits emerge in Japanese designers' attempts to deal with the particularities of their culture. First, fully conscious of the highly relativistic approach to relationships in their society, designers do not believe that all types of communication can be supported by groupware systems. All readily admit that there are limits to supporting the more subtle or situationally dependent aspects of work. Given the constantly fluctuations and redefinitions involved in any activity which is out of the ordinary, they view the task of trying to support "delicate" communication, such as negotiation, as an impossible one. One researcher points to the impossibility of "catching" pieces of information which fly around an office and are grasped through peripheral awareness. Despite listing a shared workspace as one of the design issues and providing a workstation and table, no one has yet tried to work using MAJIC, even in the laboratory. And the NTT Software Labs team's research shifted in focus from shared workspace to interpersonal interaction during work.

A corollary of not trusting a computer system to model all instances of human communication or to successfully translate the subtleties of day to day

interaction, is the focus of many Japanese CSCW systems on providing channels for communication rather than trying to specify content or process. By providing a variety of channels, nothing more, nothing less, a CSCW system should ideally be able to support all kinds of communication regardless of the message content or objective. This is clearly the case with MAJIC in which research and evaluation have focused exclusively on the physical environment. In TeamWorkStation/Clearboard, too, the focus is on providing an environment which simulates as closely as possible a face-to-face situation and which does not in any way constrain potential use.

Another feature of Japanese CSCW systems is that they are careful to provide support for traditional, paper-based forms of working, and ways of integrating paper and electronic information. Designers view the systems they design as complementary to, not replacements for standard practices; their aim is to *support* groups, not to replace or reconfigure all their activities TWS and Clearboard use video to capture texts or drawings on paper. The MAJIC system integrates a desk that people can work on. These systems also allow people to draw using pen or pen-based computing technology. This is all the more significant considering the transformations involved in converting keyboard input to Japanese ideograms or *kanji*. As one informant notes, "typing is not easy for us."

When language cannot convey all meaning, nonverbal communication becomes more important. Perhaps most significantly, Japanese CSCW systems are also characterized by extensive emphasis on providing contextual cues so that Japanese using these systems will be able to orient their behavior appropriately. This emphasis on the contextual translates into research on spatial awareness, gaze awareness rather than eye contact, gesture, interpersonal distance, physical feedback, and large displays. One informant even went so far as to insist that physical feedback must be integrated into the interface design because he does not believe it is possible for Japanese to have an entirely intellectual relationship with the computer.

Furthermore, considerable attention is paid to creating a pleasurable physical environment or a shared environment, as in TWS or MAJIC, with tones of virtual reality. If a CSCW system is to be useful in Japan, it is important that a sense of atmosphere or feeling transpire through the system. A Japanese psychologist whose research interest is group dynamics tells me that the most important thing in Japanese groups is face-to-face communication, which creates atmosphere, or *kuuki*.[11] This is borne out by use experiments of several CSCW systems which have demonstrated that it is difficult for a group to use them without having first met to establish an atmosphere of mutual trust. "We need to meet once face to face before having such a meeting because without

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[11] Maiya, personal communication 8-6-95. Maiya's interest in groupware is how *kuuki* might be transmitted at a distance.

meeting face to face we don't feel friendly or we don't feel easy to talk. ...And once we have met we can use such kind of machine. But we thought we still need video images to make the participants feel easy or feel friendly."[12]

The cases presented above illustrate the close relationship between designers' preconceptions and frames of reference and the systems they design. Japanese CSCW researchers consistently invoke Japanese culture as a justification for decisions to focus on contextual awareness and non-verbal communication in Japanese CSCW systems. The preferred Japanese approach to CSCW design is to provide a channel for communication, which can be used to complement, or supplement, traditional ways of working. This channel should transmit as much information as possible (hence the widespread use of video and large displays) but should avoid specifying procedures or ways of doing things. It is not a tool, but another element in the working environment that can offer important contextual information to enable coworkers to evaluate a situation and to respond in accordance with existing social protocols.

While certain characteristics of Japanese CSCW systems can be explained with reference to the particularities of their society, it is also significant, in our view, that there is such widespread agreement on what constitutes interesting CSCW research in Japan. Ishii's work on gaze awareness and the use of video have been picked up and pursued by the Japanese CSCW community. Similarly, the importance of gesture, body language and postures in supporting awareness between coworkers, and considerations of interpersonal distance are recurrent themes. Certainly, these issues must strike a chord as designers try to build systems that will correspond to potential uses and eventual contexts of use as they understand them.[13]

8. Implications

Clearly, the frames of meaning of Japanese CSCW researchers have a major impact on their design choices. These choices in turn guide the implementation and eventual use of these systems. Designers create artifacts to fit into cultural spaces as they understand them. New uses and new cultural meanings can only be developed after the fact. It is too early to tell whether or not CSCW designers are justified in their attention to non-verbal, contextual support. Japanese CSCW has been criticized for simply trying to simulate face-to-face reality as closely as possible and for neglecting to exploit some of the transformative potential of computer mediated communication. We would like to suggest that,

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[12] Watabe, personal communication 23-6-95

[13] To some extent, Japanese researchers may also have been focusing on developing a distinctive Japanese style and building a reputation in the international community by choosing to emphasize the commonalities in their work.

rather than abdicating responsibility for the consequences of their designs, Japanese designers have adopted a pragmatic approach: designing for use as they understand it now, and leaving these uses to develop as they will.

The explicit cultural sensitivity of Japanese CSCW work also point to a need for cultural sensitivity in the *design* of technological artifacts, and at a level that goes beyond ergonomics or changing surface details on an interface. In the case of Japan, the need for contextual information suggests that the use of language-based environments, even in Japanese, may be problematic. This difficulty goes far beyond the physical difficulty of inputting on a keyboard (although this is also a definite concern, as reflected in the extensive research on pen-based computing, speech synthesis and multimodal interfaces in Japan). There appears to be a demand for virtual reality interfaces, and initial experiments have demonstrated that VR-based interfaces to applications such as internet relay chat (IRC) are indeed very popular. Secondly, the assumed difficulty of fitting into a framework, or set way of doing things, suggests that organizing cooperative work as a series of procedures to be followed or channels to be taken may be inappropriate in Japan. In fact, this is confirmed by the choice of Japan's leading workflow expert to focus on the use of resources rather than the paths they follow.

We are only beginning to appreciate the complexity of the relationship between technology and its context and how changes in one inevitably affect the other. It is important to remember that technological artifacts are being designed by *someone* and that there is nothing inevitable about how they turn out. Design choices circumscribe a field of potential uses: some are built in, others are proscribed. Consequently, it is essential to consider design in studies of the implementation and use of technology.

9. Conclusion

This paper has outlined how designers' views on Japanese culture find their way into the design rationale for CSCW systems: Japanese CSCW designers generally agree that Japan is unique and that designing for a Japanese context requires particular attention to a certain number of elements. Although it is not the only consideration in design, this attention to culture goes far beyond the stage of ideas to finds expression in the machinic reality of the computer systems, as illustrated by our two examples. The paper further proposes an explanation, grounded in the notion of cultural frame, for these observations. This explanation focuses on the interaction between the specific situation in which design is taking place, its larger social, cultural and institutional context, and the unique actions of designers. Based on how they understand the world

around them, designers make assumptions that guide their design choices.[14] As participants in their larger professional, organizational and national cultures, individual designers link their creations with larger social or cultural values. They actualize their shared understandings of Japanese culture as they perform it in their daily design activities.

Acknowledgements

References

Ackoff, R.: 1981, *Creating the Corporate Future*, Wiley, New York.

Andrews, S. B. and Milller, H. G.: 1987, Expanding market share: The role of American corporations in technical assistance, *International Journal of Manpower,* **6**, 25-27.

Bannon, L. and Schmidt, K.: 1991, CSCW: Four characters in search of a context, *in* Bowers, J. and Benford, S. (eds), *Studies in Computer Supported Cooperative Work*, North-Holland, Amsterdam, pp. 3-16.

Bansler, J.: 1989, Systems Development in Scandinavia: three theoretical schools, *Office, Technology and People,* **4***,* 117-133.

Bijker, W. E., Hughes, T. P., and Pinch, T. J. (eds): 1987*, The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, MIT Press, Cambridge, MA.

Bijker, W. E., and Law, J. (eds): 1992*, Shaping Technology/Building Society: Studies in Sociotechnical Change*, MIT Press, Cambridge, MA.

Bourdieu, P.: 1983, *Le métier de sociologue: préalables épistémologiques*, 4th edition, Mouton, Berlin.

Brown, J. S., and Duguid, P.: 1991, Organizational learning and communities of practice: Toward a unified view of working, learning and innovation, *Organizational Science*, **2**(1), 40-57.

Brown, J. S., and Duguid, P.: 1994, Borderline issues: Social and material aspects of design, *Human Computer Interaction*, **9**(1), 3-36.

Carlson, W. B.: (1992). Artifacts and frames of meaning: The cultural construction of motion pictures. *in* W. Bijker and J. Law (eds*), Shaping Technology, Building Society*, MIT Press, Cambridge, MA, pp. 175-198.

Collins, H., and Pinch, T.: 1982*, Frames of Meaning: The Social Construction of Extraordinary Science*, Routledge and Kegan Paul, Boston.

Dahlbom, B. and Mathiasson, L: 1993*, Computers in Context: The Philosophy and Practice of Systems Design*, NCC Balckwell, Oxford.

Deans, C. P. and Ricks, D.A.: 1991, MIS Research: A model for incorporating the international dimension, *Journal of High Technology Management Review*, **2** (1), 57-81.

DeLaet, C.: 1992, *Des Outils pour un développement durable: plaidoyer pour une réconfiguration*, Unpublished PhD dissertation, Montréal: Université de Montréal.

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[14] Design choices are, of course, subject to constraint and enablement by situational variables which are actualized in a chain of events in the design process. How these come about would be the subject of another paper.

Erez, M., and Earley, P. C.: 1993, *Culture, Self-Identity, and Work*, Oxford University Press, New York.

Flichy, P.: 1995, *L'innovation technique*, La Découverte, Paris.

Gärtner, J. and Wagner, I.: 1994, Systems as intermediaries: Political frameworks of design and participation, *Proceedings of the Participatory Design Conference 1994,* CPSR, Palo Alto, CA, pp. 37-46.

Grudin, J.: 1991a, Interactive systems: Bridging the gaps between developers and users, *Computer*, **24**(4), 59-69.

Grudin, J.: 1991b, Obstacles to user involvement in software product development, with implications for CSCW, *International Journal of Man-Machine Studies*, **34** (3), 435-452.

Hakken, D.: 1994, *Cultural Constructions of Computing: Lessons for the Nordic Computing Project*, SUNY Institute of Information Policy, Ithaca, NY.

Hales, M.: 1994, Where are designers? Styles of design practice, objects of design and views of users in computer supported cooperative work, *in* D. Rosenberg and C. Hutchison (eds), *Design Issues in CSCW*, Springer Verlag, London, pp. 151-177.

Hall, E. T.: 1976, *Beyond Culture*, Doubleday, Garden City, N.J.

Hannerz, U.: 1992, *Cultural Complexity*, Columbia University Press, New York.

Heaton, L.: 1997, *Culture in Design: The Case of Computer Supported Cooperative Work*, Unpublished PhD Dissertation, Université de Montréal, Montreal.

Hofstede, G.: 1980,. *Culture's Consequences: International Differences in Work-Related Values* Sage, Beverly Hills, CA.

Ishii, H.: 1990, TeamWorkStation: Towards a seamless shared workspace, *Proceedings of CSCW'90*, ACM, New York, pp. 13-26.

Ishii, H., and Arita, K.: 1991, ClearFace: Translucent multiuser interface for TeamWorkStation, *in* L. Bannon, M. Robinson and K. Schmidt (eds), *ECSCW '91 Proceedings,* Kluwer, Amsterdam, pp. 163-174.

Ishii, H., and Kobayashi, M.: 1992, ClearBoard: A seamless medium for shared drawing and conversation with eye contact, *Proceedings CHI'92*, ACM, New York, pp. 525-532.

Ishii, H., Kobayashi, M., and Grudin, J.: 1993, Integration of interpersonal space and shared workspace: Clearboard design and experiments*, ACM Transactions on Information Systems (TOIS),* **11**(4), 349-375.

Ishii, H., and Miyake, N.: 1991, Toward an open shared workspace: Computer video fusion approach of TeamWorkStation*, Communications of the ACM*, **34**(12), 37-50.

Ito, S.: 1986,. Modifying imported technology by local engineers: Hypothesis and case study of India, *Developing Economies*, **24**, 334-348.

Jackson, M. H.: 1996, The meaning of "Communication Technology": The technology-context scheme, *in* Burleson, B. R. (ed), *Communication Yearbook 19*, Sage, Thousand Oaks, CA.

Law, J., and Bijker, W.: 1992, Postscript: Technology, stability and social theory, *in* W. Bijker and J. Law (eds), *Shaping Technology, Building Society*, MIT Press, Cambridge, MA, pp. 290-30.

Mackenzie, D. and Wacjman, J.: 1985*, The Social Shaping of Technology: How the Refrigerator Got its Hum*, Open University, Milton Keynes.

Madu, C.: 1992*, Strategic Planning in Technology Transfer to Less Developed Countries,* Quorum, New York.

Mouer, R., and Sugimoto, Y.: 1986*, Images of Japanese Society: A Study in the Social Construction of Reality*, KPI Ltd., London.

Okada, K., Maeda, F., Ichikawa, Y., and Matsushita, Y.: 1994, Multiparty videoconferencing at virtual social distance: MAJIC design, *Proceedings of CSCW'94*, ACM, New York, pp. 385-394.

Orlikowski, W. J.: 1992, Learning from notes: Organizational issues in groupware implementation, *Proceedings of CSCW'92*, ACM, New York, pp. 362-369.

Orlikowski, W. J., and Gash, D. C.: 1994, Technological frames: Making sense of information technology in organization*s, ACM Transactions on Information Systems*, **12**(2), 174-207.

Poole, M. S. and DeSanctis, G.: 1990, Understanding the use of group decision support systems: the theory of adaptive structuration, *in* C.W. Steinfeld and J. Fulk (Eds), *Organizations and Communication Technology*, Sage, Newbury Park, pp. 173-193.

Raman, K.S. and Watson, R. T.: 1994, National culture, IS, and organizational implications *in* C. P. Deans and K. R. Karwan (eds*), Global Information Systems and Technology: Focus on the Organization and its Functional Area*, Idea Group, Harrisburg, PA, pp. 493-513.

Rogers, E. M. and Shoemaker, F.: 1971*, Communication of Innovation: A Cross-Cultural Approach*, Free Press, New York.

Star, S. L., and Griesemer, J. R.: 1989, Institutional ecology, "translations" and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39, *Social Studies of Science*, **19**, 387-420.

Stewart, E. C. 1987, The Japanese culture of organizational communication, *in* L. Thayer (Ed.*), Organization - Communications: Emerging Perspectives II*, Ablex, Norwood, NJ, pp. 136-182.

Watson, R. T. and Brancheau, J.C.: 1991, Key issues in information systems management: An international perspective, *Information and Management*, **20**(3), 213-223.

Wenger, E.: 1994, *Communities of Practice*, Cambridge University Press, New York.

Winner, L.: 1993, Upon opening the black box and finding it empty: Social constructivism and the philosophy of technology, *Science, Technology, and Human Values*, **18**(3), 362-378.

GLOBAL CULTURE, LOCAL CULTURES, AND THE INTERNET

The Thai Example

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Abstract. This paper addresses the questions of whether, and if so, how
and to what extent the Internet brings about homogenization of the local
cultures in the world. It examines a particular case, that of Thai culture,
through an investigation and interpretation of a Usenet newsgroup,
soc.culture.thai. Two threads of discussion in the newsgroup are selected.
One deals with criticisms of the Thai government and political leaders,
and the other focuses on whether Thai language should be a medium, or
perhaps the only medium, of communication in the newsgroup. It is found
that, instead of erasing local cultural boundaries, creating a worldwide
monolithic culture, the Internet reduplicates the existing cultural
boundaries. What the Internet does, on the contrary, is to create an um-
brella cosmopolitan culture which is necessary for communication among
people from disparate cultures. That culture, however, is devoid of "thick"
backgrounds, in Michael Walzer's sense.

1. Introduction

The growth of the Internet is a worldwide phenomenon. From a relatively
obscure academic tool, the Internet has become a household fixture and
nowadays it is hard to find anyone without an e-mail address or a personal
home page. Cyberatlas (http://www.cyberatlas.com/geographics.html) reports
by pinging 1% of all the Internet hosts that in January 1996 there were
9,472,000 distinct hosts, and 16,146,000 in January 1997, an increase of 170%.
As more and more people are becoming wired, the Internet itself is fast
becoming as pervasive as televisions and radios. However, its ability to generate
many-to-many communication sets it apart from these traditional mass media.
This gives the Internet a strong potential in forming communities, and where
there are communities, there are cultures unique to each community. The
potential of the Internet in forming "virtual" communities incurs a number of

problems, chief among which is the relation between the community formed by the Internet itself and the existing communities bound by locality and cultural tradition.

The Internet at the moment is still predominantly American, but it is increasingly global, with more and more countries adding more and more host machines, expanding the network at a breathtaking speed. Network Wizard (http://www.nw.com/) reports that the growth of Internet hosts in 1994 was 15% in Asia alone, and in Thailand the growth rate was as much as 53%. This expansion has created a problem of how local cultures adapt themselves to this novelty. As a quintessentially Western product, there is clearly bound to be a contrast, if not necessarily a conflict, between non-Western cultures and the Internet technologies. How, in particular, do local cultures take to the Internet and other forms of computer-mediated communication such as the Bulletin Board System (BBS)? Does the Internet represent an all unifying force, turning all cultures within its domain into one giant superculture where everything becomes the same? Does the idea of the Internet and other forms of computer-mediated communication carry with it cultural baggage of the West, such as democracy and individualism?

This paper attempts to provide some tentative answers to these vexing questions. It presents a case study of one local culture, that of Thailand, in computer-mediated communication. More specifically, it presents a case study of the Usenet newsgroup on Thailand and its culture, soc.culture.thai, in order to find out whether and, if so, how Thai cultural presuppositions affect the received underlying ideas of the CMC technologies. Then we shall see how these answers provide an insight into the theoretical problem of the extent to which global computer-mediated communication could be regarded as a means to realization of such Western ideals as liberalism, individualism, respect of human rights and democracy.

I would like to argue in this paper that Thai cultural attitudes do affect computer-mediated communication in a meaningful way. This means the idea that the Internet would automatically bring about social change in line with developments in the West needs to be critically examined. It appears from the study that important presuppositions of local cultures are very much alive, and exist alongside the imported Western ideas. Which type of cultural attitudes and presuppositions is present is more a matter of pragmatic concern, such as whether the participants in CMC happen to find any use for a set of ideas, than that of truth or falsity of the ideas in questions.

2. Internet in Thailand

Kanchit Malaivongs reports (http://203.148.255.222/cpi/it4.htm) that Internet connection in Thailand first took shape in 1988 when an e-mail only dial up

account was set up between Prince of Songkhla University in southern Thailand and the Australian Academic and Research Network (AARNET) through the help of the Australian government. A few years later Chulalongkorn University set up the first permanent leased line connection in July 1992, providing services to faculty and students of the university as well as those of some other participating universities. The cost of connection was shared among the universities, and faculties and students enjoyed free access. Another permanent connection to the Internet backbone was set up by the National Electronics and Computer Technology Center (NECTEC), a government agency responsible for computer and information technology issues, and more academic organizations joined in. Soon afterwards the government decided to open up access to the general public and dozens of commercial Internet Service Providers (ISP's) sprang up. Today it is estimated that around 131,000 Thais are enjoying access to the Internet (*Phuu Jad Kaan Raai Wan* 1997: 30).

3. soc.culture.thai -- Wild Frontier of Things Thai

For the majority of Thai net surfers, soc.culture.thai (SCT) is by far the most popular Usenet newsgroup. It is perhaps *the* place in cyberspace for discussion on all sorts of aspects on Thailand, and it deals with all aspects of Thai society and culture. Thais form the majority of the nationalities of discussants in the group.[1] The newsgroup derives is tremendous popularity among Thais and Thai watchers from its free wheeling threads of discussion in a culture where some topics may not be discussed publicly. Furthermore, the group also serves as a place where struggles for political freedom take place, a phenomenon also reported by Andreas Harsono (1997) in case of Indonesia. During the May 1992 incident, when soldiers opened fire to the Thai people fighting for constitutional reform, the newsgroup was one of the means of struggle. The whole world was kept informed of what actually happened, and many Thais who were locked out of reliable information due to government blackout of the national media relied on it to learn what was happening outside their homes. Nowadays, when the political climate is much freer, the newsgroup still remains politically active. Members of the newsgroup cherish the freedom to openly discuss forbidden topics with fellow members. Such topics include the personal characters of the members of the royal family, and criticisms, or in many cases, invectives against the politicians.

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[1] According to the soc.culture.thai General FAQ (available online at *ftp://rtfm.mit.edu/pub/usenet/ soc.culture.thai),* a survey in 1994 shows that soc.culture.thai has an estimated readers of 39,000 worldwide; 66% of all USENET sites carry this newsgroup; and total monthly traffic is 2035 messages or 4.4 MB. Thais form the majority of those who read and post in the newsgroup, comprising 64% of the total.

Since Thais can apparently talk and discuss freely on the Internet without fears of reprisal from the authorities, it is understandable that they would want the same amount of freedom outside of the newsgroup too. What is emerging from many discussion threads in the group is that the participants want to see a new Thailand which is more open and more in tune with the world community—a country that is less bound to the past while still retaining its own cultural identity. An example can be seen from a particular thread on "The king said new constitution is acceptable." The thread started from an important event in recent Thai history, when the King signed the new constitution into law. Discussion then ensued in SCT concerning the new constitution. Naturally the discussants hoped that the new constitution would bring a new era in Thai politics, an era when the old dirty, vote buying, voters bullying, raw power politics would be over. There were some disagreements, however. One point in the new constitution, which is rather controversial, concerns the qualifications of those who are to enter politics. Candidates for parliamentary election are now required to possess a minimum of a bachelor's degree. The rationale of the Constitution Drafting Assembly, the organization responsible for drafting the new charter, was clearly to react against the current situation where many powerful MP's and hence cabinet members do not have the necessary knowledge and skills for running the country. As a result, they often act as if they represent their constituencies only and do not have a broader look at the country as a whole.

However, a significant number of SCT members voiced their disagreement with the clause. A member, Prapasri Rajatapiti, writes:

> That the one issue I have been strongly opposing for the new constitution. I for one believe these articles to be very discriminatory. I believe that as long as one can read and write, one can serve as an MP. Education is only compulsary up to grade 6. How can we tell these people who did not have the chance to go to school, and was told that it was OK then (since it is not compulsary), that now they won't have a chance to be MP or senator unless they go back to school. Formal education is only 1 form of education, not all.[2]

As usual for threads of discussion, Prapasri's argument did not go unopposed. Another contributor, giving only his personal name Tirachart, raised exactly the same point as the CDA on the ability of undereducated politicians to run the country:

> Hello;
>
> It's about time to change or else Mr. Cow and Mr. Kwai will be minister of something. Does it make you happy to see the government's way of serve the

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[2]Prapasri Rajatapiti, post to soc.culture.thai, message-ID: <19971010230101.TAA17707@ladder02.news.aol.com>, October 10, 1997.

people nowaday? How much longer those jerk will be still incharge the of goverment?[3]

'Cow' is English, and 'Kwai' is a Thai word meaning 'water buffalo.' In Thai language, to call people a cow or a buffalo means they are stupid. This kind of venting of emotion is common in SCT. Here one can find that flaming the government and politicians is among the most favorite actions. The more virulent the attack, the higher 'status' the attacker seems to possess in the group. Tirachart's post here is also interesting in that it presupposes some cultural background in order to understand it fully. Without the knowledge that Thais perceive bovines to be very stupid, non-Thais have to rely on contexts to guess the meaning, but sometimes this is quite difficult.

In fact, comparing the politicians with animals is rather common. Commenting on an earlier post by Sanpawat Kantabutra, one calling himself "Aitui" writes:

> On 17 Oct 1997 01:18:35 GMT, sanpawat@c4.cs.tufts.edu (Sanpawat Kantabutra) wrote:
>
> >I believe so. It will take about 25-30 years for younger generation
> >like us will be in major positions in the government and other state
> >organizations. I think the new generation is better than the old one
> >in terms of ... Well, almost everything. Khun Anand also said that it
> >is the time for younger generations to run Thailand. 25-30 years are
> >worth-while.
> >
>
> We dun need 25-30 years...just kill those fucking heas then we will have a much better tomorrow ![4]

This is more of an expression of anger than a deliberation. However, the rationale behind it is clear. Sanpawat comments that the next generations of Thais would be more qualified and more responsible than the present one, presumably due to better education and more openness. 'Hea' means 'monitor lizard,' a much lower ranking animal in the Thai cosmos than bovines. While bovines are merely stupid, monitor lizards are treacherous and evil. Bovines are viewed by Thais as beneficial, as they help them with tilling the fields. Many Thais feel a certain sense of gratitude to them. Monitor lizards, on the other hand, are always keen to steal the farmers' chickens and ducks. The word 'hea' is in Thai a strong invective used to describe those who are bad and depraved.

By mixing Thai words in the more or less English posts in SCT, the contributors do not as much aim at being fully understood by the global community than at talking and sharing feelings within his rather close knit

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[3] Tirachart, post to soc.culture.thai, message-ID: <61mk27$6s5$1@excalibur.flash.net>, October 10, 1997.

[4] Aitui, post to soc.culture.thai, message-ID: <34474ee0.8970100@news>, October 17, 1997.

community. Here those who don't happen to understand these words and the presupposed background knowledge necessary for grasping the whole meaning, would feel left out. Thus, SCT takes on a double function. On the one hand, it acts as a channel of disseminating information about Thailand and its people, as stated in its charter. On the other, it serves as a means by which Thai people and non-Thais who are "in the know" strengthen their shared feelings and knowledge. It is as if the newsgroup is a coffeehouse where people who know one another very well come to discuss things in which they are interested. They don't quite care whether outsiders would be able to follow what is going on. That is not the point of the communication. Such a communication as happening here has its essential function within a community. It is the place where members of the community come to share views, thoughts and feelings, thus making the community itself possible.

This view of communication as the means of strengthening community ties is called by James Carey the 'ritual' view. In *Communication as Culture* (1989: 18-23) Carey states that there are two views on communication, namely the 'transmission' and the 'ritual' views. The former view communication as a one way traffic, where information, injunctions, news, and the like is 'transmitted' from the source of power to remote posts. One purpose of such transmission is to create political unity and to assert the power of the political center to areas within its jurisdiction. The ritual view, on the other hand, views communication, not primarily as a means of transmitting information, but as an integral part of community activity, which members of a community perform in order to reaffirm the identity of the community itself,.

The invectives against the Thai political leaders in the SCT are parts of government bashing occurring after the great flowering of media freedom following the Black May Incident of 1992.[5] Released from the fear of criticizing the authorities, Thais began to view the government not as somebody from far above, but as one of their own. Once they feel that criticizing the government incurs no real threat to their safety and freedom, Thais are enjoying this freedom a lot, and sometimes it may seem that the criticisms serve merely to release pent up emotions and frustrations rather than to offer constructive viewpoints toward solving the country's problems. What is rather surprising in this phenomenon is that, not only highly educated, middle class Thais are joining in this bashing frenzy, but the poor farmers in the countryside are joining the fray too. Traditionally these poor farmers, who form the majority bulk of the Thai population, have a very high respect and awe for their rulers, including political

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[5] Anek Laothammatas (1993) argues that the urban middle class were the key players in the demonstration, making it different from the previous ones which had been led by student activists. He points out that the middle class would like to see a transparent government which is free from corrupted practices and a more modern, more open political system. This wish of the middle class is clearly reflected in the tones of most discussions on Thailand on the Internet.

leaders and bureaucrats. But they are beginning to feel, in the more democratic and liberal climate, that the leaders are merely humans, and most importantly that they do have real power and leverage against them. Since these leaders do come to power only through their votes, the villagers are getting more involved in politics; they are trying to wrench power to take care of their own affairs from the bureaucrats. A new community is emerging that is bound by the sense of independence and increasing responsibility in dealing with one's own affairs.[6]

Another thread in the newsgroup from which we can see cultural implications concerns the use of language in postings. Kritchai Quanchairat, a regular contributor to the newsgroup, is a Thai computer scientist specializing in localizing certain Internet softwares. He is known for his campaign for more postings in Thai language. Naturally his campaign provoked a fair number of replies. In a post replying to Kritchai's, "Conrad" writes:

> In article <199709122354.SAA27681@phil.digitaladvantage.net>, kritchai
>
> Quanchairut <kritchai@usa.net> writes
> >[You may use Thai or English as you prefer on SCT/TMG]
> >
> >I linked posts from TMG to Soc.culture.thai.
> >I beleive posts in Thai will help most of soc.culture.thai
> >readers (who are the majority behind the scence in Thailand)
> >to be able to ACTUALLY MAKE USE OF THE INTERNET.
> >
> >Most Thais could not read English very well if not at all.
> >These will most benefit those K12 kids who are getting on-line
> >via SchoolNet projects. It's not too late to help the kids
> >to get on-line today. Some of us may need to be a little
> >patience about this. Let's think of it as "FOR THE KIDS".
> >
> >If you don't know how frustrating it is for not being able
> >to read/understand posts in their own groups, check German
> >or French groups.
> >
> >It's time and your open-mindedness counts!!
> >
> >Krit
> >...

---

[6] However, since the middle class have the economic and cultural power, their voices in the affairs of the country is very loud indeed, and cannot be fairly compared to that of the villagers. Moreover, since the number of Thai people connected to the Internet are currently very limited, and the fees for a connection is far from affordable, members of the Thai Internet community consist solely of the middle class. For them the Internet has become an important tool by which they create and maintain a community. One aspect of this community is that the members agree that old style politics needs to change, and that Thailand needs to open herself up more and become more an open, liberalized society.

>

I was under the impression that this n/g was created to discuss and disseminate aspects of the Thai culture, social and political scene. The vast majority of people using this n/g do not read/write Thai so posts in Thai will restrict the original purpose. By all means set up a Thai language n/g. It is a fact that the common language of the internet is English, being either the first or second language of the majority of users. Surely it is a desirable aim that the information on the internet should be accessible to the widest possible audience.

To progress academically, socially and economically in Thailand one MUST be competent in the English language. What better incentive could there be for kids who wish to join the on-line community?[7]

Kritchai's attempt to persuade SCT members to use Thai in their posts amounts to nothing less than changing the whole face of the group. However, he has a point. The level of English understanding in the country is generally poor, and the language is not in widespread use at all. Proficient users of the language are few compared to the whole population. Thus, Kritchai apparently believes that if Thai is used more in SCT, more Thais would be persuaded to join and the ensuing discussions would be good for them.

Another reason in favor of using Thai in SCT concerns power relation among different language speakers, as implicitly stated in Kritchai's post. Thais sometimes feel it unfair that they have to communicate in a foreign language instead of their own; they often feel inferior to native English speakers just because their English is not so good as enabling them to talk as fast or to argue as effectively as the natives. Using Thai in this context amounts to an empowering of non-English speakers so they feel confident enough and less self conscious enough to participate actively in the newsgroup. Since English has never gained a foothold in the country except as a *foreign* language, many Thais feel resistant to the idea of having to talk in English on matters about themselves and their culture. They don't feel that SCT is a forum *about* Thailand and its culture, but they appear to feel that it is also *for* Thais and sometimes Thais only. In a tight, close knit culture as the Thai one, such feelings are not uncommon.

4. Internet as Globalizing Agent?

Let us return to our original questions. Does the Internet succeed in turning all cultures of the world into one monolithic culture where all the important beliefs and background assumptions are the same? In one sense, it would appear so.

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[7] Conrad, post to soc.culture.thai, message ID:
<3pH6RKAMWmG0Ew8t@ceebees.demon.co.uk>, September 13, 1997.

When participants of widely disparate cultures come to interact, what happens is that there emerge a kind of culture which is devoid of historical backgrounds that give each local culture its separate identity; it is, for example, the culture of international conferences. The newly emerging culture is comparable to piped music one hears in airports or in modern supermarkets; that is, it is shorn of its value, its role in a people's scheme of things. It plays no part in the ritual of a traditional culture. In short, it has become sanitized and modernized. Let us call this kind of culture the 'cosmopolitan' one. One aspect of the Internet clearly points to that kind of culture. When people from all parts of the globe communicate with one another, it is difficult enough when they face each other to observe all the non verbal cues. (Those cues might be interpreted differently.) But since the Internet communication happens almost exclusively through texts, the task becomes much more difficult. Communication requires that participants share at least some sets of values and assumptions together. They have to accept that what others say are largely true, as Donald Davidson (1984: 200-01) argues. Thus when texts become the only means of communication, building a virtual community, this shared set of assumptions and values already exists. These values, however, do not belong to any local, traditional culture, but are whatever that make global computer-mediated communication possible.

It is well known that the shared set of values and assumptions prevalent on the Internet resembles that of liberalism and egalitarianism typical of modern Western liberal culture. The origin of the Internet as a repository for exchanges of discussion and information by computer scientists and other scholars point to the fact that the Internet bears the stamp of the culture of this group. Its birthplace in the United States explains why these assumptions and values are so well embedded. Nonetheless, the potential of the Internet as the global forum of international communication makes it almost necessary that this shared set of values and assumptions is held by the participants. The set is an outcome of an international, cosmopolitan culture where participants share little in common in terms of historical backgrounds. In order to make communication possible among those who come from disparate historical, traditional backgrounds, the values and assumptions germane to a particular local culture cannot do the job. What happens is that the participants either talk about their professional matters, the topic of international conferences, or they talk about superficial stuffs that guarantee to be shared already, like the weather. The Internet does not have to originate in the United States for it to acquire the cultural traits it already has. It could have come from Japan, but when it is truly globalized it has no choice but to be what it is now. It is in this sense, then, that the Internet could be regarded as a globalizing agent.

This shared set of values and assumptions typical of the Internet becomes apparent when it spreads its roots to states where the ideas of liberalism, egalitarianism, and democracy face violent resistance from the political

authorities. The newsgroup soc.culture.burma, for example, is used by Burmese dissidents living abroad to spread information which would not be known otherwise. It is no surprise that the Burmese government even requires its citizens to ask for official permission to own a modem. Failure to do so can make one a political prisoner. That is what happens when governments actively attempt to stop the wishes of its people, and it shows how potent the Internet can be as a political force.[8] It also shows that, if we take the ideas of democracy and respect for human rights as universal, then the Internet could be seen as a harbinger of these ideals to the areas where the ideals are not appreciated by the authorities.

This aspect of the Internet as a harbinger of the liberal ideals could be taken to substantiate the claim that the Internet represents a global force spreading Western values to the world, as if it were the destiny of the world to subscribe fully to Western ideals. However, I think a distinction should have to be made between Western culture and cosmopolitan culture. Western culture is a product of more than two thousand years of continuously evolving civilization. It has its own traditions, customs, belief systems, religions, which put it on a par with the world's other great civilizations, such as Indian or Chinese. Cosmopolitan culture, on the other hand, is borne out of the need for people from different cultures to communicate or to do other things with one another. Thus it is by nature shorn of any resources that could be drawn from centuries of experiences. What is happening with the Internet is perhaps not a spread of the former, but the latter. But that is hardly surprising. It is true that cosmopolitan culture originated first in the West, because the need for finding common ground among people of disparate beliefs was first felt there; that, however, does not mean that the two cultures are one and the same.

Thus, when the Internet is used as a political tool, it does not necessarily mean that it acts as a Westernizing force. The majority of SCT contributors who criticize the Thai government are Thais, and here the newsgroup could have been a traditional Thai coffeehouse where people gather and talk and discuss politics. The participants in the newsgroup do not become less Thai when they surf in cyberspace. Instead as they become more active in the affairs of their country, they show that they are more attached to their locales. Moreover, as the Thai participants can use, and have indeed used, the Internet to spread information on various aspects of the traditional culture, such as traditional

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[8] The relation between Internet and democracy appears to be parochial. It depends on the situations where a particular communication/community takes place. For Thailand, the fight is for more open, more transparent and efficient government. For the US, the situation might be as described in Mark Poster in "Cyberdemocracy: Internet and the Public Sphere" (1997: 201-217). That is, Poster calls for a kind of 'postmodern' or more participatory democracy, which is less encumbered by the traditional forms of American government. This seems to show that the Internet is more a tool for those who need it than a homogenizing force, making every culture the same.

recipes and digitized traditional music and paintings, the Internet can even be a tool for cultural preservation and propagation. In this sense it does not globalize, but localize, making people more attuned to their own cultural heritage. Nonetheless, as an embodiment of cosmopolitan culture, it is clear that the Internet globalizes in this way—as a means by which global communication and community building, if only "thinly" in Michael Walzer's (1994) sense, becomes possible.

According to Walzer, moral arguments are "thin" when they are shorn of their particular histories and other cultural embodiments which make them integral parts of a cultural entity. These are the parts that make the arguments "thick." To use Walzer's own example, when Americans watched Czechs carry placards bearing words like 'Truth' and 'Justice,' they could relate immediately to the situation and sympathized with the marchers. However, when the arguments are at the local level, as to which version of distributive justice should be in place, there might well be disagreements, and Americans may find themselves disagreeing with the particular conception of justice which is eventually adopted. The sympathetic feeling one feels across the Ocean is part of the "thin" morality, but the localized and contextualized working of those moral concepts is part of the "thick" (Walzer 1994: 1-19).

The thread of discussion in SCT concerning the language to be used in the forum illustrates the tension between local and global cultures, or thick and thin conceptions, very well. As usually happens in international conferences, talking only about the weather to those with whom one does not share much is rather boring. Many non-Thai Internet surfers do not know much about Thailand and the variously subtle nuances of her culture; thus their contributions are generally limited to asking for information, and when they venture to provide information or ideas of their own, they often reveal that they are quite ignorant of the deeply rooted culture. In order to communicate with non-Thais on topics related to Thai culture, Thais have to supply an adequate amount of background information in order to make themselves understood. It is much easier for them just to talk to fellow Thais who already share such background knowledge. This way they can mix Thai words in the posts, refer to 'kwais' or 'heas,' or allude to characters in the classical literature without fear of not being understood. Consequently, participants in international gatherings sometimes drift off to form their own smaller groups, banding with those to whom they share background knowledge. The situation also happens on the Internet. The founding charter of SCT states that the newsgroup is created in order to exchange information and viewpoints *about* Thailand and its culture, and that English is to be the only medium of communication.[9] But since most Thais do not use English very well, the campaign to post in Thai language is

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[9] Soc.culture.thai general FAQ, available online at *ftp://rtfm.mit.edu/pub/usenet/soc.culture.thai.*

understandable. There also has been an attempt to amend the SCT charter to make it officially recognized to post in Thai. The implication this debate has for the question whether the Internet is a globalizing force is clear.

The ongoing debate in SCT on what language is to be used, together with the *de facto* existence of a significant portion of SCT posts which are entirely in the Thai language, provide an evidence that, instead of looking at the Internet as a sign of the world becoming culturally monolithic, we may have to look at it just as a global forum where participants join one another so long as there is a felt need for it. And when they feel more comfortable talking to someone back home, so to speak, they don't feel any qualms in forming smaller groups within the big gathering, where they can forget the learned *lingua franca* and enjoy talking in the vernacular. To assume that the Internet would bring about a culturally monolithic world would mean that it would bring about a set of shared assumptions and values, including respect for human rights, individualism, egalitarianism, in other words the ideas of contemporary liberal democratic culture. But since it is conceivable that those liberal ideals could exist within cultures other than those of the West, to claim that the Internet would bring about the same "thick" culture in Walzer's sense would seem to be mistaken. If the set of ideals is viewed instead as a part of the cosmopolitan culture, then it appears that the set will be adopted by a local culture if it feels that it wants or needs to be a part of the global community. And if they don't feel the need, then they will just turn their back on it, in effect telling the world that they don't care to join. Very often in those cases the wish of the populace runs counter to that of the political leaders; political oppression and prohibition of freedom of expression result.

If the culture believed to be "exported" by the Internet is viewed as a cosmopolitan one, and not the traditional Western culture, then we are in a good position to assess the claim that the Internet is a homogenizing cultural force. Since cosmopolitan culture is neutral on most respects, the claim that the Internet will bring it about is rather trivial. On the other hand, if traditional, or Walzer's "thick," culture is at issue, then it seems the Internet fails to provide such a culture. But now the crucial question is: To which culture do the salient aspects of modern liberal culture, namely respect for human rights, democracy, egalitarianism, belong? Do they belong to the traditional Western culture, putting them on a par with Christianity, the Gothic cathedrals, Bach's chorales, Michelangelo's paintings, Franz Kafka's stories, in short with the aspects that give Western civilization its uniqueness? Or do they belong to secular, cosmopolitan culture, the culture arising out of the need of people from various cultures to get in touch with one another? To answer this question deeply enough and satisfactorily enough would itself require at least another paper. But at least a glimpse of the way toward an answer can here be given. We have seen from the examination above of what happens in SCT that it is certainly possible

for Thais to fight for democracy and human rights, while retaining their distinct cultural identities. The invectives against the government are just some indications of the concerns of the Thai people on their government and their own country; behind an invective lies a vision of how the country should be governed, a vision that does not include the current political leaders. On the other hand, the debate on the language to be used in the newsgroup shows that Thais are conscious of their identities and the need to form their own smaller communities within the globalized cyberspace. That the threads happen together in the same newsgroup show that Thais do not view the struggle for more openness, more efficient government, more participatory democracy and so on as something separated or incompatible from the desire to assert their cultural identity. There is no necessary conflict between these two spheres of culture, in the same way as there is no necessary conflict between Bach's chorales and the Gothic buildings on the one hand, and the democratic, libertarian, and egalitarian ideals on the other.

5. Conclusion

Thai attitudes toward the CMC technologies, especially the Internet, seem to show that the technologies only serve as a means that makes communication possible, communication which would take place anyway in some other form if not on the Internet. Most Thais welcome the new technologies, thinking that they enable them to surge forward with the world. However, this is a far cry from claiming that the Internet would bring about a culturally monolithic world where everybody shares the same "thick" backgrounds and values. What is there in the SCT newsgroup is that Thai people and non-Thais who want to join talk about matters that are interesting to them, be they politics, or culture, or whatever. Here the newsgroup act more like the traditional Thai coffeehouse where public matters, especially local and national politics, dominate the discussion. As the Internet is really a form of the media, and in Thailand it has been heavily promoted that way, it is an open to the world at large, where, to paraphrase Marshall MacLuhan, one can extend one's senses far from what is normally possible. One can perceive what is going on in far corners of the world in an instant, and especially in the case of the Internet, one can feel as though one is bodily transported to the remote regions one is interacting with.

What comes naturally from such a scenario is that there are bound to be comparisons from what one perceives in the far corners and in the local areas around oneself. When one sees in the far corners what one believes to be good for one's own locality, it is natural to suppose that there are going to be changes in the latter. Richard Rorty argues that the process is what actually lies behind the universalist rhetoric claiming for a common morality and social norms for

all mankind. This process of changes in one's locality as a result of one's perception of other regions, according to Rorty, should not be taken to imply that there is a universal ethics at work. Rorty's naturalism would make such an ethics redundant. What is really the case is that some people just want to live like others. Thus instead of a universal consciousness that this is the right way to live, Rorty claims that there is "solidarity" for mankind (1989, 1991). Hence, when a Thai Internet surfer sees what is going on in another region of the globe which she sees should be good for her own country, be it the strict enforcement of the law, open democracy, human rights and so on, the feelings are those of wanting to be a part of the community that she finds acceptable. Deciding freely on her own, there is then no need that her own cultural identity needs to change. She can remain Thai while embracing all these political and social ideals. That is to say, she can enjoy Thai food and Thai music while struggling for a more open democracy in Thailand at the same time.

Thus the Internet and local cultures both determine each other. While the Internet is a window to the world where influences can be received, the content of the Internet is obviously determined by whatever posted or uploaded to interconnected computers. The information available shows that cultural groups are as separated from one another as they are in the outside world. The cultural fault lines, so to speak, stay roughly the same. An outsider would feel as much lost in the cyberspace of SCT as they could be when dropped in the midst of a Thai town. According to Carey's ritual view of communication, communication is part of the rituals of a culture that give it its uniqueness, its being. Hence communication in SCT could be seen as part of the rituals that make up the Thai identity. The identity, however, is not something static, but is constantly evolving so as to respond effectively to outside changes. Thus there is no contradiction in saying that the Thai identity, for example, evolves in such a way that the Thai people accepts ideals such as human rights, democracy, and the like as their own, as integral parts of their culture. Cyberspace mirrors real space, and vice versa.

Acknowledgements

References

Anek L: 1993, *Mob Mue Thue: Chon Chan Klaang Lae Nak Thurakij Kap Pattanaakaan Prachaathippatai* [Mobile Phone Mob: The Middle Class, Businessmen, and the Development of Democracy], Matichon Press, Bangkok.

Carey, J. W.: 1989, *Communication as Culture: Essays on Media and Society*, Unwin Hyman, Boston.

Davidson, D.: 1984, *Inquiries into Truth and Interpretation*, Clarendon, Oxford.

Harsono, A.: 1997, Indonesia: From Mainstream to Alternative Media, *First Monday: A Peer-Review Journal on the Internet*, available at http://www.firstmonday.dk/issues/issue3/harsono/

Kanchit Malaivongs: 1997, Internet Services in Thailand, available at http://203.148.255.222/cpi/it4.htm

Phuu Jad Kaan Raai Wan (Manager's Daily): 1997, October 6, p. 30.

Poster, M.: 1997, Cyberdemocracy: Internet and the Public Sphere, *in* D. Porter (ed.), *Internet Culture*, Routledge, New York, pp. 201-217.

Rorty, R.: 1989, Solidarity, *in* R. Rorty, *Contingency, Irony, and Solidarity*, Cambridge University Press, Cambridge, pp. 189-198.

Rorty, R.: 1991: Solidarity or Objectivity?, *in* R. Rorty, *Objectivity, Relativism, and Truth: Philosophical Papers*, Cambridge University Press, Cambrdige, pp. 21-45.

Walzer, M.: 1994, *Thick and Thin: Moral Argument at Home and Abroad*, University of Notre Dame Press, Notre Dame, IN.

THE CULTURAL INTERFACE: THE ROLE OF SELF

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Introduction

With the increasing use of communications technology across cultural
boundaries, and within cultural boundaries, we see shifts taking place both
within a culture about itself, and across cultures about each other. Yet in what
way are the shifts distinct, if so, from those which occur in face-to-face
interaction?

Consider the following simple example of a change in addressing: A
Japanese person who would normally when referring to a colleague address
him/her with surname to the addressee, changes to first name referral when
communicating via email in the c.c. section of the mail header, and in the
message itself. Neither would normally address the other by first name.

Yet in a meeting at another company, Japanese persons addressed
themselves by first name and surname, and the non-Japanese person with the
Japanese form of name and 'san'. They were adapting a traditional form of
respecting the non-company person to a non-Japanese person in this manner of
elevating my address in relation to their own. The addressing was a mixture of
English and Japanese. This is in contrast to the consistency of addressing in the
email situation, which is also an act of politeness to the English speaker's
cultural norm.

Consider another example of a British subject being asked if they ever
communicate differently with a non-British person in email. The reply is that it
depends on the person's competence in English. Yet in a face-to-face situation,
we would not necessarily judge someone's competence in understanding our
utterance by the level of their English, but by their ability to make sense of what
we are saying in relation to the situation. A Japanese person in a face-to-face
setting may be highly competent in communicating, yet in a video conference,
finds that due to poor quality of communication channels, he misunderstands
and that the emphasis is placed on 'competence' in language as being equivalent
to competence in communication.

It is proposed that the use of communications technology seems to be
creating a perception of language as being independent of the culture it's
participants are situated in. This is more likely to be the case for the English

speaker as this is the predominant language of cross-cultural communication, and even more so in email, say, than in face-to-face settings. Yet, the non-English speaking cultures are having to accommodate to a different language and to it's perceived cultural norms. Hence, we have the first-name self addressing occurring in the above example. The English speaker is not aware of this accommodation process and is thereby not involved in cross-cultural accommodation. This may explain why the discussions of communication by email and video-conferencing assume a universality of culture, or simply do not address the matter, in their focus on various behaviours such as flaming, group working etc.

Yet studies undertaken in Japan (Nojima, 1994; Nojima and Gill, 1997) indicate that we do need to consider in detail, the affects and new possibilities of communications technologies in and across cultural communication. In order to do so, we need to compare what happens in cross cultural communication face-to-face with computer mediated cross-cultural communication. Any in depth understanding of cultural dynamics also requires an analysis of the nature of self in culture. In this paper we shall present some findings from preliminary empirical research which compares British and Japanese subjects, and considers the relationship between self, culture and communication. We will conclude with reflections on future work.

Experiment

In the research presented below, we investigated people's perception of the differences, if any, between face-to-face communication and email. In particular we investigate the nature of emotion in relationship to certain attitudes about the difference between face-to-face and computer-mediated communication. The data we collected are of people's recollections of their experiences rather than their actions, i.e. their perceptions of the use of email.

In this study of the emotional dimension of Email communication, our cultural comparative hypothesis was that English speakers would not have as much difficulty in communicating with the written word as would the Japanese for whom much is communicated in silence. For example, disagreement and anger is to some degree communicated in silence, so the utterance of it can sound especially harsh in the Japanese communicative environment. Negatives are also expressed at the end of an utterance, unlike in English, where we say 'no' at the beginning of our utterance. In Japanese, this means that one can reserve judgement of the expression of the negative depending on the particular situation and how it unfolds. Hence, facial expression and other body movements are critical to making such a judgement. It is not therefore surprising that Japanese feel that people can be very rude when communicating

by email and in lists, and it is difficult for them not to react with anger at the explicit nature of the negative expression.

Our study involved Japanese and British subjects. This was a preliminary study, and the small size of the sample means that we do not draw definitive conclusions, but rather are looking for indicative differences. 10 Japanese subjects (6 male and 4 female), and 9 British subjects (5 male and 4 female) were interviewed in the respective countries (the UK subjects were contacted by telephone) and languages (English and Japanese). All belong to universities/laboratories, use Email daily, with 3-18 years experience, and use Email extensively.

We sought to explore the hypotheses that for Japan, the perception of email is that it is easier for conflicts to emerge, there is more likelihood of flaming, and that face to face communication is valued much more; that in the UK, Email is perceived as a functional communication media. By this, we mean there is a tendency to demarcate and separate functional communication from face to face, and that flaming also arises.

In discussions on Flaming there are differing views as to why it arises. Some claim that computer mediated communication (CMC) elicits more expressive behaviour because it lacks social information (Kiesler, Siegel and McGuire, 1984; Kiesler, Zubrow and Moses, 1985; Sproull and Kiesler, 1991). Others claim that CMC elicits no significantly more expressive behaviour than face-to-face and it embodies social information (Lea, Shea, Fung and Spears, 1992). We sought to investigate these issues in a comparative cultural context.

We hypothesised that for the UK subjects, as the English language places an emphasis on the written word, which is related to the dominance of the individual self, this would result in less problems in email communication and also less emotional expression in email communication, than for Japanese speakers. For the Japanese, we hypothesized that the emphasis in communication is on the spoken and unspoken equally, and relate to a concept of social self, that email communication is going to involve a greater degree of social information.

Our interview items were on email experiences; the difference between Email and face to face meeting, telephone and letter; experiences of difficulties and troubles using Email; emotional experiences with Email; communicating with other cultures using email; situations or topics which are better transmitted by meeting face to face (not by Email) or vice versa; use of smileys and other forms to communicate extra textual messages.

Discussion

The results of our study showed that in fact the Japanese subjects were on the whole, concerned to know the other person's situation and found email to be an

impediment to this. They expressed difficulty in reading it. This backs up previous research which shows that Japanese tend to meet off line as a matter of course when communicating by email, to the extent that there is a term in Japanese for this practice, namely 'Ofumi' or 'Ofu' (Nojima, 1994). They consider Email to be insufficient. They use a greater number of physically expressive smileys. Consider the following examples which show the comparison between Japanese and Western smileys:

Japanese: (^-^), (^o^), smiles; (^-^;) embarrassed with cold sweat; m(_)m sorry
English: :-) smile; :-) sad; ;-) wink

These smileys also show how the Japanese subjects try to avoid possible misunderstandings, and expressing negativity. These smileys seek to show the other person(s) how the utterance needs to be considered.

However, we also found that some Japanese have similar experiences as the English subjects, for example, they find that Email is efficient because you do not have to consider the other person's situation. It allows for greater equality of status. Japanese subjects also find it useful for functional matters such as arranging meetings or sending messages to a number of people at the same time in a list. It allows for quick responses. Hence, the use of Email is opening up new possibilities for the communication process and influencing Japanese culture as a result.

Other interesting findings were that Female subjects found it useful for 'keeping appropriate distance', and found men to be less masculine, and that Japanese consider email to be an impolite form compared to the letter.

On the matter of perception of difficulties in email communications, the initial response of British subjects as to whether they had any difficulties, was 'no'. Only later in the discussion a couple of them revealed some difficulties, but on the whole there were no great difficulties reported. Some spoke of the cost-benefit ratio of using Email depending on the 'complexity of information' that needs to be conveyed. No Japanese subjects used either of these expressions. All British subjects expressed that it allows for direct communication, is convenient, they do express emotion, and develop friendships. However, some expressed that it is difficult for handling negativity, they did experience flaming/abusive behaviour, they separate between email behaviour and face to face behaviour within a relationship, that it is a necessary way to meet people (2 subjects), they never communicate with people whom they do not already know for personal communication, and they do not use email for personal communications. So there was a variety of experiences reported.

From this study, social self does appear to be part of email communication in the Japanese case, as does the maintenance of social practices. Indicative changes are that Email is seen to be efficient for certain purposes because it is

useful for quick responses, short messages, and not having to consider the other person's situation.

For the UK subjects, the individual self (and written culture) is part of email communication. There were no particular difficulties in using email, that email is seen as being real communication. However there is great variance in the way subjects think about friendships and email. Every subject talked of efficiency and convenience (one subject said he would not use it if it were not efficient), and only one subject spoke about considering the other person's situation (in marked contrast to the Japanese subjects).

Conclusion

Our conclusions were that all subjects experience emotions in Email, and social cues are embodied in email. Japanese subjects bring values of social communication into Email but they are discovering new possibilities, some of which are contrary to social norms. This may increase. It may also affect social norms if we accept one argument that computer mediated behaviour is socially contextualised behaviour. British subjects do not speak of the other person's situation (except for one), and they treat email primarily as a functional tool.

This study was about the perceptions people had about their use of Email, and not about the actual practices. It indicates differences between Email use in Japan and the UK situated in cultural norms. It indicates for example that the pressure of the written word on Japanese communication is producing a range of communicative practices which avoids the direct use of language. However, it also indicates that changes which adopt the direct use of language are taking place. In both cultures there are variations in the degree to which the social or individual self is prominent. It is also therefore recognised, as indicative in our study, that some Japanese fit into the 'Western model' and some 'Western' people fit into the Japanese model of communication behaviour. However there are cultural differences in the way Email is perceived and used and further investigations are to understand these differences better, and in particular, research into the cross cultural communication situation is being undertaken.

References

Kiesler, S., Siegel, J. and McGuire, T.: 1984, Social psychological aspects of computer-mediated communication, *American Psychologist*, 39, 1123-1134.

Kiesler, S., Zubrow, D., and Moses, A.: 1985, Affect in computer-mediated communication: an experiment in synchronous terminal-to-terminal discussion, *Human-Computer Interaction*, 1, 77-104.

Sproull, L. and Kiesler, S.: 1991, *Connections: New Ways of Working in a Networked Organisation*, MIT Press, Cambridge, MA.

Lea, M., Shea, T., Fung, P. and Spears, R.: 1992, 'Flaming' in computer mediated communication, *in* M. Lea (ed.), *Contexts of Computer-Mediated Communication,* Harvester-Wheatsheaf, Hemel Hempstead.

Nojima, H.: 1984, Social and cultural aspects of human and computer networks: Japanese perspective, *Proceedings of Conference on New Visions of Post-Industrial Society*, University of Brighton.

Nojima, H. and Gill, S. P.: 1997, Cultural differences in evaluative communication, *Proceedings of the Second Conference of The Asian Association of Social Psychology*, Kyoto, Japan.

PART 6

CULTURE AND THE DESIGN OF TECHNOLOGY

BRIDGING THE GAP

Issues in The Design of Computer User Interfaces for Multicultural Communities

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Abstract: The design of computer user interfaces for multicultural groups presents a challenge to interface designers. This paper examines some of the key psychological aspects such as language, locus of control, symbolism and individual cultural characteristics that could possibly influence the human computer encounter of such groups. The results of a study done on two groups of students from multicultural backgrounds to determine differences due to cultural factors when using computer interfaces are discussed.

Introduction

The phenomenal growth of the Internet over the past few years presents exiting opportunities for global communications. The multicultural nature of the participants in the communication process poses a unique challenge to interface designers. The process of designing interfaces to accommodate a wide range of users involves three steps (Egan, 1988). The first step is to determine user differences to find out which user characteristics predict differences in overall performance. The next step is to isolate the source of variation in a particular task, and the final step is to redesign the interface to accommodate the differences among users. The determination of the sources of variation is not an easy task in a multicultural society due to the high variation in user characteristics caused by the different cultural backgrounds of the users, and the difficulty in finding the right user samples. Few studies produced results that can be applied in practice as behavioural studies tend to produce descriptive results rather than prescriptions for interface design.

This paper discusses some of the cultural issues that could influence the human computer encounter in the multicultural global community.

Communication

For behaviour to be perceived as a message it must be observed by someone, and it must elicit meaning. The meanings and interpretations of these messages depends on how the participants perceive the message, and this perception is dependent on the participants' cultural backgrounds that provide the framework within which messages are encoded and decoded. Culture therefore plays an important role in communication. The output from a computer screen can be seen as the behaviour of one participant in a communication process, and could elicit perceptions related to the cultural background of the computer user. It is therefore important to look at the issues that give shape to the cultural background of the computer user.

Language

Language is an important determining factor of the effectiveness of a user interface and studies have shown that simple translation will increase productivity of users of commercial systems (Bodley, 1993). However this is only possible in a limited number of cases as not all languages found in multicultural societies contain the necessary technical vocabulary. As the vocabulary of the interface designer is often also quite different from that of the users, care must be taken to prevent a situation where the user cannot understand the interface properly. It has been found that the different types of speech used by mothers from different social class groups have an effect on the linguistic ability of their children. Lower-class mothers typically use a limited code while middle-class mothers use an elaborated code when communicating with their children. The more complex codes could enable older children to be more oriented towards abstractions and generalizations. Lower-class children might think more in concrete and less conceptual terms (Mussen et al., 1984). This intracultural difference between users could therefore be expected to have an influence on human-computer interaction, particularly where a high degree of abstraction is used, which is more often than not the case in graphical interfaces.

Locus of Control

Locus of control refers to a person's beliefs about control over life events. People who feel personally responsible for the things that happen to them are said to have an internal locus of control while others who feel that their outcomes in life are determined by forces beyond their control are classified as having an external locus of control. This factor can influence the user's

encounter with the computer. An external locus of control is common among racial minorities and other disadvantaged groups (Baron and Byrne, 1984) due to the high degree of rejection, hostile control and criticism they experience. It might be hypothesized that a user from a cultural group with an external locus of control might have difficulties when using a computer, due to a fear of failure and rejection. Users have perceptions of their own ability to execute tasks and also an estimation of the risks and costs of mistakes, which in turn affects their self-esteem and confidence. The sense of being out of control is largely associated with the inclination to avoid such stressful situations, while the user with an internal locus of control may perceive himself to have more control over the situation and therefore be more willing to experiment. The design of the interface must therefore aim to instil in the user a feeling of being in control by being easy to understand and by using a menu structure that does not hide the underlying structure of the system.

Symbolism

Non-verbal language forms a very important part of communication (Baruth and Manning, 1991). Cultures could be seen as systems of shared symbols and meanings. Culture is communicated by symbols that give expression to the specific way in which a specific community sees and understands the world (Casson, 1981). A symbol can be defined as a sensory perceivable sign applied psychologically or mentally by a person to represent an abstract idea or a less perceivable object. As non-verbal behaviour patterns are distinctly different from culture to culture, it follows that screen displays, especially when of a symbolic nature, could be interpreted in many different ways by users of different cultures.

The use of icons constitutes an important aspect of computer interfaces, because the graphical representation allows abstract entities to be displayed as "real" objects that can be manipulated by the user. Whereas it is easy to display objects that are visual by nature, such as text or graphic objects, abstract objects, like files or functions like "copy" or "delete", are more difficult to portray because there are no familiar symbols that correspond to the meaning of the concept.

Icons can be classified by their form, type and colour. The form of an icon can portray certain characteristics of the object or suggest some cognitive characteristics of the task. Colour connotations vary strongly among different kinds of users, especially from different cultures (Marcus, 1995). The use of colour therefore requires a careful study of the background of users of the system.

Man's background, history and knowledge are embodied in his "cognitive schemata" and capacity for metaphorical thinking. The appropriate choice of visual representation is thus a key determinant of the success of a user interface.

Individual Characteristics

As most episodes of human-computer interaction take place on the level of the individual, it is necessary to obtain an understanding of the individual's culture and how the individual relates to it. One may assume that a user shares cultural characteristics with other users from the same cultural group, but intracultural or individual differences must also be recognized in interface design. It has been found that individual differences could account for performance differences on the order of 20:1 for certain computer based tasks (Egan, 1988).

The main elements of the individual's cultural identity are ethnicity, social class, gender and generational or lifespan differences. Each user simultaneously has an ethnic identity, a socio-economic class identity and a gender identity (Baruth and Manning, 1991). Race is based on the anthropological concept used to classify people according to physical characteristics such as skin and eye colour. Cultural groups seldom correspond with racial categories, at least not to the extent necessary to provide information that is culturally relevant. A person's race does not, for example, reveal his nationality, language or religion (Baruth and Manning, 1991). Race can therefore not be considered as an influencing factor when designing user interfaces.

ETHNICITY

Ethnicity refers to group values, beliefs, behaviours, language, culture and ways of thinking. The difference in values and thinking styles between groups affects what one person finds valuable in an interface and what others do not even notice (Kim, 1995).

SOCIAL CLASS

Social class differences play a significant role in determining how a person acts, thinks and relates to others. Such differences may sometimes be more pronounced than those resulting from cultural diversity (Baruth and Manning, 1991).

The restricted language code used by mothers from lower classes when talking to their children, might impair the orientation of the child towards abstraction and generalizations (Mussen et al., 1984), two important aspects of computer usage.

GENDER

The typical organization of the workplace has caused women to play a lesser role in the adoption of computerization. In 1993 less than 30% of American computer workers were women. This will obviously lead to a lesser degree of experience by women. Even the dramatic improvement in office technologies has not evened out the difference in experience between genders as female computer users are more likely to be clerks or typists doing simple repetitive work such as payroll, wordprocessing or airline reservations (Kling, 1995).

Males and females also show unique orientations towards problem solving and different behaviour patterns between sexes can have a major influence on human-computer dialogue. This is particularly true in the indigenous cultures where a strong differentiation between the sexes is often found.

AGE

When the age of adult users varies and experiential variables are controlled, age was found to be a powerful predictor of how difficult users will find it to learn a complex computer system (Egan, 1988). A possible cause for this finding is that users differ with respect to their lifespan stage. Each lifespan stage has its unique developmental characteristics that are often closely intertwined with the cultural characteristics of the user (Baruth and Manning, 1991).

An example of such a generational difference is the ability to speak the English language. Older generations might have lived in cultures with others speaking native languages, while younger generations who can communicate effectively in English are better able to cope in a predominantly English society.

Empirical Studies

Due to the subjective nature of cultural factors, complex test instruments are needed to determine the influence of each factor and even if a factor is found to be an important one, the finding does not necessarily apply to all users of a particular system. Few, if any, studies address the problem of interface design for a wide cultural mix. Existing guidelines mostly assume a specific cultural group as the target, and base the design upon this assumption.

A study done on a group of South African students representing eight cultural groups and six languages using simple text based interfaces has revealed major performance differences between the cultural as well as the different language groups. It is expected that further studies using graphical interfaces will reveal even more pronounced differences.

References

Baron, R. A. and Byrne, D.: 1987, *Social Psychology: Understanding Human Interaction*, 5th ed. Allyn and Bacon, Massachusetts.

Baruth, L. G. and Manning, M. L.: 1991, *Multicultural Counseling and Psychotherapy: A Lifespan Perspective*, MacMillan, New York.

Bodley, G. J. H. : 1993, *Design of Computer User Interfaces for Third World Users*, Unpublished masters dissertation, University of Port Elizabeth.

Casson, W. C.: 1981, *Language, Culture and Cognition: Antropological Perspectives*, MacMillan, New York.

Downton, A. C. (ed.): 1991, *Engineering the Human-Computer Interface*, McGraw-Hill, London.

Egan, D.E.: 1988, Individual differences in human-computer interaction, *in* Helander, M. (ed.)*, Handbook of Human Computer Interaction*, North Holland, Amsterdam, pp. 543-661.

Kim, S.: 1995, Interdisciplinary cooperation, *in* Baeker, R. M. (ed.), *Readings in Human-Computer Interaction: Toward the Year 2000,* Morgan Kaufmann, San Francisco, pp. 305-311.

Kling, R.: 1995, Controversies about computerization and the organization of white collar work, *in* Baeker, R. M. (ed.), *Readings in Human-Computer Interaction: Toward the Year 2000*, Morgan Kaufmann, San Francisco, pp. 305-311.

Marcus, A.: 1995, Principles of effective visual communication for graphical user interface design, *in* Baeker, R. M. (ed.), *Readings in Human-Computer Interaction: Toward the Year 2000*, Morgan Kaufmann, San Francisco, pp. 425-435.

Mussen, P. H., Conger, J. J., Kagan, J. and Huston, A. C.: 1984, *Child Development and Personality*, 6th edn, Harper & Row, New York.

CROSS-CULTURAL UNDERSTANDING OF METAPHORS IN INTERFACE DESIGN

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This paper describes a study that will investigate the use of metaphors in interface design for culturally diverse users. Previous studies were generally in the area of technology acceptance and cross-cultural attitudes towards computers. These studies mostly established that culture indeed has an impact on interface acceptance and many of these conclusions are inadequately based on self-reports rather than on direct evidence. The research discussed in this paper will focus on metaphorical aspects of design using direct observation methods. Metaphors are used in interface design to describe abstract objects in a more familiar way. Understanding of these metaphors is likely to be influenced by the users cultural background.

The research will be performed in two phases: First, a pilot study will be carried out to test the methods to be used and to find a focus for the main research. The results will hopefully show what use of metaphors in interface design are most problematic (e.g. textual, virtual, graphical, or combinations). Also, results may give some indication of how users' understanding of metaphors differs cross-culturally. In the study, subjects will participate in half an hour individual observation sessions in which they will work through a Web site of a virtual campus guided by a task sheet, and comment on how they understand the textual and graphical metaphors.

The following phase will be influenced by the findings from the pilot study. Each culture to be evaluated will be assessed by three activities. The first activity will involve evaluating users' understanding of a non-localised North American product by observation sessions and think aloud protocols. The subjects will be from several cultural backgrounds and will be tested in their everyday environment performing an everyday task. The aim is to find out in what way the users' cultural background influences their understanding of metaphorical aspects of interface design.

The second activity will make use of the data from the first activity and will involve the design of a small prototype system for each participating culture. The system will have some basic functionality presented by a graphical

interface and will show metaphors that accommodate for the users' cultural
background. The third activity will then involve observing users' understanding
of the prototype interface.

The aim of the research is to find out whether an understanding of
metaphors in interface design is indeed culturally sensitive; to provide an
addition to current questionnaire based studies on cultural aspects of interface
design; and to provide a portfolio of appropriate metaphor usage for the cultures
involved. Findings are hoped to contribute to a better understanding of how
meaning of metaphors varies across cultures. The research may also provide
some directions on appropriate intercultural interface design.

CULTURE AND PARTICIPATION IN THE DEVELOPMENT OF CMC:

Indigenous Cultural Information System Case Study

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Abstract. Computer-Mediated Communication (CMC) networks need to be viewed as information systems and appropriate socio-technical methodologies employed in their design and evaluation. Human factors issues are of particular importance for such systems, especially where they are used for cross-cultural communication. Culture, values and attitudes towards technology of the system users (and designers) are important factors which can be addressed through the use of a highly participatory system development methodology. Significant ethical issues arise for system developers, especially in the context of systems involving indigenous communities and the preservation of local cultures. The paper discusses these topics and summarises their relevance to a cultural heritage information system being developed with an indigenous community in the Pilbara region of Western Australia.

1. Highly Participative Methodology for Culturally-Appropriate CMC

Computer-mediated communication (CMC) occurs in an increasing variety of work and social contexts. Analysis of CMC may be enhanced by adopting design and evaluation procedures from the information systems (IS) discipline. These procedures integrate technical and social (human factors) aspects, enabling the efficiency, effectiveness and equity of the system to be analysed in a coherent and comprehensive manner.

The IS discipline studies the way individuals, groups and organisations use information. This is generally in the context of computer-based IS, which can be considered to consist of five aspects: hardware; software; data; people and procedures. IS analysts assist organisations to fulfill their objectives through projects which seek to identify information processing requirements and to design, implement and maintain a suitable IS. Such projects are usually executed in accordance with a particular set of procedures, techniques and tools,

collectively referred to as a methodology. Although these methodologies have traditionally focused primarily on the design of hardware, software and data aspects of the IS, newer (so called 'soft') approaches involve more consideration of human factors issues (Avison et al., 1993; Crowe et al., 1996). These socio-technical methodologies incorporate a higher level of participation by system users and focus on identification of culturally-determined user needs and constraints.

The development of an information system needs to be seen as a social as well as a technical process. The methodology used should enable the analyst to understand the culture and values of the people who are likely to use the system and to design the system so that it matches their needs. The higher the level of user participation in the process the more likely it is that it will be culturally-appropriate, provided the methodology is suitable and is applied effectively. User participation can be justified on practical grounds in that it aids greatly in requirements determination and heightens user satisfaction and 'ownership' of the resulting system. It is also important from an ethical standpoint (Kling, 1996).

The following steps may be used to investigate an instance of CMC:
- examination of the objectives and hence information requirements;
- detailing of user and task characteristics and typical use scenarios;
- determination of the data sets and processing functionality requirements;
- examination of the usability of the system and user satisfaction;
- determination of suitable implementation and maintenance procedures.

The resulting system will tend to be more culturally-appropriate if the active participation of users is maximised at each stage of development. However, participation is probably most important in the early stages since this is where the most fundamental decisions are taken. System usability and cultural-appropriateness is not about superficial (interface) issues alone but must be built into the very nature of the system.

2. Description of the ICIS Project

Ireamugadu (Roebourne) is a small town near the coast in the Pilbara region of Western Australia, with a population of approximately one 1,500 people, 95% of who are indigenous. It is the place where many Ngaluma, Injibandi and Banjima people live, although the traditional country of most of the people is up to 200 km inland. Many of the older indigenous people in Roebourne have little or no formal (non-traditional) schooling. However, children today attend primary and secondary schools and an increasing number undertake trades courses or university degrees. Health and living standards have been, and are still, poor. It is a town that has seen much violence. In the 1990's strong

indigenous leadership and a relatively united community has resulted in significant changes.

The authors are working with the indigenous community at Roebourne to develop a cultural heritage information system utilising multimedia, geographic information system (GIS) and database technology (Trees and Turk, 1998a, 1998b). The project was initiated by a request from the community early in 1996 and is called the Ieramugadu Cultural Information System (ICIS). The aim is to provide a flexible information bank capable of producing convincing products in a variety of circumstances (e.g. education or negotiation) in line with community needs and not infringing cultural constraints. The conceptual framework must match the complex social system and the forms of representation used must be adequate to fully express the underlying cultural concepts - i.e. the integrated relationships between:

> *places:* not just an arbitrary configuration of physical locations but an assemblage of places connected by meanings associated with traditional belief systems;
> *people:* the specific group/s of people who possess the meaningful relationship with (and are responsible for) those particular places;
> *procedures:* the laws and customs which link the people to the places and sustain their unique relationship to the land and each other;
> *presentations:* the practices and physical manifestations by which the laws and customs and meaning relations between the people and places are expressed (and hence maintained), such as ceremonies and paintings.

Because the most fundamental thing in indigenous culture is land, spatial aspects are especially important. Thus, ICIS uses GIS software linked to multimedia and database elements. Using the government topographic mapping as a spatial base, new maps are being created which use the traditional names and show places of cultural significance. Multimedia elements (such as images, sounds and video sequences) can then be associated with particular locations to help convey the connection between place and traditional law. The genealogical database can also be linked to the GIS showing the places of significance to particular people, such as where they were born and their mother's "country". The multimedia elements can be made more rich and incorporate representations of law through paintings, songs and ceremonies. ICIS will then fulfill the objective of representing the four-way relationships between place, people, procedures and presentations.

A key step in the development of these system concepts has been the establishment of Ngurra Wangkamagayi (the cultural training group). The authors have worked with group members and tribal elders to record cultural information in digital form and to develop appropriate narrative structures for its use in cultural awareness courses run by the group for staff from mining

companies, teachers, school groups and others. This may be followed by development of cultural tourism activities. So far only hard copy outputs have been used, however, this has established some basic parameters for the development of on-line multimedia presentations.

This project addresses key ethical aspects in the context of post-colonial practice, critical ethnography and visual anthropology. Culturally appropriate technology developments must complement existing oral traditions. They must also engage with specific cultural practices such as naming taboo - the prohibition on using a person's name after death. With the use of photography, film and multimedia in indigenous communities the naming taboo has been redefined to take into account the use of images (Michaels, 1990).

Relevant ethical issues include the following:

- Are computer-based IS and indigenous culture incompatible (in terms of ontology and epistemology)?
- Is information technology a tool for epistemological assimilation?
- Can the richness of indigenous concepts be represented in a computer?
- Do IS take indigenous knowledge away from the community?
- Do IS inscribe and fix cultural knowledge inappropriately?
- Are IS incompatible with oral traditions?
- What (whose) authority does the information carry?
- Is there proper respect for gender specific aspects of information?
- How does the project affect relationships between generations?
- Can possible misuse of information be avoided?

3. Conclusions

To date there has been no on-line access to information involved in the ICIS project, although several possible scenarios have been examined. For instance, the Ngurra Wangkamagayi culture group could maintain a web site with example heritage information to encourage potential cultural tourists to contact the group and make a booking, possibly interactively. The indigenous participants are not yet ready to meaningfully debate the relevant issues and decide what they want to do and the best way to achieve it. This is as much about the relationships between people and social procedures as about the confidentiality of specific information.

The discussion above clearly illustrates the importance of using a highly participative methodology for the development of ICIS. The strong cultural and ethical aspects of the project make it easy to understand that such an approach is needed. Although the importance of participation may be less starkly apparent for the development of other types of information systems and for CMC, we

contend that all users have unique cultures and that ethical considerations are no less critical for being subtle and difficult to discern.

References

Avison, D., Kendall, J. E. and DeGross, J. I. (eds): 1993, *Human, Organizational, and Social Dimensions of Information Systems Development*, Elsevier Science.

Crowe, M., Beeby, R. and Gammack, J.: 1996, *Constructing Systems and Information: A Process View*, McGraw Hill.

Kling, B. (ed.): 1996, *Computerization and Controversy: Value Conflicts and Social Choices,* Academic Press.

Michaels, E.: 1990, *Bad Aboriginal Art: Tradition, Media, and Technological Horizons*, Allen & Unwin.

Trees, K., and Turk, A. G.: 1998a, Reconciling space: Negotiating connection to an indigenous immemorial past, *in* R. Barcan and I. Buchanan (eds), *Spaciographies: Essays in Australian Space,* University of Sydney Press (in press).

Trees, K. and Turk, A. G.: 1998b, Culture, collaboration and communication: Participative development of the Ieramugadu Cultural Heritage Information System (ICIS), *Critical Arts Journal* (in press).

GLOBAL DIFFUSION OF INTERACTIVE NETWORKS

The Impact of Culture

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Abstract. The Internet and other interactive networks are diffusing across the globe at rates that vary from country to country. Typically, economic and market structure variables are used to explain these differences. The addition of culture to these variables will provide a more robust understanding of the differences in Internet and interactive network diffusion. Existing analyses that identify culture as a predictor of diffusion do not adequately specificy the dimensions of culture and their impacts.

This paper presents a set of propositions to be used in analyses of the impact of culture on the diffusion of interactive networks. The propositions were developed using cultural constructs presented by Hofstede, Herbig and Hall. Diffusion of innovations theory and critical mass theory provide the theoretical base. The development of the propositions resulted from a close examination of the theories for relationships mediated by culture. The resulting propositions use cultural variables in relationships established by the theories. It is hoped that the propositions will serve as a starting point for future research in the area of cultural influences on the diffusion of interactive networks.

1. Introduction

On a global basis, diffusion of the Internet is occurring at vastly different rates between the developed and less developed countries. These differences have been partly attributed to differences in GDP (Who's Winning..., 1996). However, if GDP were the only factor involved there would be equally high levels of diffusion across the economically developed countries. As the following chart shows, diffusion rates vary widely even among developed countries.
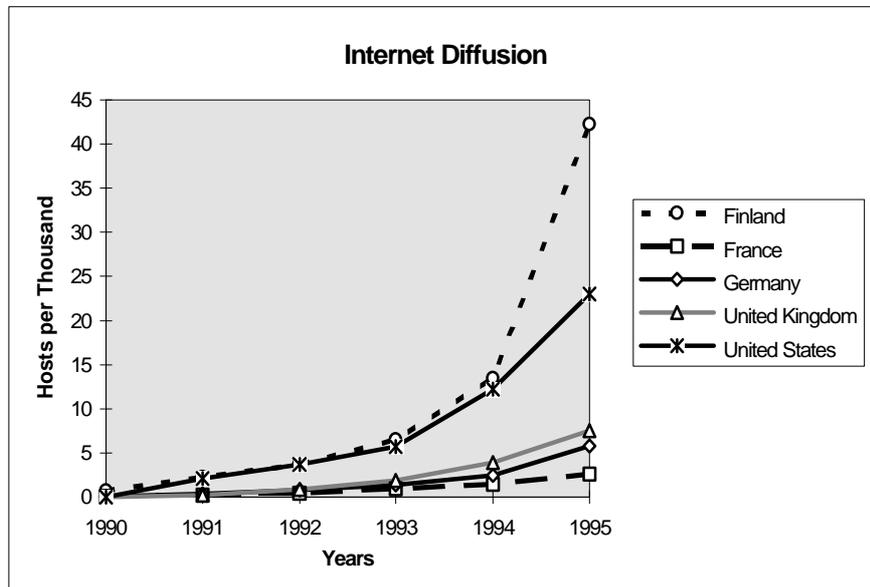
Figure 1: Internet Diffusion Patterns (Source: ITU Stars Database*)*

Obviously, a more complex explanation of the Internet diffusion process is required. Additional variables used to explain this difference include the availability of bandwidth (Hahne, 1997), pricing (Cronin, 1996), and the telecommunications market structure (Paltridge, 1996). Although these variables help explain some of the variance in Internet diffusion among countries, one important variable remains. That variable is culture. Culture has been mentioned as a factor in the diffusion of the Internet in several studies (Cunningham, 1995; Cronin, 1996; Goodman, Press, Ruth, and Rutkowski, 1994). For example, Goodman et al. (1994) state that barriers to network diffusion fall into three broad categories: (i) government policies; (ii) technical impediments; and (iii) local and cultural factors. Although inclusion of culture as a variable in this analysis is valuable, the method used to demonstrate its impact was anecdotal and therefore not as effective as it could be. The exact relationship of specific cultural variables to particular aspects of the diffusion process were not described. This treatment of culture as an explanatory factor is typical.

There are two reasons for the lack of rigorous analysis of the relationship between network diffusion and culture. The first is a perception that culture is an unquantifiable construct. Many anthropologists would agree with this notion. Cultural variables are seen by some to be constrained to the context in which they are observed so that generalizations across cultures and nations are not

possible. The second reason is diffusion theories do not explicitly state the relationships between cultural variables and network diffusion processes.

The goal of this paper is to clear away some of these barriers. Specifically, theoretically derived propositions will be developed based on established, empirically tested cultural variables. Theories, including diffusion of innovations and critical mass theory, will be explored for areas in which cultural variables can provide explanations for diffusion processes. Also, cultural variables relevant for the analysis of communication technologies, as presented by Hofstede, Herbig, and Hall, will be discussed. The result will be propositions that combine cultural variables with the existing diffusion theories, easing the integration of cultural variables into network diffusion studies.

Theories and propositions should be broad in scope. For this reason the following discussion will focus on diffusion of interactive networks in general, not merely the Internet. Examples of other interactive networks include proprietary networks such as CompuServ and America Online and private corporate networks. Cellular telephone networks are also interactive networks. Innovations which are not interactive networks are one way cable television systems and direct broadcast satellite service.

This paper is concerned with the diffusion of networks on a global basis, with countries serving as the unit of analysis. Diffusion studies rarely use countries as the unit of analysis. However, the questions answered by such an analysis are important for a wide variety of professionals, including policy makers, marketing strategists, development agencies, and academics. Typically, a study of network diffusion would have 'use of the network' as the dependent variable. However, on a global basis, use of interactive networks is difficult to quantify. A variable which is quantifiable is access. Therefore, in the following discussion when it helps to imagine specific independent and dependent variables, the hypothetical dependent variable will be 'access to an interactive network.' As a dependent variable, access provides basic answers about where use of a network can occur. Access does not, however, provide information about access disparities among groups within cultures, patterns of use, and the implications of use. These questions must be addressed separately but can be informed by research based on the propositions developed in this paper.

2. Culture and National Cultural Dimensions

The relationship between new technologies and culture is the subject of a large body of research. One area within this body is concerned with the role of culture in the process of developing new technologies. Questions regarding the role of culture in fostering characteristics of inventiveness or innovativeness are explored. National cultural characteristics are also presented as a prerequisite to technology development and the economic success that follows (Herbig, 1994).

Studies such as these define one end of a continuum of the technology diffusion process. Generally, they are interested in the point at which the innovation is created, the precursor to the diffusion process.

At the other end of the culture/technology continuum is an area of research concerned with the effects of diffused technologies on society. These studies examine the mechanisms through which technology affects culture. Specific examples include studies in which new communication technologies change social structures (Latane and Bourgeois, 1996), norms of communication (Dutton, Rogers, and Jun, 1987; Caron, Giroux, and Douzou, 1989), or the establishment or new norms (i.e. the norms of "netiquette"). Together these two areas define the ends of a continuum. In the middle of the culture/technology continuum, culture influences the diffusion of technology, and this is the topic of the following investigation.

2.1. CULTURE

The identification of variables used to examine the relationship between culture and the diffusion of networks requires a detailed explanation of culture. Culture is such a broad construct that the best one can do is place boundaries on its meaning for a particular application. Geertz (1973) defines culture as:

> "an historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life." (Geertz, 1973, p.89)

More simply, culture can generally be described as the way of life of a people (Rosman and Rubel, 1995). Specifically, it refers to the socially learned behaviors, beliefs, and values the members of a group or society share. Certain cultural features, known as cultural universals, are present in each society. These universals include language and other symbols, norms and values, and the tension between ethnocentrism and cultural relativism. Ethnocentrism refers to the belief that one's culture is superior to all others, while cultural relativism requires that the value of customs and ideas of a society must be judged from within the context of that society (Persell, 1984).

Although culture is defined as a societal level construct, it certainly has implications for individual behavior. Culture can be seen as a mediator between human nature, which is universal, and personality, which is specific to the individual (Hofstede, 1991). The result is that although a range of personality types will be found in any society, there will also be a preponderance of individuals with a particular kind of personality (Rosman and Rubel, 1995). The personality type represents how people within a society respond to their cultural norms. This demonstrates the ability to draw conclusions about societal culture based on responses of a sample of individuals from a society.

2.2. NATIONAL CULTURAL DIMENSIONS

Culture, therefore, is a societal construct. Although a society is more homogenous than a nation, and a nation may contain several distinct societies, studies often use nations as the unit of analysis. The reasons for this are simple. National governments collect data which are often only relevant at the national level. The problem this creates for the development and use of national level cultural characteristics is that one must be careful in interpreting results. National level characteristics must not be interpreted at the individual level.

Studies attempting to identify national cultural characteristics are plentiful. One of the most widely used sets of national cultural characteristics are those established by Geert Hofstede (1980). Hofstede analyzed survey data from an international sample of IBM employees from 1967 to 1973[1]. The survey questions were designed to measure work-related values. Hofstede used these measures of values, which are a component of culture, to identify national level cultural characteristics common among all of the respondents. He then created scales which provided a score on each of the characteristics for each of the 51 countries represented in the sample.

Hofstede found national cultures vary on five dimensions: individualism vs. collectivism, femininity vs. masculinity, long term vs. short term orientation in life, power distance, and uncertainty avoidance (Hofstede, 1991)[2]. For four of the five national cultural dimensions the implications for diffusion of interactive networks are inconclusive. Based on descriptions of the dimensions, contradictory hypotheses predicting both an increase and decrease in the speed of diffusion can be developed. This does not imply that the cultural dimensions are irrelevant for the study of interactive network diffusion. It does, however, highlight the need for a theoretical structure to more accurately predict the direction of the relationships. The meanings of these dimensions and their implications for interactive networks are discussed below.

The individualism versus collectivism dimension was defined by an individualism index. A country scored low on this index if it was a collectivist society (Colombia, Indonesia) and high if it demonstrated individualistic tendencies (USA, Australia). Hofstede states that for collectivist societies the prevailing work norms are that management is done on a group basis and that relationships prevail over tasks. For individualistic societies management is done at the individual level and tasks prevail over relationships.

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[1] For a detailed analysis of the method used see (Hofstede, 1980). The data were collected from IBM employees covering 72 national subsidiaries, 38 occupations, 20 languages, and at two points in time: 1968 and 1972. In total, there were more than 116,000 questionnaires with over 100 questions each.
[2] The short-term vs. long-term orientation dimension was in fact discovered by Michael Bond, although it is presented with Hofstede's original four dimensions in many studies.

The characteristics of individualism and collectivism do not directly address issues of technology. Conclusions based on Hofstede's descriptions suggest two contradictory hypotheses about the role of this cultural factor in the diffusion of interactive networks. First, the individualism construct is partially driven by GDP. This infers a positive correlation between individualism and interactive network diffusion. On the other hand, in collectivist nations the need to communicate with one's 'ingroup' could create greater demand for an interactive network. This suggests a negative relationship between diffusion and individualism. Therefore, it is theoretically unclear which of these two hypotheses should be supported if empirical tests were performed.

The masculinity versus femininity dimension is also described by an index. In this context, a masculine society has social gender roles that are clearly distinct. In a feminine society social gender roles overlap. A zero on the masculinity index indicates a feminine culture. In feminine cultures (Norway, Sweden) managers use intuition and strive for consensus; emphasis is placed on equality, solidarity and quality of work life; and resolution of conflicts is achieved by compromise and negotiation. In masculine cultures (Japan, Austria) managers are expected to be decisive and assertive and emphasis is placed on equity, competition among colleagues and performance; conflicts are resolved by fighting them out.

Again, explicit conclusions about the relationship between this dimension and the diffusion of interactive networks are difficult to make. On one hand, it could be proposed that feminine cultures will have faster rates of diffusion as they are more likely to provide access for all. On the other hand, the competitive nature of masculine cultures might provide an incentive for early and continued adoption. Which hypothesis is theoretically justified is not clear.

The long and short-term orientation in life dimension is based on Confucian ideals. It is reported as a long-term orientation index in which high scores indicate a long-term orientation. Characteristics of long-term oriented societies include respect for social and status obligations within limits, thrift, high savings rates, and perseverance. Countries scoring high on this index include China, Hong Kong, Taiwan and Japan. Short-term orientation cultures are characterized as having respect for social and status obligations regardless of cost, social pressure to 'keep up with the Joneses' even if it means overspending, and low levels of savings. Countries with a short-term orientation include Canada, Philippines, Nigeria, and Pakistan. The implications for this dimension on diffusion of networks are unclear. The high savings rates of long-term oriented countries would allow for greater investment in network technologies. However, the pressure to 'keep up' in short term countries might provide an impetus for diffusion of networks. As with the individualism/ collectivism dimension and the masculinity/femininity dimension, the

implications for the diffusion of interactive networks based on the short/long term orientation are ambiguous.

The power distance score assigned to each country describes the interdependence of relationships. It is defined as the extent to which the less powerful members of institutions and organizations within a country accept that power is distributed unequally. Hence in low power distance countries (Austria, Israel) it is generally believed that inequalities among people should be minimized and in high power distance countries (Malaysia, Guatemala) inequalities are expected and desired. Where interactive networks are concerned, power distance may manifest itself in the following ways.

In low power distance countries subordinates expect to be consulted and the ideal boss is a resourceful democrat. Consequently, in low power distance countries the more equal status of subordinates may provide a grass roots path for diffusion of a network. On the other hand, in high power distance countries subordinates expect to be told what to do and the ideal boss is a benevolent autocrat. In this situation, the autocracy may facilitate quick diffusion of a network once the decision to adopt is made. Another aspect of power distance is concerned with status symbols. In high power distance countries privileges and status symbols for managers are popular and expected. In low power distance countries status symbols are frowned upon. Adoption of some interactive networks, such as cellular telephony, is seen as a status symbol and would therefore be effected by power distance. Again, the implications of power distance on the diffusion of interactive networks is inconclusive.

Although the effect power distance has on the speed of diffusion is unclear, researchers have concluded the opposite: that diffusion of technology affects power distance. Teboul et al. (1994) suggest that computers, which are seen by some employees as intimidating, may actually increase power distance. Alternatively, an easy-to-use, non-computer-based fax machine may have the opposite effect. Therefore, power distance may be mediated by the introduction of this less intimidating technology.

The national cultural dimension whose implications for the diffusion of interactive networks is clear is uncertainty avoidance. The uncertainty avoidance dimension is reported as an index and is interpreted as the extent to which the members of a culture feel threatened by uncertain or unknown situations. In countries with low uncertainty avoidance (Jamaica, Denmark) it is common that motivation comes from achievement, esteem or belongingness; there is a high tolerance for deviant or innovative ideas and behavior. In strong uncertainty avoidance countries (Greece, Portugal) there is resistance to innovation and motivation for work comes from security as well as esteem and belongingness. The implications of uncertainty avoidance for diffusion of an innovation are clear. In low uncertainty avoidance cultures new ideas will be more readily accepted than in high uncertainty avoidance cultures. Thus, low

uncertainty avoidance cultures should experience faster rates of diffusion of new technologies.

Hofstede's work has been both supported and refuted by replication (Smith, Dugan, and Trompenaars, 1996), although the majority of replications support the existence of the dimensions (see Sondergaard (1994) for a review of the replications). Despite support for the dimensions, they are not all inclusive and there are additional variables that can be used to explain the relationship between culture and technological diffusion. Religion, gender equality and ethnocentrism (Herbig, 1994), and high and low communication context (Hall and Hall, 1987)[3] are examples of national level variables that have been used to date.

Although Herbig was concerned more with the development of innovations rather than their diffusion, the national cultural characteristics associated with generating innovations may also be relevant for their diffusion. For example, Herbig suggests gender equality will impact a country's innovativeness. He differentiates this from Hofstede's dimension of masculinity/femininity, which is more concerned with the relationship between gender roles rather than equality. Herbig's rationale for use of this cultural trait in explaining the source of innovativeness is simple. A country in which gender equality is low fails to tap the potential of half its population, thus reducing its potential for innovation. In high gender equality countries the potential for innovation is greater because a larger percent of the total population are in a position to innovate.

Although Herbig provides rankings on gender equality for 50 countries, alternative sources of annually updated gender equality scales exist. Each year in their Human Development Report the UNDP provide two measures of gender equality. One, the gender related development index (GDI) is calculated for 137 countries. The second index, the gender empowerment index, GEM, ranks 104 countries on gender inequality in areas of economic and political participation and decision making (UNDP, 1996).

Ethnocentrism, the belief that one's culture is superior to all others, is another national level cultural variable suggested by Herbig to impact innovation. As Herbig sees it, cultures low on ethnocentrism will be able to accept ideas from other cultures, leading to a higher degree of innovativeness. This may also mean such cultures will more readily diffuse certain innovations, especially those developed in other cultures.

A second way in which ethnocentrism may affect diffusion of communication technologies is through language. Low ethnocentrism implies a greater acceptance of ideas from other cultures. Ideas from other cultures will be shared in a variety of languages, which implies cultures low on ethnocentrism will support a greater number of languages. Language barriers have been shown to

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[3] For an extensive list of studies concerned with cultural traits and innovativeness see Herbig (1994).

inhibit diffusion of communication technologies. A discussion of the diffusion of multimedia products in Europe concluded: "Language barriers are also seen as potential hurdle to expanding this market. On-line services would need to be translated to suit each local market" (Cunningham, 1995). Therefore, cultures low in ethnocentrism should experience higher levels of demand and faster rates of diffusion of communication technologies.

An additional national cultural characteristic which influences the diffusion of communication technologies is high and low communication context as presented by Hall (1987). Communication context is "the information that surrounds an event and is inextricably bound up with the meaning of that event" (p.7). Events and context combine to produce meaning from communication, and their importance varies among different cultures. Cultures in which communication context is highly valued have been labeled as high context cultures. Japanese, Arab and Mediterranean cultures have been labeled as high-context due to their extensive networks and close personal relationships. Low-context Americans, German, Swiss and Scandinavians, on the other hand, require more context specific information in their communications as their types of relationships do not make this information inherent to the communication event itself. Teboul et al. draw connections between Hall's communication context and the use of communication technologies. They raise questions about the ability and satisfaction of persons from high and low context cultures to communicate through non-visual media (i.e. email) (Teboul, Chen, and Fritz, 1994). This cultural characteristic would certainly have implications for the diffusion of network-based interactive innovations such as email.

The works of Hofstede, Herbig and Hall demonstrate the construct of culture is very broad. When using this construct it is necessary to place boundaries on its meaning. The above discussion introduced several national level cultural variables relevant for studying differences in diffusion patterns of networks across nations. The next sections will discuss the special characteristics of interactive networks, and subsequently, the relationships between the diffusion of interactive networks and the cultural variables discussed above. These proposed relationships will be the result of the integration of cultural variables with diffusion theories.

3. Special Characteristics of Interactive Networks

The nature of the innovation will have implications for its diffusion (Lin and Zaltman, 1973) . It is widely recognized that the potential adopter's perceptions of the innovation, and not "objective" characteristics of the innovation, are the determinants of an innovation's diffusion (Rogers, 1995). However, it has also been recognized that network-based and interactive innovations possess certain objective characteristics which differentiate them from stand-alone innovations.

Rogers (1986) found it necessary to adjust diffusion of innovations theory for the special characteristics inherent to communication technologies. The following paragraphs describe these special characteristics.

The most fundamental characteristic of a network's diffusion is that both its demand and supply are affected by what is known as an externality (Antonelli, 1989; Allen, 1988). Varian (1992) describes an externality in the following way:

> "When the actions of one agent directly affect the environment of another agent, we will say that there is an externality."

The special status of an externality is derived from the assumption in economics that consumption decisions and the value or utility derived from consumption of a good are a function of autonomous preferences (Antonelli, 1989). When interactions between agents occur and preferences are affected externalities exist.

Externalities can be discussed along two dimensions. First there is the dimension of positive/negative and second is the dimension of consumption/production. Positive externalities exist when the interaction between agents results in an increase in utility. In networks positive externalities are present when new subscribers join a network and their utility is increased by the presence of existing members. The numbers of existing members and who those members are influence the new member's decision to adopt. Positive externalities may also be present for the existing members whose utility increases as a result of increased subscribership to their network[4].

Depending on the network and its members, new members may also activate negative externalities. Negative externalities are present whenever the actions of other agents decreases the utility for other network members. For example, a member of a congested network may be displeased with the addition of new members.

The examples used to demonstrate the difference between positive and negative externalities drew upon a particular economic action, consumption. These examples can be seen as positive and negative consumption externalities. The opposite of consumption is production. Production externalities exist when the interaction between agents affects one agent's ability to supply goods. With networks, production externalities also exist. The ability of a firm to diffuse its portion of the network may be a affected by the larger scale network to which they must connect to provide the services their customers desire. For example, an Internet service provider (ISP) is most often at the mercy of the local phone company to connect customers to the ISP as well as connect the ISP to the

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[4] Mueller (1996) provides an alternate explanation of this phenomenon. He sees the increase in access to other subscribers at a less than proportional price as a demand-side economy of scope rather than an externality.

Internet. Positive externalities are present when the network is in place and working properly, while problems with the public network produce negative externalities for ISPs.

The discussion of network externalities raises another important characteristic which is critical mass. Critical mass is a phenomenon which affects the diffusion of *interactive* network-based innovations. The phenomenon occurs as a result of human nature and is compounded by the externality characteristic of networks. The concept of critical mass has its origins in the study of social movements where individuals' behavior in relation to other group members was examined. The concept has been applied to the diffusion of interactive technologies and is important for diffusion because the value of the innovation depends on the adoption decisions of others. The interdependence of adopters of an interactive innovation changes the shape of the diffusion curve from the regular S-shaped curve to a curve that has flatter slope initially but which quickly becomes more steep than the S-shaped curve. The point at which the slope makes this change and diffusion becomes self-sustaining is the critical mass (Rogers, 1995; Markus, 1990; Antonelli, 1989; Allen, 1988)[5]. Critical mass is concerned with the number of adopters, as well as the existence of opinion leaders among those numbers. This implies that the communication network structure, independent of the physical network being diffused, will play a vital role in contributing to the power of the critical mass (Rogers, 1986, p. 320).

A third characteristic of network-based innovations is that consumers must have access to the network before they can independently choose to adopt (Hadden and Lenert, 1995). For example, in the U.S. only roughly 60% of homes with access to a cable television network choose to subscribe to that network. The homes have access, a prerequisite for making their individual adoption decision.

There are different degrees of accessibility and they are determined by the type of network. Networks can generally be described as switched or unswitched and wired or wireless (Hadden and Lenert, 1995). Switched network accessibility may be constrained due to the significant cost switching equipment adds to the network. The wired/wireless characteristic of a network also has implications for accessibility. Wireless networks can be accessed easily because they are not constrained by the limits of physical connections[6]. For example, Direct Broadcast Satellite a wireless, unswitched network, is highly accessible as compared to a switched, wired network service such as the use of a cable modem.

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[5] It can be argued that the existence of a critical level of adoption to ensure success of diffusion is not unique to network based innovations (Fullerton, 1989). However, this ignores the interdependence of utility of adopters

[6] One should keep in mind however that wireless networks often at their core rely on wired networks. For example, cellular telephony providers switch their mobile customers calls onto the wired PSTN network.

The size of the serving area of a network is also an important characteristic. Hadden and Lenert (1995) expect networks to diffuse more slowly than stand alone innovations because wired networks must be built incrementally. However, this may not always be the case. The rapid diffusion of the Internet, a global network, has occurred because of the simultaneous development of smaller public networks all over the world. The description of the Internet as "a network of networks" demonstrates this point.

The final characteristic of networks relevant for diffusion is that they act as infrastructure and therefore have a special role in society (Hadden and Lenert, 1995). Societal expectations about infrastructure include equal access. There may also be an expectation that infrastructure is provided by the state and financed through taxes. Although the infrastructural aspect of networks does not affect the individual's adoption decision per se, it does have ramifications for the study of networks in that access, and more specifically lack of access, may be seen as a social problem. If lack of access is considered a social problem diffusion patterns of the innovation will be affected.

Characteristics of network-based interactive innovations which make them different from other innovations and thus require special treatment have been described above. These characteristics include the existence of externalities and the requirement of a critical mass to achieve diffusion. Additionally, that access is a prerequisite to adoption and that the availability of access varies depending on the type of network are also seen as unique characteristics of networks. Finally, the special role of networks as infrastructure in society will also be an important factor in the study of their diffusion.

4. Cultural Factors and the Diffusion of Interactive Networks

Research on culture and its effects on the diffusion of interactive networks requires a set of well-defined propositions. These propositions should be theoretically based and create a platform for the development of testable hypotheses. The propositions stated below are the result of a survey of diffusion theories which uncovered relationships that may be mediated cultural factors. (Factors relevant for diffusion but not related to culture include price, infrastructure, extent of change agents' efforts, type of innovation decision, etc.) The five propositions given below are merely examples of the many statements that can be made about the relationship between diffusion of interactive networks and culture. The theoretical source and role of culture for each proposition is explained on a case-by-case basis.

Proposition 1: The diffusion rate of an interactive network will be higher in weak uncertainty avoidance cultures.

The theoretical foundation for this proposition is diffusion of innovations theory (Rogers, 1995). The theory has identified five general factors used to explain the rate of adoption. One of the five factors is 'perceived attributes of the innovation.' Under this factor, there is an attribute labeled 'compatibility.' Compatibility in general is defined as the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters. Hence, three variables have been identified: value compatibility, compatibility with previously introduced ideas, and compatibility with needs. The focus here is on 'value compatibility.' The theory predicts innovations compatible with local values, which increases the overall number of positive attributes of an innovation, will be adopted more quickly.

In cultures with weak uncertainty avoidance, values include a tolerance for deviance and innovative ideas. What is different is seen as curious, as opposed to dangerous. Therefore, in cultures with low uncertainty avoidance, all innovations, not just interactive networks, will be looked upon more favorably than in cultures with high uncertainty avoidance.

Research derived from this proposition will broaden the scope of traditional diffusion research and may also serve to clarify the compatibility construct. Problems with the compatibility construct, and its connection to culture, were first introduced by Katz (1963). Three general problems were identified. The first was finding ways to characterize cultures in terms of their values. This problem has been addressed by the Hofstede cultural dimensions. The second problem identified by Katz was deciding which elements of a culture are to be regarded as prominent in relation to the compatibility of a particular innovation with the adopting culture. Here an examination of the objective qualities of the innovation -- an interactive network -- has been made and was subsequently used to inform the choice of which cultural characteristics are relevant. The results are the topics of the propositions presented in this section. The third problem stated by Katz is that of specifying the concept of compatibility more clearly.

Specifying the concept of compatibility more clearly is most easily accomplished through careful research on the topic. Value compatibility, although theoretically important, is often overlooked in diffusion research due to problems of measurement. Rogers reflects "Past diffusion research suggests that compatibility may be relatively less important in predicting rate of adoption than relative advantage. This finding may be in part an artifact of difficulties in measuring compatibility." (Rogers, 1995, p. 234)

Although problems with measurement certainly stem from having to collect information about values from individuals, it also comes from a lack of clarity about the construct itself. In an example meant to demonstrate *value* compatibility, Rogers (1995) shows the difficulty of defining the construct. The example describes how software designed in a culture with a number system

that uses a period as the decimal-place-holder may be incompatible in a culture in which the number system decimal-place-holder is a comma (US $9,999.00 as opposed to FF 9.999,00). Rogers sites this example as a "cultural incompatibility." Cultural incompatibility is too broad. The symbols of a culture and the values of a culture are two distinct things, and incompatibility of symbols should not be confused with an incompatibility of values. Instead, incompatibility of symbols should be considered under other areas of diffusion of innovations theory such as differences in social systems or as an incompatibility with previously introduced ideas.

This confusion between "value compatibility" and "practical compatibility" is widespread. In a meta-analysis, 10 of 13 studies found positive relationships between compatibility and adoption. However, some studies measured practical compatibility, some measured value compatibility and others measured a combination of the two. This lack of clarity prevents researchers from identifying which aspect of compatibility is most powerful in terms of prediction and prevents the establishment of the independence of these two variables (Tornatzky and Klein, 1982). Therefore, research that integrates cultural variables into diffusion of innovation theory will hopefully serve to clarify constructs already present in the theory but that have been paid too little attention.

Proposition 2: The diffusion rate of an interactive network whose adoption confers status on an individual will be affected by a nation's score on the power distance dimension.

The theoretical basis for this proposition is also derived from the 'perceived attributes of the innovation' factor from diffusion of innovations theory. Included under this factor, along with 'compatibility' is an attribute labeled 'relative advantage.' Within the 'relative advantage' attribute, a variable shown to affect adoption is social prestige. Although price is the strongest of the relative advantage variables, the social prestige adoption brings may outweigh price in some circumstances. Communication technologies, particularly cellular phones, are seen as status symbols and therefore social prestige may be a good predictor of adoption of these technologies.

As previously discussed, the 'power distance' national cultural dimension as presented by Hofstede describes a culture's acceptance of status symbols. In high power distance cultures status symbols are accepted. The social prestige adoption of an innovation provides can increase a potential adopter's perceived relative advantage for that innovation. Perceived relative advantage is one of the most powerful predictors of innovation adoption. Thus, in cultures where status symbols are accepted, communication technologies will have increased perceived relative advantage and are therefore more likely to be adopted.

Once again, research derived from the above proposition will serve to strengthen diffusion of innovations theory. Social approval as a predictor of adoption has been undervalued in diffusion research, mostly because subjects are unlikely to report adoption of a new technology based on reasons such as the prestige it brings. Questions which are unlikely to be answered honestly are unlikely to be asked. Tornatzky and Klein (1982) found that of 75 innovation attribute studies only 8 cited social approval as an innovation attribute relevant to adoption behavior. Rogers laments that "Improved measurement approaches are needed to investigate different motivations for adopting an innovation, particularly such non-economic factors as status conferral." (Rogers, 1995, p.214)

Proposition 3: Diffusion of interactive networks will be more rapid in countries with higher levels of gender equality.

Diffusion of innovations theory will also serve as the theoretical base for this proposition. The theory identifies five factors that affect the rate of adoption. In addition to the 'perceived attributes of the innovation' factor, there is also a 'nature of the social system' factor. This factor recognizes the roles social norms play in the diffusion of an innovation and that norms can operate at the level of a small community or throughout a nation. Norms are of course an important component of culture.

If gender equality is considered a societal norm, diffusion of innovation theory connects this norm with the rate at which an innovation diffuses. As discussed previously, while studying innovativeness of nations, Herbig (1994) proposed that nations with higher gender equality will be more innovative simply because they are tapping the potential of a larger percentage of their population. If this proposition is extended beyond merely a country's innovativeness, but also to the diffusion of technologies through a society, interesting questions are raised.

Consider, for example, the diffusion of the Internet. Although use of the Internet is becoming more equal between the sexes in the United States, globally use is most likely a male dominated activity. This predominance of male users creates a situation in which gender equality could be a strong explanatory variable of differences in diffusion rates among developed countries. It may be the case that the percentage of male users from the national population is constant across countries and that the difference in Internet access across countries is a result of access by women.

Proposition 4: Diffusion of interactive networks will be higher in high power distance countries.

The theoretical underpinnings of this proposition come from critical mass theory (Markus, 1990). Although the concept of critical mass comes from nuclear fission and social movements, Markus' detailed application of the

concept to the diffusion of interactive media was an important step in bringing diffusion theory in line with the particular characteristics of interactive media. Rogers goes so far as to say that diffusion of innovations theory must be adjusted when applying the theory to networks.

In both economists' (Allen, 1988; Antonelli, 1989) and the sociologists' (Markus, 1990; Rogers, 1995) analyses of the role of critical mass in the diffusion process, the focus is on the interactive nature of the innovation, the give-and-take that occurs between new adopters and existing subscribers. Markus refers to this as reciprocal interdependence. Markus' application of reciprocal interdependence to interactive networks explains the value creation process in network diffusion. With stand-alone innovations, time allows for sequential interdependence, where early adopters influence late adopters. But with interactive networks adoption decisions depend on both existing and new users and this process results in diffusion patterns which are different from those of stand-alone innovations. Rogers describes the difference between interactive and non-interactive innovations as a built-in "forcing quality" in the adopter-to-decider relationship, which stems from the reciprocal interdependence of interactive innovations (Rogers, 1995).

In addition to providing parsimony to the discussion of critical mass, Markus' critical mass theory also makes important connections between diffusion of interactive technologies and the communities in which they diffuse. Community characteristics hypothesized to positively affect diffusion are its willingness and ability to supply equipment and services for members, social network density or community task interdependence, centralization, and geographic dispersion.

In centralized communities resources will be available from a single point, increasing the need for communication. Decentralization reduces this need. Critical mass theory suggests that centralization of communities increases the likelihood of achieving universal access for a communication technology. Hofstede states that one of the characteristics of high power distance nations is that centralization is popular. Hence, for cultures with strong power distance characteristics diffusion of interactive networks will be greater.

Proposition 5: Cultures low in ethnocentrism will begin diffusion of interactive networks before ethnocentric cultures.

This effect is theoretically derived from diffusion theory which categorizes individuals into adopter categories. The characteristics of particular categories of adopters are useful in targeting populations for adoption campaigns. In terms of their communication behaviors, Rogers (1995) finds early adopters of communication technologies as being more cosmopolite than later adopters. Cosmopoliteness is the degree to which an individual is oriented outside the social system. Early adopters are also more directly in communication with

scientific and technical sources of information about the new communication technologies.

Ethnocentricism, as previously discussed, is the belief that one's culture is superior to all others. Its implications for diffusion of interactive networks is that ethnocentric nations are less likely to absorb technologies developed in other cultures. Also, ethnocentric societies, through their lack of interest in other cultures, are less likely to be multilingual and because of this will further isolate themselves from developments in other parts of the world. Therefore, societies low in ethnocentrism will be more open to the ideas of other cultures and are more likely to have citizens who fit the profile of early adopter ideal type. The higher occurrence of early adopters in a society will lead to an earlier adoption than in societies where early adopters are a rare breed. Research based on this proposition will have to take into account the country where the technology was developed. If an ethnocentric nation itself develops a technology the direction of this proposition will change.

5. Conclusions

The propositions listed above are only a small subset of a large number of statements that express the relationship between diffusion of interactive networks and culture. In previous studies a wide range of variables have been attributed to the rapid global diffusion interactive networks and, in particular, of the Internet. To explain differences in rates of diffusion among countries, variables related to economic strength are most often cited. Occasionally, culture is mentioned as a variable but is not usually accompanied by a systematic analysis. One reason for the lack of systematic analysis where culture is concerned is that theories of network diffusion do not make explicit the relationship between variables affecting diffusion and dimensions of culture.

This paper presents a set of propositions developed from theories of interactive network diffusion in conjunction with quantified measures of national cultural dimensions. This is merely the first step toward research that is able to quantify the impact cultural variables have on network diffusion. However, it hoped that from this point researchers investigating diffusion of networks will include among the economic and policy variables, an additional set of variables that reflect cultural differences among nations.

Through such research the role culture plays in diffusion of technologies in general will be clarified. Once relationships between cultural variables and diffusion processes are more accurately defined, the relationship between culture and other aspects of interactive networks, such as use and their effects on society, can also be investigated. It is highly likely that cultural variables affecting diffusion of networks will also play an important role in further research on interactive networks.

References

1996: Who's winning the cyberspace race? *Geographical Magazine, 68*(11), 22.

Allen, D.: 1988, New telecommunication services: Network externalities and critical mass, *Telecommunications Policy, 12*(3), 257-271.

Antonelli, C.: 1989, The diffusion of information technology and the demand for telecommunications Services, *Telecommunications Policy, 13*(9), 255-264.

Caron, A. H., Giroux, L., and Douzou, S.: 1989, Uses and impacts of home computers in Canada: A process of reappropriation, *in* J. L. Salvaggio and J. Bryant (eds), *Media Use in the Information Age: Emerging Patterns of Adoption and Consumer Use*, Erlbaum, Hillsdale, NJ, pp. 147-162.

Cronin, M. J.: 1996, *Global Advantage on the Internet: From Corporate Connectivity to International Competitiveness*, Van Nostrand Reinhold, New York.

Cunningham, C.: 1995, Europe not ready for multimedia. *Computerworld, 29,* 76.

Dutton, W. H., Rogers, E. M., and Jun, S.-H.: 1987, Diffusion and social impacts of personal computers, *Communication Research, 14*(2), 219-250.

Fullerton, H. S.: 1989, Rejoinder: Microeconomic theory and critical mass, *Telecommunications Policy, 13*(2), 167-169.

Geertz, C.: 1973, *The Interpretation of Cultures*, Basic Books, Inc., New York.

Goodman, S. E., Press, L. I., Ruth, S. R., and Rutkowski, A. M.: 1994, The global diffusion of the Internet: Patterns and problems, *Communications of the ACM, 37*(8), 27-31.

Hadden, S. G., and Lenert, E.: 1995, Telecommunications networks are not VCRs: The public nature of new information technologies for universal service, *Media, Culture and Society, 17*(1), 121.

Hahne, B.: 1997, State of the Japanese Internet 1997: Such distance traveled, so far to go, ***http://ifrm.glocom.ac.jp/doc/hahne.html***.

Hall, E. T., and Hall, M. R.: 1987, *Hidden Differences: Doing Business with the Japanese*, Anchor Press/Doubleday, Garden City, NY.

Herbig, P. A.: 1994, *The Innovation Matrix: Culture and Structure Prerequisites to Innovation*, Quorum Books, Westport, CT.

Hofstede, G.: 1980, *Culture's Consequences: International Differences in Work-Related Values*. London: Sage Publications.

Hofstede, G.: 1991, *Cultures and Organizations: Software of the Mind* (2nd edn), McGraw-Hill, New York.

Katz, E.: 1963, *The Characteristics of Innovations and the Concept of Compatibility.* Paper presented at the Rehovoth Conference on Comprehensive Planning of Agriculture in Developing Countries, Rehovoth, Israel, August 19-29.

Latane, B., and Bourgeois, M. J.: 1996, Experimental evidence for dynamic social impact: The emergence of subcultures in electronic groups, *Journal of Communication, 46*(4), 35-47.

Lin, N., and Zaltman, G.: 1973, Dimensions of innovations, *in* G. Zaltman (ed.), *Processes and Phenomena of Social Change,* John Wiley and Sons, Inc.

Markus, M. L.: 1990, Toward a "critical mass" theory of interactive media, *in* J. Fulk and C. Steinfield (eds), *Organizations and Communication Technology,* Sage, Newbury Park, CA.

Paltridge, S.: 1996, How competition helps the Internet, *The OECD Observer, August/September*(201), 25-27.

Persell, C. H.: 1984, *Understanding Society: An Introduction to Sociology*. New York: Harper and Row Publishers.

Rogers, E. M.: 1995, *Diffusion of Innovations* (4th ed.), The Free Press, New York.

Roger, E. M.: 1986, *Communication Technology*, The Free Press, New York.

Rosman, A., and Rubel, P. G.: 1995, *The Tapestry of Culture: An Introduction to Cultural Anthropology* (5th ed.), McGraw-Hill, Inc, New York.

Smith, P. B., Dugan, S., and Trompenaars, F.: 1996, National culture and the values of organizational employees, *Journal of Cross-Cultural Psychology, 27*(2), 231-264.

Sondergaard, M.: 1994, Research note: Hofstede's consequences: A study of reviews, citations and replications, *Organization Studies,* 15 (3), 447-456.

Teboul, J. B., Chen, L., and Fritz, L. M.: 1994, Intercultural organizational communication research in multinational organizations, *in* R. L. Wiseman and R. Shuter (eds), *Communicating in Multinational Organizations*, Sage Publications, Thousand Oaks, pp. 12-29.

Tornatzky, L. G., and Klein, K. J.: 1982, Innovation characteristics and innovation adoption implementation: A meta-analysis of findings, *IEEE Transactions on Engineering Management, 29*(1), 28-44.

UNDP: 1996, *Human Development Report 1996*, August 19-29, United Nations Development Program (UNDP), New York.

Varian, H. R.: 1992, *Microeconomic Analysis* (2nd ed.), W. W. Norton and Company, New York.

PART 7

CULTURE AND COMMUNICATION IN ORGANIZATIONS

WHY BUSINESS PEOPLE USE THE WORLD WIDE WEB

An Application Of Uses And Gratifications Theory

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Abstract. This survey study examines psychological and functional uses
of the World Wide Web among US and Mexican business communi-
cators. It applies uses and gratifications theory, which addresses the
attitudes and behaviors that have been identified with television viewing
motives, to new communication technologies. A total of 71 business
communicators and students were asked how and why they used the Web,
their attitudes toward it, and how their use of other media had changed
since they started using the Web. Results indicate that the Web performs
some functions similar to traditional media, and that U.S. and Mexican
business communicators use the Web for news, business, and education.
Both Mexican and U.S. users apparently are motivated to access the Web
to pass time or out of habit, for arousal, to escape, to relax, and for social
interaction. Study results indicate that the Web is not supplanting use of
other media, but that some Web users tend to rely less on printed forms of
communication such as magazines and newspapers, and that they read
less for pleasure. The concept of flow is proposed as potentially useful for
future research.

As the adoption of computer technology continues to increase in commerce,
business, education, public venues, and home spaces, both academic and
commercial researchers are recognizing the importance of understanding the
nature of computer-mediated communication (CMC) and the ways in which it is
used. The World Wide Web, in particular, is attracting attention, and scholars
are beginning to question how and why people use it. As the technology is
adopted in developing countries, serious questions also arise about the nature of
Web use across cultures. The purpose of this paper is to address both issues.

Internet technology has drawn keen interest from communication scholars
for years (e.g., Eisenberg and Monge, 1983; McLaughlin, Osborne and Smith,
1995; Rice, 1989; Schmitz and Fulk, 1991), but relatively little work has

focused specifically on the more recently developed, specialized portion of the Internet known as the World Wide Web. Studies in CMC traditionally have explored the uses, effects, and social constructions of text-based messaging (e.g., Garton and Wellman, 1995; Lea, O'Shea, Fung, and Spears, 1992; McCormick and McCormick, 1992; O'Sullivan, 1995; Rafaeli, Sudweeks, Konstan, and Mabry, 1994; Schaefermeyer and Sewell, Jr., 1988; Schmitz and Fulk, 1991; Sproull and Kiesler, 1986; Sudweeks and Rafaeli, 1995; Thompsen and Foulger, 1993; Witmer, 1998; Witmer and Katzman, 1998; Yates and Orlikowski, 1993), real-time, text-based chatting and role-playing domains (e.g., Batterson, 1994; Bruckman, 1993; Reid, 1991; Rheingold, 1993), and groupware (e.g., Lea and Spears, 1991; Poole and DeSanctis, 1989). This survey study focuses on Web use, and asks what motivates people to use the Web, both in the United States and in Mexico. Because the Web is used extensively for business and commerce, it targets a population of business communicators.

Theoretical Background

The adoption of the Web for business and commerce has spurred some preliminary studies that specifically address the Web as a new communication medium. One line of research applies Csikszentmihalyi's concept of "flow" (Csikszentmihalyi, 1975, 1990; Csikszentmihalyi and Selega-Csikszentmihalyi, 1989) to Web use for commercial purposes. Flow is broadly defined as an "optimal experience" (Csikszentmihalyi, 1990; Csikszentmihalyi and LeFevre, 1989) that maximizes perceptions of control, cognitive enjoyment, and absorption in an interaction. A number of scholars consider flow a useful construct for exploring human interactions with computers (e.g., Csikszentmihalyi 1990; Ghani, Supnick and Rooney 1991; Trevino and Webster 1992; Webster, Trevino, and Ryan 1993). Hoffman and Novak (1995) assert that Web users become deeply engaged in Web sites when a state of flow is reached, and propose a many-to-many model of communication for the Web that overturns traditional principles of mass media advertising and marketing. They articulate a phenomenon that practitioners have observed since the inception of the Web: public relations, marketing, and advertising efforts cannot target Web users as passive mass audiences. Rather, practitioners must consider the Web as a many-to-many medium that is populated by individual users who interactively engage in the communication process.

A second line of research applies uses and gratifications theory, which addresses the attitudes and behaviors that have been identified with television viewing motives, to new communication technologies. Uses and gratifications theory is widely used in mass media studies (e.g., Tan, 1985), and has been advanced for several decades. As early as 1940s, researchers studied why people engage in various from of mass communication behavior such as

listening to radio, or reading newspapers and books. Herzog (1944) found three types of gratifications--emotional release, wishful thinking, and obtaining advice--to be associated with listening to radio soap operas. Lasswell (1948) proposed four functions of the mass communication media: surveillance, correlation, entertainment, and socialization. Similarly, McLeod and Becker (1974) found seven dimensions, which they called surveillance, excitement, reinforcement, guidance, anticipated communication, relaxation, and alienation. Davison (1959) pointed out that the communicator's audience is not a passive recipient. Rather, the audience demands something from the communications to which they are exposed, and chooses only those communications that offer some benefit.

A number of later studies investigate the uses and gratifications of traditional media such as television, radio, and print. McQuail, Blumler, and Brown (1972) assert that traditional mass media perform four functions: surveillance, diversion, personal identity and social integration. People gather information about environment through mass media, and escape from the constraints and stress of their daily lives. Individuals find emotional release, tools for reference, support for ideas, behavioral guidance, reality exploration, and value reinforcement through media use. They use the media as substitutes for companionship, and to gather information for use in social relationships .

Greenberg (1972) identifies motives for and gratifications of television viewing among young students in England. He believes that the motives for television viewing among pre- and post-adolescent children could form an adult pattern of gratifications, and defines seven motivational variables:

1. *To pass time*. Children watch television when they're bored, when they have nothing better to do, because it passes the time, or because it gives them something to do.
2. *To forget.* Children watch television to forget school and homework problems, and to get away from the rest of the family or current tasks.
3. *To learn.* Children watch television to learn things that happen in the real world, how to do new things, to get ideas, and to learn things they don't learn in school.
4. *Arousal.* Children watch television because it's thrilling, or it excites them.
5. *Relaxation.* Children watch television because it relaxes them, calms them down when they're in a temper, provides a pleasant rest, and because they are not required to do anything when watching.
6. *Companionship.* Children watch television because it approximates a human friend, they don't want to be alone, when there is no one to talk or play with, and because it makes them feel less lonely.
7. *Habit.* Children watch television because it's a habit or because they just like to watch.

Greenberg (1972) reports the major reasons that 15-year-olds children watch television are for learning, for arousal, and for companionship. For 12-year-olds, he identifies learning, arousal, to forget, and habit as the major motivators. For 9-year-olds, the factors of learning, to forget, and relaxation were found.

Other studies also have examined motivations for using mass media. Katz, Gurevitch, and Hass (1973) identify in the literature 35 human needs on the social and psychological functions of the mass media. They suggest that media-related needs of individuals can be classified into five categories:

1. Cognitive needs are relevant to the seeking of information, knowledge and understanding of environment. They are based on the individual's desire to understand and control the environment and satisfy the person's curiosity and exploratory drives.
2. Affective needs drive people to strengthen aesthetic, pleasurable emotional experiences. Mass media are widely used for the pursuit of pleasure and entertainment.
3. Personal integrative needs are influenced by a desire for self-esteem, and motivate individuals to seek confidence, credibility, and status.
4. Social integrative needs are based on an individual's desire for affiliation, motivate people to seek contact with friends and the world.
5. Escapist needs or tension release needs are relevant to the desire to escape, relieve tension or boredom, and seek diversion.

Rubin (1983) enumerates five television viewing motivations that are similar to those of Katz, Gurevitch, and Hass, and that provide a foundation for our study: 1) to pass time/habit, 2) for information, 3) for entertainment, 4) for companionship, and 5) for escape.

Researchers interested in studying the theory of uses and gratifications speculate that new media will expand audience motivations. Some scholars consider the Web a hybrid medium that crosses computers and television (e.g., (Berniker, 1995; Newhagen and Rafaeli, 1996), and a number of contemporary studies have tested the transferability of uses and gratifications theory from television to a variety of new communication technologies (e.g., Lin, 1993; Perse and Ferguson, 1992; Rubin and Bantz, 1989; Walker and Bellamy 1989; Walker, Bellamy and Truadt, 1992; Williams, Phillips, and Lum, 1985).

Jeffres and Atkin (1996) propose a new grid of communication that includes the three technologies of television, telephone and computer, which may invoke different patterns of uses or needs than those associated with traditional communication. Jeffres and Atkin indicate that emerging modes of communication will allow audiences to use a wider range of communication types than those originally envisioned. The role of audiences as passive message receivers in traditional media has been changed to a role of active message senders. Audiences are capable of communicating through the new media, a concept that Hoffman and Novak (1995) have applied to the Web in a many-to-many communication model.

The Internet and Web as new media for communication may satisfy basic individual needs in the same way that traditional forms of media do. However, communication through the Web has several characteristics that distinguish it from the traditional media. For example, it provides interactivity (Rafaeli, 1988), hypertexuality, multimedia, and synchronicity (Morris and Ogan, 1996). Thus, the unique characteristics of the Web may also evoke different motives for using it than for those that prompt traditional media use, as Jeffres and Atkin (1996) suggest. To explore this possibility, our survey study asks student and professional business communicators in the U.S. and Mexico why and how they use the Web, and examines both the functional and the psychological reasons for Web use.

Research Questions

FUNCTIONAL USES OF THE WEB

Fawcett (1996) asserts that people are logging onto the Internet for information, communication, and research, rather than for entertainment. Respondents to his questionnaire who had used the Web or Internet within six months of the survey reported that they accessed the Web and Internet primarily for gathering news and information (82.0%), to use e-mail (80.5%), to conduct research (61.1%), visit Web sites (66.9%), post to bulletin boards (39.3%), join real-time chat rooms (25.3%), play games (23.8%) and shop (14.9%). They also utilized the Web and Internet as alternatives to traditional library research for consumer product information, or to prepare work for school or business. Our study extends the question of Web use to an international audience of student and professional business communicators. Of particular interest is how business communicators in a developing country, specifically Mexico, use the Web in comparison to those in the United States. Our first two research questions, therefore are:

RQ1:   What are the major functional uses of the Web for business communicators?
RQ2:   Are the functional uses of the Web by business communicators in Mexico different than those of business communicators in the United States?

MOTIVATIONS FOR USING THE WEB

Gollin, (1994), in a review of the literature that spans from 1945 to 1987, reports that studies applying uses and gratifications theory yield reliable results through time and across all forms of media. Rubin's (1981, 1983) research on television provides both a useful framework and a method for investigating the application of uses and gratifications theory to the World Wide Web. Our study builds on his and Kaye's (in press) work and asks:

RQ3:   What are the motivations for using the Web among business communicators?

RQ4:   Are the motivations for using the Web by business communicators in Mexico different than those of business communicators in the United States?

ATTITUDES TOWARD THE WEB AND THE RELATIONSHIP BETWEEN WEB USE AND USE OTHER MEDIA

Rubin's (1981, 1983) work examines the relationships between television viewing motivations, amount of viewing, affinity toward television, and perceived reality of programming content. Kaye's (in press) research investigates similar associations between Web use motivations, amount of time spent on the Web, affinity, perceived reality of Web content, and ease of use. Our study extends these efforts, and asks:

RQ5:   What are the relationships between business communicators' World Wide Web use motivations, and Web affinity, perceived reality and ease of use?

RQ6:   Are the relationships between World Wide Web use motivations, and Web affinity, perceived reality and ease of use different for Mexican business communicators than for U.S. business communicators?

RQ7:   What are the relationships between business communicators' World Wide Web use and their use of other media?

RQ8:   Are the relationships between business communicators' World Wide Web use and use of other media different for Mexican business communicators than for U.S. business

Method

INSTRUMENTATION

To answer the research questions, we used a modified version of Kaye's (in press) questionnaire, which drew on Rubin's 30 reasons for watching television, and asked respondents about their motivations for using and attitudes toward the Web, as well as their use of both the Web and of other media. We added the following definitions of the World Wide Web and what constituted Web use at the beginning of the questionnaire to prevent potential misunderstandings by novice users:

> For purposes of this questionnaire, the World Wide Web is defined as any hypertext documents or activities you enter through a World Wide Web browser (Examples: Microsoft Explorer or Netscape Navigator), including such things as on-line publications, Web-based e-mail, chat rooms, video and audio streams, and Web-based games. As you answer the following questions, you **should keep in mind everything you access through any Web browsers**, including those offered through commercial service providers (Examples: CompuServe

Information Systems or America Online). You **should not include non-Web-based activities** (Examples: "chats" through such systems as Unix "talk," Internet Relay Chat, or CompuServe forums; e-mail messages sent or received through such applications as Elm, Eudora, Microsoft Exchange, Pine, or POPMail; interactive role-playing activities such as MUDs, MOOs, or MUSHes).

Functional uses of the Web

We asked two nominal questions to determine respondents' functional uses of the Web. Respondents ranked their three favorite types of sites in a categorical listing, as well as which types of sites they accessed most often. Open-ended questions also asked respondents about their functional uses of the Web.

Motivations for using the Web

To identify respondents' motivations for using the World Wide Web, we utilized Kaye's (in press) index,[1] which drew on Rubin's (1981, 1983) 30 reasons for watching television, but reworded Rubin's response items to refer to the World Wide Web rather than TV. Our questionnaire used five response options, which allowed respondents to indicate their level of agreement with each item by checking boxes that corresponded with the following: 1) Strongly Agree (SA); 2) Agree (A); 3) Neutral (N); 4) Disagree (DA); 5) Strongly Disagree (SD). In addition, our questionnaire, like Kaye's, included an open-ended item that asked respondents to state their main reasons for accessing the Web.

Attitudes toward the Web

Kaye's (in press) instrument adapted Rubin's (1983) two summated indexes to measure the relative importance of the Web in users' lives (affinity), and perceived realism of Web content. Kaye's instrument also included a third summated index that probed respondents' perceived ease of using the Web. We utilized all three indexes in our questionnaire.

Use of the Web and other media

Our instrument used Kaye's (in press) response items to ask respondents the average number of hours they used the Web and their levels of experience, in terms of both the number of times they had accessed the Web and the number of hours per week they typically spent on it. Respondents also were asked to indicate the extent to which their use of various communication technologies had changed since they started using the Web, how they navigated the Web, and the types of communication technologies they currently owned.

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[1] We follow DeVellis's (1991) distinction between a scale and an index, where a scale measures an" underlying construct," and an index measures "'cause indicators,' or items that determine the level of a construct (p. 9).

SAMPLE

Because our research questions concerned perceptions of business communicators in the United States and Mexico, our sample population was limited to individuals readily identifiable as being involved in some aspect of business communication or public relations. We thus focused on participants in professional workshops or meetings of professional associations. The questionnaires were distributed to three groups of people in four separate venues: 1) a meeting of the Public Relations Student Society of America (PRSSA) at a western university; 2) a meeting of the Public Relations Society of America in the western United States; 3) a workshop in Mexico City, D.F., Mexico on public relations technology that was conducted in English, and that focused on using the Internet and Web; and 4) a workshop in Celaya, Guanajuato, Mexico on public relations technology that was conducted in English, and that focused on using the Internet and Web. In all data collection, we asked that only adults over the age of 18 years old participate, ensured that all responses were anonymous, and offered a report of our findings.

DATA ANALYSIS

Functional uses of the Web
We used descriptive statistics to examine the demographic composition of the sample group and functional uses of the Web. We also used chi-square tests to determine if observed differences between groups for functional uses were significant.

Motivations for using the Web
 A confirmatory principal components factor analysis with varimax rotation was used on the 30 response items that addressed motivations for using the Web. The purpose of the factor analysis was to determine the extent to which our instrument yielded similar factors to those that Kaye (in press) identified. We also used alpha coefficients to verify internal reliability for each of the identified factors. We then utilized the regression approach to estimate factor scores, which yields the highest correlations between factors and factor scores (Tabachnick and Fidell, 1989). The reduced data were used as dependent variables in a Multivariate Analysis of Variance (MANOVA) to test, using Wilks' lambda criterion, for differences between U.S. and Mexican business communicators in motivations for using the Web.

Attitudes toward the Web
The indices for affinity, reality, and ease of use were measured for reliability, using alpha coefficients, and after adjusting for the reverse polarity of five of the response items. We then used MANOVAs with Wilks' lambda criterion to test for differences between U.S. and Mexican business communicators.

Use of the Web and other media
Correlation analyses were used to examine the relationships between the five identified motivations for using the Web and the recency or frequency of their Web use, and between users' affinity for the Web and the recency or frequency of their Web use. We also used a correlation analysis to determine if there were any significant relationships between respondents' perceived ease of use and the recency or frequency of their Web access, and a chi-square statistic to test for differences between the Mexican and U.S. groups.

Results

A total of 71 people participated in the study: 21 Mexican nationals, 30 U.S. public relations professionals (PRSA), and 20 U.S. student practitioners (PRSSA). All participants were at least 18 years old. Of the 65 individuals who indicated age, most (78.8%) were between the ages of 18 and 34, with the average age under 30. This is a younger age range than recent Web-based studies report (see, for example, Georgia Tech Research Corporation, 1997), but was not a surprise, since 75.0% of the student group in our sample was between the ages of 18 and 24.[2]

Of the 65 respondents who indicated gender, 27 (41.5%) were male and 38 (58.5%) were female. Although the ratio of females to males using the Web appears to be increasing (Georgia Tech Research Corporation, 1997), our respondents clearly represented a higher ratio of females to males than the 38.5% reported in GVU's 8th Web Users Survey (Georgia Tech Research Corporation, 1997). This was not unexpected, since both the PRSA and PRSSA groups were predominantly female.

Of the 65 respondents who indicated their level of education and income, 27.3% had completed some college, 48.5% had completed a baccalaureate degree, and 18.2% had completed a master's degree. Most (71.7%) earned less than $50,000 per year. This figure may be suppressed as a result of the relatively low incomes of the student group, 77.7% of whom reported earning less than $20,000 per year.

FUNCTIONAL USES OF THE WEB

The most popular type of Web site among survey participants was news delivery. Of the 64 respondents who indicated their three favorite types of Web sites, 20.3% ranked "News" first, and 48.4% ranked it as one of their top three

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[2] According to GVU's Eighth survey, the average user is 35.7 years old, which is slightly higher than the Seventh survey average of 35.2 years old, and continues the trend of increasing average age. The average age reported in the GVU Survey is within the margin of error reported by FIND/SVP's 1997 American Internet User Survey of 36.5 years old.

favorites. Business sites were ranked first by 25.0% of our respondents, and were among the top three favorites for 42.2% of the sample group. The third most popular type of site among our respondents was educational, which was among the top three favorites for 32.8%, but ranked first among only 4.7%. The open-ended question that probed which types of information respondents found most useful on the Web confirmed the ordinal data, and indicated that 37.0% of our respondents preferred news-related Web sites, and 17.7% accessed business information. The open-ended question that probed which Web sites participants accessed most frequently indicated that the most often visited sites pertained to news (56.5%), entertainment (25.0%), and sports (14.5%).

Although news delivery ranked first in popularity, 42.2% of the respondents indicated that they most frequently accessed the Web for business or professional reasons, and 61.0% ranked business as one of their three primary reasons for accessing the Web. Research (59.4%) and general exploration of Web content (42.2%), ranked second and third, respectively, as being one of the top three reasons for accessing the Web. Keeping up with current events was also cited by 37.5% of the respondents as being among the three primary reasons for using the Web. The open-ended question that probed reasons for accessing the Web indicated that approximately 56.5% of our respondents used the Web primarily for research and for e-mail (26.0%).

We used a chi-square statistic to determine if there were significant differences between the student group, the U.S. business communicators, and the Mexican business communicators in their Web site preferences. First, we ran chi-square statistics to determine if there were significant differences between the U.S. student and professional groups. The results indicated that there was no significant difference between the two groups for any of the three favorite types of Web sites: news (Chi-Square [2, N = 25] = .135, p =.93), business, (Chi-Square [2, N = 20] = 2.17, p =.33), or educational (Chi-Square [2, N = 13] = 1.99, p =.37). Tables 1, 2, and 3 represent the statistical tests for each of the variables.

Table 1. Chi-square for news sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
News sites ranked #1	4	7	11	44.0
News sites ranked #2	4	5	9	36.0
News sites ranked #3	2	3	5	20.0
TOTAL	10	15	25	100.0
Percent	40.0	60.0	100.0	

Chi-Square Value = .13456, df = 2, p = .93493

Table 2. Chi-square for business sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
Business sites ranked #1	1	10	11	55.0
Business sites ranked #2	2	5	7	35.0
Business sites ranked #3	1	1	2	10.0
TOTAL	4	16	20	100.0
Percent	20.0	80.0	100.0	

Chi-Square Value = 2.16574, df = 2, p = .33862

Table 3. Chi-square for educational sites as among top three favorites of students (PRSSA) and professionals (PRSA)

	PRSSA	PRSA	TOTAL	Percent
Educational sites ranked #1	2	1	3	23.1
Educational sites ranked #2	4	2	6	46.2
Educational sites ranked #3	1	3	4	30.8
TOTAL	7	6	13	100.0
Percent	53.8	46.2	100.0	

Chi-Square Value = 1.98889, df = 2, p = .36993

We then combined the data for the student and professional U.S. groups, and ran chi-square statistics to determine if the Mexican group favored different Web sites than the combined U.S. groups.

Descriptive statistics indicated that both Mexican and U.S. business communicators favored news, business, and educational Web sites, but the rankings were reversed in the two groups. In the United States group, 50.0% ranked news sites in the top three, 40.0% favored business sites, and 26.0% preferred educational sites. In contrast, the 42.9% of the Mexican group preferred educational Web sites, 38.1% favored business sites, and 33.3% listed news sites in the top three. To determine if these differences were statistically significant, we ran chi-square tests. The statistical analysis indicated the differences between groups were not significant for the rankings of the three types of Web sites: news (Chi-Square [2, N = 32] = .59, p =.75), business, (Chi-Square [2, N = 28] = 1.41, p =.49), or educational (Chi-Square [2, N = 22] = 3.94, p =.14). Tables 4, 5, and 6 represent the statistical tests for each of the variables.

Table 4. Chi-square for news sites as among top three favorites of Mexican and US business communicators

	Mexican	U.S.	TOTAL	Percent
News sites ranked #1	2	11	13	40.6
News sites ranked #2	3	9	12	37.5
News sites ranked #3	2	5	7	21.9
TOTAL	7	25	32	100.0
Percent	21.9	78.1	100.0	

Chi-Square Value = .58635, df = 2, p = .74589

Table 5. Chi-square for business sites as among top three favorites of Mexican and U.S. business communicators

	Mexican	U.S.	TOTAL	Percent
Business sites ranked #1	5	11	16	57.1
Business sites ranked #2	3	7	10	35.7
Business sites ranked #3	0	2	2	7.1
TOTAL	8	20	28	100.0
Percent	28.6	71.4	100.0	

Chi-Square Value = 1.41105, df = 2, p = .49385

Table 6. Chi-square for educational sites as among top three favorites of Mexican and U.S. business communicators

	Mexican	U.S.	TOTAL	Percent
Educational sites ranked #1	0	3	3	13.6
Educational sites ranked #2	4	6	10	45.5
Educational sites ranked #3	5	4	9	40.9
TOTAL	9	13	22	100.0
Percent	40.9	59.1	100.0	

Chi-Square Value = 3.94160, df = 2, p = .13935

MOTIVATIONS FOR USING THE WEB

To determine the reliability of the survey instrument in identifying the factors described by Kaye (in press), we ran a confirmatory principal components factor analysis with varimax rotation on the 30 response items that addressed motivations for using the Web. An eight-factor solution with eigenvalues of at least one accounted for 74.2% of the variance. Six variables did not load on any factor and were discarded from further analysis. Another two variables loaded on two factors, and also were discarded. One factor had no variables that loaded at a minimum of .50, and another two factors had only one variable. The remaining five factors corresponded most closely with six of Greenberg's (1972) five motivations for television viewing among children than with Ruben's. Greenberg's motivations for media use were: (i) to pass the time, (ii) for arousal, (iii) to forget, (iv) for relaxation, (v) for social interaction, and (vi) out of habit. Most of the variables that addressed Greenberg's motivation of learning did not meet the criteria for factor loadings, and habit loaded with the factor of passing time, similar to Rubin's motivations. See Table 7 for the factor matrix of motivations for using the World Wide Web.

Internal reliability for each of the indices that resulted from the factor analysis was acceptable: to pass the time, alpha = .89; for arousal, .78; to forget, .81; for relaxation, .72; and for social interaction, .73. Thus, we accepted the factor for social interaction, because although it included only two variables, those variables were highly correlated with each other and did not correlate with other variables (Tabachnick and Fidell, 1989).

Factor scores for each of the five factors were estimated using the regression approach. We then performed a Multivariate Analysis of Variance (MANOVA), using Wilks' lambda criterion, with the U.S. PRSA and PRSSA groups being the independent variables, and the five motivation factors being the dependent variables. Since there were no significant differences between the two groups at the 95% confidence level ($F[5,34] = .30$, $p = .907$, $\eta^2 = .04$), we combined them for a comparison of U.S. and Mexican groups. A MANOVA on the five motivation factors as dependent variables with the U.S. and Mexican groups as independent variables indicated no significant differences at the 95% confidence level between the two groups in their motivations for using the Web ($F[5,51] = 1.68$, $p = .16$, $\eta^2 = .14$), although the univariate statistics indicated that one factor, arousal, approached significance($F[1,55] = 3.37$, $p = .072$, $\eta^2 = .06$). The other nonsignificant factors were: to pass the time ($F[1,55] = .06$, $p = .805$, $\eta^2 = .00$); to forget ($F[1,55] = 2.72$, $p = .105$, $\eta^2 = .05$); for relaxation ($F[1,55] = 1.15$, $p = .288$, $\eta^2 = .02$); and for social interaction ($F[1,55] = .83$, $p = .367$, $\eta^2 = .01$). (See Table 8.)

Table 7. Factor matrix of motivations for using the World Wide Web

Web Use Motivations	Factor 1 Pass Time/ Habit α=.89	Factor 2 Arousal α=.78	Factor 3 Escape (to Forget) α=.81	Factor 4 Relaxation α=.72	Factor 5 Social α=.73
Factor 1: Pass Time/Habit					
Occupy time	.54184				
It's exciting	.55356				
It's a habit	.79440				
It's a pleasant rest	.76535				
When I'm bored	.76645				
It relaxes me	.69711				
It peps me up	.49846*				
Factor 2: Arousal					
It entertains me		.65851			
It's thrilling		.73186			
Learn how to do things		.82314			
Enjoyment		.72245			
Factor 3:Escape					
Forget school or work			.87512		
Get away from what I'm doing			.50400		
Get away from family, etc.			.70284		
Makes me feel less lonely			.50883		
Factor 4: Relaxation					
Allows me to unwind				.76983	
Family and friends also like Web				.75296	
It amuses me				.51481	
Factor 5: Social					
No one else to talk to					.70778
Talk to others about a site accessed					.74951
Variables that did not meet factor loading criteria					

Did not load on any factor:
    Like to access certain sites
    Like to access the Web
    Learn what could happen
    Access a specific site
    Find specific information
    Nothing better to do
Double loaded:
    I don't have to be alone
    It helps me learn about myself and others					

*Rounded to .50

Table 8. Univariate F Tests for Web use motivations by nationality

Indep. Var.	Dep. Variable	F	df	Sig. of F
Nationality (MX and US)	Pass time/Habit	0.06133	1,55	.805
	Arousal	3.37434	1,55	.072
	Escape	2.71663	1,55	.105
	Relaxation	1.15232	1,55	.288
	Socializing	0.82892	1,55	.367

ATTITUDES TOWARD THE WEB.

We tested for reliability of each scale designed to measure affinity toward the Web, perceived reality of the Web, and perceived ease of use. The index for affinity and ease of use were acceptable, with alpha coefficients of .79 and .70, respectively. The index for perceived reality yielded an alpha of .20. Discarding any single item produced no alpha coefficient higher than .29, so the index was discarded from further analysis.

Affinity.
Most of the 68 participants who responded to the questionnaire items that addressed affinity indicated that they could do without the Web (61.8%), would not miss it if they didn't use it (60.6%), and did not prefer using the Web over doing other things (60.3%). Less than one-third (32.4%) indicated that using the Web was one of the most important things they did each day.

   To test for differences in the relative importance of the Web between groups, we ran a MANOVA on the affinity index, which indicated no significant difference between U.S. students and professionals ($F[4,42] = 1.09$, $p = .373$, $\eta^2 = .09$). We therefore combined the two groups for a comparison of Mexican and U.S. Web users, and ran a MANOVA on the affinity index, which indicated a significant difference between the two groups ($F[4,62] = 3.79$, $p = .008$, $\eta^2 = .20$). The univariate tests indicated significant differences at the 95% confidence level on two of the four items: the one that stated, "Using the Web is one of the most important things I do each day" ($F[1,65] = 7.71$, $p = .007$, $\eta^2 = .11$), and the statement that "I would rather use the Web than do anything else" ($F[1,65] = 7.97$, $p = .006$, $\eta^2 = .11$) (see Table 9). More people in the Mexican group (55.5%) perceived the Web as important or very important than did people in the U.S. group (25.0%), and more of the Mexican participants preferred using the Web do doing other things (25.0% compared to 14.6%)

Table 9. Univariate F Tests for Web use affinity by nationality

Indep. Var.	Dep. Variable	F	df	Sig. of F
Nationality (MX and US)	Could do without	0.01024	1,65	.920
	Would not miss Web	0.01990	1,65	.888
	Using Web is important	7.70786	1,65	.007
	Prefer using the Web to anything	7.97143	1,65	.006

Ease of use.
Respondents were divided on their perceptions of the ease in updating news via the Web versus television, with 45% indicating disagreement and 35.2% agreeing with the statement that the Web was easier than TV. However, the bulk of participants considered the Web easy to use. The majority, 84.5%, responded that they usually could find specific information on the Web. The data also indicated that 74.7% of the respondents believed they could find information more quickly on the Web than in the library, 66.2% considered it easy to find information on the Web, and 63.4% considered finding information on the Web easier than by non-electronic sources.

We used MANOVA to test for differences between the U.S. student and professional groups for perceived ease of use. Since there were no significant differences at the 95% confidence level between the two groups ($F[5,37] = 1.38$, $p = 253$, $\eta^2 = .16$), we combined them for a comparison between the Mexican and U.S. groups. Results indicated no significant differences between the U.S. and Mexican business communicators in their perceptions of ease of Web use ($F[5,54] = 1.15$, $p = .346$, $\eta^2 = .10$).

USE OF THE WEB AND OTHER MEDIA

Respondents in this sample used the Web fairly regularly, although most (51.5% reported using the Web five hours per week or less. The majority (68.6%) reported that they had accessed the Web more than 50 times, and 48.6% indicated they had used the Web more than 100 times. A chi-square test indicated no significant difference in Web experience for Mexican users when compared to U.S. users (Chi-Square [5, N = 70] = 4.51, p =.48). Nearly all (94.2%) of the survey participants had accessed the Web within a week of completing the questionnaire, and most (70.0%) had used the Web within 24 hours. Most (70.4%) reported owning at least one computer with a CD ROM, and 28.1% indicated they owned at least one computer without a CD ROM. The majority of our participants owned at least one cellular phone (61.9%) or car phone (15.5%).

A correlation analysis indicated mild relationships at the .05 level of probability between affinity toward the Web and both the frequency and duration of respondents' Web use (see Table 10). A comparison of the correlation matrices for the Mexican and the U.S. groups indicated that all five dimensions of affinity correlated mildly with duration of Web use for U.S. participants, but did not correlate at all for Mexican participants. Similarly, all five dimensions of affinity correlated with frequency of Web use for the U.S. group, but only on two dimensions for the Mexican group (see Table 11).

Table 10. Correlation matrix of affinity toward the Web and frequency, duration, and recency of Web use for all participants

Attitude toward the Web	Recency	Duration	Frequency
Could do without	0.1665	**0.3193****	**0.2988****
Would not miss	0.1610	0.2275	**0.4580*****
Important to do	0.2312	**0.4711*****	**0.3153****
Rather use than anything else	0.1935	**0.3987*****	**0.2962***

* p < .05, ** p .01, *** p .001

Table 11. Correlation matrices of affinity toward the Web and frequency, duration, and recency of Web use for U.S. and Mexican participants

Attitude toward the Web	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Could do without	0.1560	0.1949	**0.5328*****	0.1176	**0.3590***	0.1655
Would not miss	0.0437	**0.4505***	**0.3970****	0.0445	**0.4549*****	**0.4691***
Important to do	**0.4003****	-0.0975	**0.5047*****	0.4254	**0.4292****	0.2529
Rather use than anything else	0.2405	0.1691	**0.3812****	0.3526	**0.3023***	**0.5076****

* p .05, ** p < .01, *** p .001

A correlation analysis indicated a weak relationship at the .05 level of probability between one motivation factor (relaxation) and the average number of hours participants spent on the Web in a week (α = .28, p = .04). None of the other motivation factors (to pass time, arousal, to socialize, and for escape) correlated with frequency, duration, or recency of Web use (see Table 12). Additional correlation analyses for Mexican participants and U.S. participants revealed a slight relationship between the relaxation factor and the average

weekly Web use among Americans ($\alpha = .34$, $p = .04$), but not among Mexican participants (see Table 13).

Table 12. Correlation matrix of motivational factors and frequency, duration, and recency of Web use for all participants.

Factor	Recency	Duration	Frequency
Pass time/Habit	0.1349	0.0679	-0.1059
Arousal	-0.1164	0.2105	0.2228
Escape	-0.0501	-0.1477	-0.0244
Relaxation	0.1137	**0.2752***	0.0717
Socializing	0.1572	-0.2110	0.1311

* $p < .05$

Table 13. Correlation matrices of motivational factors and frequency, duration, and recency of Web use for U.S. and Mexican participants

Factor	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Pass time/habit	0.0669	0.3508	0.0805	0.0635	-0.0481	-0.2871
Arousal	-0.2648	0.1204	0.1999	0.0866	0.2355	0.3205
Escape	-0.1800	0.2877	0.0273	-0.2766	-0.0830	-0.0013
Relaxation	-0.0050	0.3968	**0.3378***	0.1242	0.0617	0.1899
Socializing	0.2052	0.0514	-0.0125	-0.4235	0.2303	-0.1544

* $p < .05$

Perceived ease of finding information on the Web correlated mildly with the average number of hours users spent on the Web ($\alpha = .34$, $p = .01$), but no other dimension for ease of use was related to frequency, duration, or recency of Web use (see Table 14). Additional correlation analyses indicated that a mild relationship ($\alpha = .47$, $p = .05$) existed only between perceived quickness of searching for information on the Web and frequency of Web use for the Mexican participants (see Table 15).

Of the participants who responded to the items that asked about the extent to which their Web use affected their use of other media, 72.7% indicated their television viewing had not changed, and 21.2% indicated it had decreased or greatly decreased. A total of 83.1% respondents indicated their viewing of videotapes had not changed, and most had not changed their radio (72.3%) or stereo listening (75.8%). However, 47.8% of the respondents indicated their library use had decreased or greatly decreased. While the reading habits of most

survey participants remained unchanged (58.2% for magazines, 56.1% for newspapers, and 72.7% for books), some decrease in reading was evident in these data. Magazine reading has decreased or greatly decreased for 23.9% of the respondents; 24.2% report a decrease or great decrease in their newspaper reading; and 19.7% read fewer books for leisure. Movie going has remained unchanged for most (80.3%) respondents (see Table 16).

Table 14. Correlation matrix of perceived ease of use and frequency, duration, and recency of Web use for all participants

Dimension	Recency	Duration	Frequency
Web easier than TV to update news	0.1087	0.2107	0.2410
Relative ease of finding specific info on Web	0.0035	0.1225	0.0204
Easy to find information on Web	0.0118	**0.3366****	0.0686
Quick to search on Web	0.0405	0.1630	0.1183
Web easier than non-electronic sources	-0.0102	0.1425	0.0993

* p < .01

Table 15. Correlation matrices of perceived ease of use and frequency, duration, and recency of Web use for U.S. and Mexican participants

Dimension	Recency (US)	Recency (MX)	Duration (US)	Duration (MX)	Frequency (US)	Frequency (MX)
Web easier than TV to update news	0.0474	0.2727	0.2626	0.1495	0.2521	0.2662
Relative ease of finding specific info on Web	-0.0553	0.1695	0.0020	0.1979	-0.0248	0.1714
Easy to find information on Web	-0.0326	0.1375	0.2049	0.4668	0.0489	0.2427
Quick to search on Web	0.0571	0.0000	0.0571	0.3176	0.0047	**0.4694***
Web easier than non-electronic sources	0.1079	-0.2855	0.1031	0.2138	0.0694	0.2103

* p = .05

Table 16. Relationship of World Wide Web use and use of other media for all survey participants.

Medium Used	Greatly Increased (%)	Increased (%)	Unchanged (%)	Decreased (%)	Greatly Decreased (%)
Television	1.5	4.5	72.7	19.7	1.5
VCR	1.5	3.1	83.1	7.7	4.6
Magazines	6.0	11.9	58.2	22.4	1.5
Newspapers	7.6	12.1	56.1	22.7	1.5
Books (for Leisure)	1.5	18.2	72.7	18.2	1.5
Movies	1.5	12.1	80.3	4.5	1.5
Radio	1.5	16.9	72.3	7.7	1.5
Stereo	1.5	13.6	75.8	9.1	0.0
Library	1.5	14.9	35.8	44.8	3.0

More U.S. respondents (15.0%) reported a decrease in television viewing than did Mexican respondents (11.1%). A chi-square test indicated no significant differences between the Mexican and U.S. business communicators in their use of most media, but did reveal a significant difference between the two groups in the relationship between Web use and television watching (Chi-Square [4, N = 66] = 11.97, p =.02) (see Table 17).

Table 17. Chi-square for relationship between Web use and television watching between Mexican and U.S. groups

	Mexican	U.S.	TOTAL	Percent
Greatly decreased	1	0	1	1.5
Decreased	5	8	13	19.7
No change	11	37	48	72.7
Increased	3	0	3	4.5
Greatly increased	0	1	1	1.5
TOTAL	20	46	66	100.0
Percent	30.3	69.7	100.0	

Chi-Square Value = 11.97321, df = 4, Significance = .01755

Discussion

FUNCTIONAL USES OF THE WEB

Our first two research questions sought to identify the major functional uses of the Web for business communicators and the ways in which those uses might be

different for Mexican Web users than for users in the United States. Our study indicates that Mexican and the U.S. groups are nearly identical in their uses of the Web, although the rank order of their top three Web uses are reversed in our findings. The participants from both groups in this study use the Web primarily as a tool for news gathering and information seeking. The data indicate that news, business, and educational sites are the most often accessed, and that business communicators in this sample typically use the Web for business and professional purposes. These results confirm those of the study by Fawcett (1996), who found that 82.0% of respondents used the Web to collect news and information.

The overwhelming interest in research and keeping up with current events across groups supports the idea that business communication and public relations requires a knowledge of world and business news and research in a broad range of subjects (e.g., Strenski, 1996). Thus, the Web may serve as an information resource where users can find specific information they want from home, work, or school, then download, print, or save to disk for easy retrieval.

MOTIVATIONS FOR USING THE WEB

Our third and fourth research questions focused on identifying business communicators' motivations for using the Web, and determining if those motivations were different for Mexican professionals than for U.S. professionals. Although we utilized a nearly identical survey instrument to Kaye's (1996), we were unable to replicate her results. Our data yielded five motivation factors that more closely with Greenberg's (1972) seven motivations for television viewing among children than with Rubin's (1983) factors, although the questionnaire items were drawn from Rubin's work. This finding is not surprising, given the similarity of the factors identified by both researchers.

ATTITUDES TOWARD THE WEB.

The fourth and fifth research question asked about the relationships between business communicators' World Wide Web use motivations, and Web affinity, perceived reality and ease of use, and whether those relationships were different for Mexican Web users than for U.S. users. Since our index for perceived reality was not appropriate for analysis, we are unable to fully answer these questions, and could address only affinity and perceived reality.

Affinity
Our data indicate that the Web does not play a particularly important role in the lives of business communicators, even though they routinely use it. This is not unexpected, since more than a quarter of our respondents indicate that a major functional use of the Web is e-mail. Had our survey instrument included

functions that users accessed without their Web browsers, this figure undoubtedly would be considerably higher.

Differences between the Mexican and U.S. groups in affinity indicate that the Mexican users consider the Web both more important and a more interesting way to spend their time than do the U.S. users. This may be due, in part, to the newness of Web technology in a developing nation, although our Mexican participants have similar levels of Web experience to those of the U.S. participants.

Ease of use

Our data indicate that both Mexican and U.S. business communicators consider the Web easy to use. This finding is to be expected, given the educational and experiential levels of our respondents, who typically are college graduates, and have accessed the Web between 50 and 75 times. There is some evidence that both Mexican and U.S. users spend more time on the Web when they perceive information easy to access on-line. However, only Mexican users who have accessed the Web repeatedly consider the Web a quick resource for seeking specific information.

USE OF THE WEB AND USE OF OTHER MEDIA

Our seventh and eighth research questions examined the relationships between business communicators' World Wide Web use and their use of other media, and asked if World Wide Web use and use of other media were different for Mexican business communicators than for U.S. business communicators. Our data indicate that U.S. business communicators who access the sites for relation purpose may spend more time on the Web, but that Web use is not correlated with any of the other motivation factors identified in this study. Not surprisingly, the participants in our sample access the Web more times and for more hours per week when they have a higher affinity toward the Web. Thus, the more experienced users tend to perceive the Web as more important to their lives.

Our study results indicate that the Web is not supplanting use of other media; both Mexican and U.S. users have not changed the extent to which they watch television, movies or videotapes, or listen to the radio or stereo. This may be, in part, to the fact that one can listen to a stereo or have the television on while sitting at the computer. Radio listening, in particular, often occurs during automobile commutes, times when one is unlikely to be using a computer to connect to the Web. The data do indicate, however, that some Web users tend to rely less on printed forms of communication such as magazines and newspapers, and that they read less for pleasure.

LIMITATIONS OF THE STUDY

This study has some limitations that affect generalizability to a larger population The first involves the sampling procedure. Since our research questions concerned perceptions of business communicators in the United States and Mexico, we limited our sample population to individuals readily identifiable as being involved in some aspect of business communication or public relations. We thus focused on student and professional public relations associations and on workshop participants in Mexico who were interested in Internet and Web technology. Thus, our nonprobabilistic sample focused on public relations groups in the western United States, and on business communicators with stated interests in Web and Internet technology. Participants in both groups were generally computer literate and well educated, and may not be representative of all business communicators. Second, the relatively small sample size may affect the statistical power of our findings. Third, we were unable to calculate response rates to our survey because administrative difficulties during data collection in Mexico prevented an accurate count of workshop participants. Finally, because the Mexican workshops were conducted in English, our survey instrument was written in English. Therefore, we may have received fewer responses and less accurate responses to questionnaire items than if we had used a Spanish language translation. Nonetheless, this study offers researchers a starting point for exploring functional and psychological reasons for Web use in a business environment.

Implications and Conclusions

Our research indicates that Mexican and U.S. business communicators are more similar than different in their use of the World Wide Web. Their professional needs clearly outweigh any cultural differences that may affect their Web use. Older media (including television) are not being supplanted by the Web, but these business users do tend to consider the Web a replacement for a trip to the library or a daily newspaper. As integrated communication technologies continue to emerge (e.g., Web TV), the interactivity of the Web will continue to be a central issue for business and professional communications. Television commercials and infomercials, for example, are likely to make heavy use of the interactive capabilities of Web technology to attract buyers who prefer interactive communication (Lee and Lee, 1995).

Web use motivations are similar to gratifications sought from TV viewing, but seem to be an uncomfortable fit for researchers in the new medium of computer-mediated communication. The Web, for example, offers users an interactive, multi-directional channel of communication (e.g., e-mail and listservs), as well as news, business and educational sites. A number of

variables that constitute the five factors we identified appear to address constructs more closely associated with flow (Csikszentmihalyi, 1975, 1990; Csikszentmihalyi and Selega-Csikszentmihalyi, 1989) than with traditional motivations for mass media consumption, including cognitive enjoyment, control, and absorption in the event (e.g., the items that address enjoyment, excitement, and learning). While experiencing a state of flow, for example, an individual's cognitive and sensory curiosities are aroused (Malone, 1981) through various, new, and surprising stimuli (Berlyne, 1960). Technological characteristics of the Web, including color, graphics, movement, and sound can stimulate sensory curiosity. A user also may be cognitively aroused by the desire to attain competence/expertise with the Web through the menu options and point-and-click technology that stimulate exploration (Malone and Lepper, 1987).

The concept of flow also is linked to interactivity, which is defined as responsiveness of the medium (Rafaeli, 1988). Interactivity is a characteristic of the Web that may enhance interpersonal communication (Heeter, 1989), flexibility (Kiesler, Zubrow, Moses, and Gellar, 1985), and human control over the pace, structure, and content of the communication (Rice, et al., 1984; Rogers, 1986). Trevino and Webster (1992) propose that, unlike traditional communication, CMC also requires users to interact with the technology itself. Thus, a user may choose to use a communication technology not only for the utilitarian purpose of sending or receiving a message, but because s/he enjoys interacting with technology. Such lived experience with technology is a phenomenon that seems more appropriately informed by a theoretical grounding in flow than in traditional uses and gratifications. Thus, future investigations should reconceptualize user motivations for Web use in terms of constructs that address the constructs of flow. Some researchers already are doing this (e.g., Csikszentmihalyi 1990; Ghani, Supnick and Rooney 1991; Hoffman and Novak, 1995; Trevino and Webster 1992; Webster, Trevino, and Ryan 1993), and it is clear that new ways of studying new technologies are an intellectual and practical imperative.

References

Batterson, D.: 1994, Young gay chat rooms on America Online, *Computer Underground Digest,* **6**(41), [On-Line] Available:
  http://www.eff.org/pub/Censorship/Online_services/aol_gay_censorship.articles
Berlyne, D.: 1960, *Conflict, arousal, and curiosity*, New York: McGraw Hill.
Berniker, M.: 1995, July 31, CBS the latest to use RealAudio, *Broadcasting and Cable*, 32.
Bruckman, Amy.: 1993, *Gender swapping on the Internet [On-Line]*, Available
  ftp://ftp.media.mit.edu/pub/asb/papers/gender-swapping.txt
Csikszentmihalyi, M.: 1975, *Beyond boredom and anxiety*, San Francisco: Jossey-Bass.

Csikszentmihalyi, M.: 1990, *Flow: The psychology of optimal experience*, New York: Harper and Row.

Csikszentmihalyi, M., and LeFevre, J.: 1989, Optimal experience in work and leisure, *Journal of Personality and Social Psychology, 56*, 815-822.

Csikszentmihalyi, M, and Selega-Csikszentmihalyi, I., (eds): 1989, *Optimal experience: Psychological studies of flow in consciousness*, New York: Cambridge University Press.

Davison, P.: 1959, On the effects of communication, *Public Opinion Quarterly, 23*, 343-360.

DeVellis, R.: 1991, *Scale development: Theory and applications,* Applied Social Research Methods Series, Volume 26, Newbury Park, CA: Sage.

Eisenberg, E, M., Monge, P. R., and Miller, K. I.: 1983, Involvement in communication networks as a predictor of organizational commitment, *Human Communication Research, 10*, 179-201.

Fawcett, A.: 1996, Online users go for facts over for fun, *Advertising Age, 67*(42), 46, 51.

Garton, L., and Wellman, B.: 1995, Social impacts of electronic mail in organizations: A review of the research literature, *in* B. R. Burleson (ed.), *Communication Yearbook, 18* (pp. 434-453), Thousand Oaks, CA: Sage.

Georgia Tech Research Corporation 1997, Graphic, Visualization, and Usability Center's (GVU) 8th WWW User Survey, [On-Line], Available:
http://www.gvu.gatech.edu/user_surveys/survey-1997-10/

Ghani, J. A., Supnick, R., and Rooney, P.: 1991, December, The experience of flow in computer-mediated and in face-to-face groups, *in* J. I. DeGross, I. Benbasat, G. DeSanctis, and C. M. Beath, (eds.), *Proceedings of the Twelfth International Conference on Information Systems*, New York.

Gollin, A.: 1994, *Newspaper trends, uses and gratifications: A research odyssey*, Paper presented at the annual conference of the American Association for Public Opinion Research, Danvers, MA.

Greenberg, B.: 1972, *Children's reasons for watching TV*, Audience research report, VR/72/147 London: British Broadcasting Corporation.

Heeter, C.: 1989, Implications of new interactive technologies for conceptualizing communication, *in* J. L. Salvaggio and J. Bryant (eds.), *Media use in the information age* (pp.217-235), Hillsdale, NJ: Erlbaum.

Herzog, H.: 1944, What do we really know about daytime serial listener? In P. Lazarsfield and F. Stanton eds.) *Radio research, 1942-43*, New York: Duell, Sloan and Pearce.

Hoffman, D. L., and Novak, T. P.: 1995, Marketing in Computer-Mediated Environments: Conceptual Foundations [On-Line], Available:
http://www2000.ogsm.vanderbilt.edu/cmepaper.revision.july11.1995/cmepaper.html

Jeffres, L., and Atkin, D.: 1996, Predicting use of technologies for communication and consumer needs, *Journal of Broadcasting and Electronic Media, 40*, 318-330.

Katz, E., Gurevitch, M., and Hass 1973 On the use of mass media for important things, *American Sociological Review, 38,* 164-181.

Kaye, B. K. in press. Uses and gratifications of the World Wide Web: From couch potato to Web potato, *The New Jersey Journal of Communication*.

Kiesler, S., Zubrow, D., Moses, A. M., and Geller, V.: 1985, Affect in computer-mediated communication, *Human Computer Interaction, 1*, 77-104.

Lasswell, H.: 1948, The structure and function of communication in society, In L. Bryson (ed.) , *The communication of ideas* (pp. 37-51). New York: Harper.

Lea, M., O'Shea, T., Fung, P., and Spears, R.: 1992, 'Flaming' in computer-mediated communication: observations, explanations, implications, *in* M. Lea, (ed.), *Contexts of computer-mediated communication* (pp. 89-112), New York: Harvester Wheatsheaf.

Lea, M. and Spears, R.: 1991, Computer-mediated communication, de-individuation and group decision-making, Special Issue: Computer supported cooperative work and groupware, *International Journal of Man-Machine Studies, 34*, 283-301.

Lee, B. and Lee, R.: 1995, How and why people watch TV: Implications for the future of interactive television, *Journal of Advertising Research, 36*(6), .9-17.

Lin, C. A.: 1993, Adolescent viewing and gratifications in a new media environment, *Mass Comm Review, 20*, 39-50.

Malone, T.: 1981, Toward a theory of intrinsically motivated instruction, *Cognitive Science, 4*, 333-369.

Malone, T., and Lepper, M.: 1987, Making learning fun: A taxonomy of intrinsic motivations for learning, *in* R. E. Snow and M. Farr (eds.), *Attitude, learning, and instruction, Vol. 3: Conative and affective process analyses* (pp. 223-251), Hillsdale NJ: Erlbaum.

McLeod, M., and Becker, B.: 1974, Testing the validity of gratification measures through political effects analysis, *in* J. G. Blumler and E. Katz (eds.), *The use of mass communication: Current perspectives on gratification research*, Beverly Hills, CA: Sage.

McCormick, N. B. and McCormick, J. W.: 1992, Computer friends and foes: Content of undergraduates' electronic mail, *Computers in Human Behavior, 8*, 379-405.

McQuail, D., Blumler J., and Brown, J.: 1972, The television audience: A revised perspective, *in* D. McQuail (ed.), *Sociology of Mass Communication*, (pp. 135-165) Harmondsworth, UK: Penguin.

Miller, S.: 1973, Ends, means, and galumphing: Some leitmotifs of play, *American Anthropologist, 75*, 87-98.

Morris, M. and Ogan, C.: 1996, The Internet as a mass medium, *Journal of Communication, 46*, 39-49.

Newhagen, J. E. and Rafaeli, S.: 1996, Why communication researchers should study the Internet: A dialogue, *Journal of Communication, 46*, 4-13.

O'Sullivan, P. B.: 1995, Computer networks and political participation: Santa Monica's teledemocracy project, *Journal of Applied Communication Research, 23*, 93-107.

Perse, E. M. and Ferguson, D. A.: 1992, *Gratifications of newer television technologies*, Paper presented at the annual convention of the Speech Communication Association, Chicago, IL.

Poole, M. S., and DeSanctis, G.: 1989, Understanding the use of group decision support systems: The theory of adaptive structuration, In J. Fulk, and C. Steinfield (eds.), *Organization and communication technology* (pp. 173-193), Newbury Park, CA: Sage.

Rafaeli, S.: 1988, Interactivity: From new media to communication, In R Hawkins et al. (eds.), *Advancing communication science: Merging mass media and interpersonal process* (pp. 110-134) Newbury Park, CA: Sage.

Rafaeli, S., Sudweeks, F., Konstan, J., and Mabry, E.: 1994, *ProjectH Overview: A quantitative study of computer-mediated communication [On-Line]*, Available:

http://www.arch.usyd.edu.au/~fay/projecth.html

Reid, E.: 1991 *Electropolis: Communication and Community on Internet Relay Chat*, Honors Thesis, University of Melbourne, Department of History, [On-Line], Available: http://www.ee.mu.oz.au/papers/emr/

Rheingold, H.: 1993, *The virtual community: Homesteading on the electronic frontier*, Reading, MA: Addison-Wesley, [On-Line], Available:

http://www.well.com/user/hlr/vcbook/

Rice, R.: 1984, Mediated group communication, *in* R. E. Rice (ed.), *The new media: Communication, research and technology* (pp.129-156), Beverly Hills, CA: Sage.

Rice, Ronald E.: 1989, Issues and concepts in research on computer-mediated communication systems, *in* J. A. Anderson (ed.), *Communication Yearbook, 12*, (pp. 436-476), Newbury Park: Sage.

Rogers, E.: 1986, *Communication Technology: The new media in society*, New York: Free Press.

Rubin, A. M.: 1981, An examination of television viewing motives, *Communication Research, 8*, 141-165.

Rubin, A. M.: 1983, Television uses and gratifications: The interactions of viewing patterns and motivations, *Journal of Broadcasting, 27*, 37-51.

Rubin, A. M. and Bantz, C. R.: 1989, Uses and gratifications of videocassette recorders, In J. L. Salvaggio and J. Bryant (eds), *Media use in the information age: Emerging patterns of adoption and consumer use* (pp. 181-195), Hillsdale, NJ: Lawrence Erlbaum.

Schaefermeyer, M. J. and Sewell, E. H., Jr.: 1988, Communicating by electronic mail, *American Behavioral Scientist, 32*(2), 112-123.

Schmitz, J. and Fulk, J.: 1991, Organizational colleagues, media richness, and electronic mail: A test of the social influence model of technology use, *Communication Research, 18*(4), 487-523.

Sproull, L. and Kiesler, S.: 1986, Reducing social context cues: Electronic mail in organizational communication, *Management Science*, 1492-1512.

Stevens, J.: 1986, *Applied Multivariate Statistics for the Social Sciences*, Hillsdale, NJ: Lawrence Erlbaum Associates.

Sudweeks, F. and Rafaeli, S.: 1995, How do you get a hundred strangers to agree: Computer mediated communication and collaboration, *in* T. M. Harrison and T. D. Stephen, (eds.). (pp. 115-136.) *Computer networking and scholarship in the 21st century*, New York: SUNY University Press, [On-Line] Available:

http://www.arch.usyd.edu.au/~fay/papers/strangers.html

Tabachnick, B. G., and Fidell, L. S.: 1989, *Using multivariate statistics* (2nd ed.), New York: HarperCollins.

Tan, A.: 1985, *Mass communication theories and research*, (2nd ed.) New York: McMillan.

Thompsen, P. A., and Foulger, D. A. May, 1993, Effects of pictographs and quoting on flaming in electronic mail, Paper presented to the International Communication Association, Washington, D.C.

Trevino, L. K., and Webster, J.: 1992, Flow in computer-mediated communication, *Communication Research, 19*, 539-573.

Strenski, J.: 1996, The evolving practice of public relations in North and South America, *Public Relations Quarterly, 41*(1), 27-28.

Walker, J. R. and Bellamy, R. V.: 1989, October, *The gratifications of grazing: Why flippers flip*, Paper presented at the annual conference of the Speech Communication Association, San Francisco, CA.

Walker, J. R., Bellamy, R. V. and Truadt, P. J.: 1993, Gratifications derived from remote control devices: A survey of adult RCD use, *in* J. R. Walker and R. V. Bellamy (eds.) *The Remote Control in the New Age of Television.* (pp. 103-112), Westport: Praeger.

Williams, F., Phillips, A. F., and Lum, P.: 1985, Gratifications associated with new communication technologies, *in* K. E. Rosengren, L. A. Wenner and P. Palmgreen (eds.), *Media gratifications research* (pp. 109-122), Beverly Hills: Sage.

Webster, J., Trevino, L. K., and Ryan, L.: 1993, The dimensionality and correlates of flow in human computer interactions, *Computers in Human Behavior, 9*, 411-426.

Witmer, D. F.: 1998, Practicing safe computing: Why people engage in risky computer-mediated communication., *in* F. Sudweeks, S. Rafaeli, and M. McLaughlin, (eds), *Network and Netplay: Virtual groups on the Internet*, (pp. 127-146), Menlo Park, CA: AAAI/MIT Press.

Witmer, D. F., and Katzman, S. L.: 1998, Smile when you say that: Graphic accents as gender markers in computer-mediated communication, *in* F. Sudweeks, M. L. McLaughlin and S. Rafaeli (eds). *Network and Netplay: Virtual Groups on the Internet.* (pp. 3-11), Boston: AAAI/MIT Press.

Yates, J. and Orlikowski, W. J.: 1993, *Knee-jerk anti-LOOPism and other e-mail phenomena: Oral, written, and electronic patterns in computer-mediated communication*, MIT Sloan School working paper #3578-93, [On-Line] Available: http://ccs.mit.edu/CCSWP150.html

CROSS-CULTURAL ISSUES AFFECTING INFORMATION TECHNOLOGY USE IN LOGISTICS

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Introduction

Logistics is an area that extensively utilizes Information Technology (IT) in the daily performance of logistics tasks. Globalization has resulted in many organizations having facilities located in culturally diverse countries. The employees of these organizations bring to the workplace unique values conditioned by the cultures the employees were raised in. The organization must find a way to integrate these culturally diverse employees into a cohesive unit. That is usually accomplished by having employees internalize the organization's unique culture. Differences still persist however, because various societies imbue diverse values that produce culturally unique orientations toward life and work. Experts state that 25 percent to 50 percent of an employee's job behavior is culturally determined. This makes it imperative that organizations understand the cultural values behind the employee, and what motivates peak performance.

The Study

This paper reports on an on-going research effort which studies the culturally based work values of logisticians around the world, and the factors that explain the motivational ideals that they prefer in an organization. A survey was sent to a sample of members of the Society of Logistics Engineers (SOLE), a professional group with chapters in nineteen countries. All nineteen countries are represented in the 131 responses received. The information collected includes both demographic and value based data. The study utilized the Chi-Square test in analyzing the data.

The Findings

The various responses on what constitutes an "ideal job" clearly indicate many similarities as well as differences between logisticians from around the world.

The Americans tend to favor individually based values as most important while the non-Americans lean more toward group based values. The differences in culturally anchored values can cause communications difficulties within an organization in terms of both understanding and motivation. Additionally, these value differences can result in both divergent cultural attitudes toward technology, and more varied, culturally distinctive ways of implementing and utilizing information technologies.

This abstract reports on an on-going research effort that studies the work values of employees from around the world. It identifies those factors that explain the motivational ideals that they prefer in an organization. It has long been recognized that there are significant differences in orientation and motivation based on cultural values. For example, American culture places a strong emphasis on personal choice and personal achievement. This emphasis is in direct contrast with the value that many other cultures place on the demands and accomplishments of groups, such as families, clans, or villages. Compared to other societies where birth derived status and prestige are important, American culture believes that individuals should be rewarded and recognized on the basis of their personal achievement. While this belief may have pressured people to compete for success, it has also encouraged the development and use of individual talents and skills. These may have been overlooked in more rigid and stratified societies.

Specifically, this abstract reports on the work value orientations of logisticians from the United States and other countries around the world. These logisticians are all members of a professional group called the Society of Logistics Engineers (SOLE) that has worldwide membership through over 130 chapters in 32 districts encompassing 19 countries. Survey questionnaires were sent to members in all countries. Responses were received from 131 SOLE members composed of 64 Americans and 67 non-Americans. Tentative findings based on analysis of the data indicate that there are some important differences between the two groups that have implications for the organizations employing them and for their motivation. Some of the more interesting findings on value and demographic data are provided below.

1. The most important value for Americans was having challenging tasks to perform, but for non-Americans it was having an opportunity to make real contributions to the success of their company or organization.
2. Of the five top rated values, Americans and non-Americans shared four of the five, but the order of ranking was different. On the fifth they disagree. Americans ranked having sufficient time left for personal or family life third. While non-Americans ranked working with people who cooperate well with one another fourth to round out the two groups top five.

3. Americans clearly ranked having an opportunity to earn higher wages as the least important value. The Pearson Chi-Square value on this question with three degrees of freedom was at the .044 significance level. Non-Americans thought that having a job with little stress and tension was the least important value.

4. Only 54.7 percent of Americans felt it was important to work in a prestigious, successful company or organization compared to 67.2 percent of the non-Americans.

5. Females represented only 4.5 percent of the non-American respondents, but they represented 21.9 percent of the Americans answering the questionnaire. The Pearson Chi-Square with three degrees of freedom on this question had a .022 significance level.

6. The non-American logisticians were younger with 61 percent being 49 years old or below while only 48 percent of Americans were in that age group.

7. Only 7.8 percent of American logisticians did not possess an undergraduate degree compared to 16.4 percent of the non-Americans.

8. Of the non-Americans, 82 percent classified their job as managerial while only 56 percent of the Americans listed themselves as managers.

9. Americans agree that people should work together in any way necessary to insure that the organization's tasks are accomplished. The Pearson Chi-Square value on this question with three degrees of freedom was at the .049 significance level. Non-Americans thought that people worked together when coordination and exchange were specified by the formal organization system.

10. Non-Americans felt that decisions should be made by the one who carries the responsibility while Americans felt that the decisions should be made by the person or persons with the most knowledge about the problem. The Pearson Chi-Square value on this question with three degrees of freedom was at the .046 significance level.

11. An overwhelming 86.9 percentage of American respondents felt that in an appropriate control and communication structure information about task requirements and problems should flow from the center of task activity upwards and outwards compared to only 67.9 percent of Non-Americans who felt that way.

Conclusion

The various responses on what constitutes an "ideal job" clearly indicate many similarities as well as differences between logisticians from around the world. The Americans tend to favor individually based values as most important while the non-Americans lean more toward group based values. The differences in culturally anchored values can cause communications difficulties within an

organization in terms of both understanding and motivation. Additionally, these value differences can result in both divergent cultural attitudes toward technology, and more varied, culturally distinctive ways of implementing and utilizing CMC technologies.

This places the onus on management in companies that operate on a global scale to find ways to bridge the differences that exist among their culturally diverse employees. If the organization is to achieve a strong internal culture, then it must find a way to either work around or homogenize the differing external cultural values that employees bring into the organization. This is the great challenge of globalization for organizations. They must find a way to resolve it or advances in information technology and their promise may be underutilized.

ANALYSING CULTURAL IMPACTS OF COMPUTER-MEDIATED COMMUNICATION IN ORGANISATIONS

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1. Introduction

As the use of computer-mediated communication (CMC) has grown markedly, research on CMC is also increasing. Most research on CMC is concerned with the issues of media choice and media effects. There are three theories in the mainstream of the former: information richness (Daft and Langel, 1984), social influence (Fulk et al., 1990) and symbolic meaning in messages and media (Trevino et al., 1990). In the latter, we find reduced social cues (Sproull and Kiesler, 1992), information overload and other effects such as democracy, centralisation and decentralisation. Rudy (1996) sees two main faults in the existing research on CMC. First, most of the work fails to consider the context into which CMC is introduced. This criticism comes from contextualism whch insists that the context affects its use and effects. Second, particularly for media effects research, little has been done on the effects at an organisational level; most of the work deals with individuals and groups.

From the viewpoint of Rudy's contextualist criticism, the theme of the conference is quite relevant and opportune: "how do diverse cultural attitudes shape the implementation and use of CMC technologies?" In addition to the lack of research at an organisational level, we will add another aspect which needs to be addressed in CMC research. CMC not only concerns itself with communication behaviour (media choice and effects directly related to communication behaviour), but also affects our everyday life, in particular, in work places. Although the study of these elementary changes is fundamental for understanding and predicting our life in the 'information age', little research has been done yet. This aspect of changes in everyday life is also closely related to the theme of CMC use in national contexts in that our everyday life behaviour and artefacts are culturally (nationally) constructed. The changes in everyday life might look trivial, but it can provide a clue to understand, for example, why some communication technologies are preferred in some cultures while they are avoided in other cultures.

In our research in progress, we study how CMC affects culture in office life. By culture we mean here our way of life in general and thus our way of working in work places. We will investigate impacts of CMC on the way we work in offices. In the next section we will explain the meaning of culture used in this research in detail and present evaluation framing (Stamper, 1988) as a conceptual framework.

2. Culture

Culture is a controversial term in organisational studies. There are three levels of culture (Schein, 1990; Robey and Azevedo, 1994):

- The deepest level consists of patterns of assumptions that organisational members hold without awareness.
- The intermediate level refers to the values and beliefs of organisational members, which are readily articulated by members in their normative statements.
- The surface level is concerned with the organisation's symbols and artefacts, its routines and practices (Robey and Azevedo, 1994, p. 27).

In this project, we address the surface level of culture, in particular the way we work in organisations. We base our concept of culture on Hall's idea of primary message systems (1959) and this study of cultural impacts is built upon Stamper's evaluation framing (1988).

According to Hall, culture is not constituted as a simple whole. There are ten areas of human activities that combine to produce culture (Table 1). These he calls 'primary message systems'. They are closely connected to each other. We can not only investigate each separately, but also examine how they work together to form a culture as a whole system.

Table 1. Hall's primary message systems.

Interaction	Temporality
Association	Learning
Subsistence	Play
Bisexuality	Defence
Territoriality	Exploitation

All things that people do involve *interaction* with something else or somebody. One of the most elaborated forms of interaction is speech. *Association* refers to conventions that govern the groupings of people and the roles that people play; rank and hierarchy, class and formal organisation, etc. *Subsistence* means the processes by which a society satisfies the basic physical needs of daily life and the attitudes towards such matters as food, drink and work. *Bisexuality* is

concerned with both the way the sexes are distinguished and the relationships which are permitted between them. *Territoriality* refers to conventions which govern the division of space between people and its allocation for different purposes. *Temporality* is concerned with conventions which govern the way that time is constructed and used. These conventions govern when to do things, in what order to do them, and how much time is allowed for doing each of them. *Learning* refers to the conventions that govern being taught and teaching. *Play* is concerned with whatever a society regards as entertaining, for example, painting, music, literature, sports, games, etc. *Defence* refers to protective activities or techniques which the individual and the community need not only against potentially hostile forces in nature but against such forces within human society. *Exploitation* is concerned with how to develop and make use of resources.

3. Evaluation Framing

When a new technology is introduced into an organisation, it is difficult to analyse its impacts. These are not limited to technical and economic aspects but reach out to social and cultural ones also. The technology does not exist separate from other elements of an organisation. Once introduced, it interacts with the rest of organisational components.

To recognise the effects which a new technology has upon people and organisations, Stamper (1988) devised 'evaluation framing'. It is based on primary message systems and provides a systematic method of analysing impacts of an innovation such as a new product, any change to an organisation, or a new information and communication system. It suggests that the ten primary message systems be examined in turn when we attempt to predict the impacts of an innovation.

Suppose that a new communication system is put into use in an organisation. A new communication medium, e.g. electronic mail, provides a possibility of a new pattern of *interaction,* e.g. less dependent on face-to-face or telephone for certain tasks. CMC can also affect interpersonal relationships. Electronic access leads to the emergence of new communication networks. Rice and Case (1983) found that within five months of the installation of an integrated office system, 43% of managers surveyed reported exchanging messages with people whom they had not previously been in touch with. The network could develop into a so-called 'virtual community', which is a new *association*. Within the organisation, the use of the new system may require new skills which are rare among the older (and higher status) members of the organisation. Consequently, a new hierarchy may develop based on new skills and knowledge on new communication media, conflicting with the existing one. For *subsistence*, work

practices will adjust as the job specifications for the new system change. The new job specifications may generate a new division of labour by *gender*. A new pattern of association by gender may also emerge based on the use of the new technology; for example, males may be more likely to use the new communication system readily than are females.

A new system may require a new arrangement of computers and therefore a new layout of the office (*territoriality*), which in turn may cause a new pattern of physical encounters and thereby a new interaction. Furthermore, space is not just space in organisations. It implies much about social relations. For example, executives have larger rooms than middle management, which in turn occupy more space, private or working whatever, than their subordinates. There are three principles relating the concept of territory to organisational status:

1. persons of higher status will have more and better territory
2. the territory of higher-status people is better protected than that of lower-status people
3. the higher a person's status, the easier it is for him or her to invade the territory of lower-status people (Fisher, 1993, p. 221).

What then will happen in 'virtual organisations'? What is the equivalent there of territory? How can higher-status people in virtual organisations maintain control of 'their' space, which is an integral part of their power? These questions lead to another question of 'how can we design a virtual organisation which maintains such ownership of territory?'

A new communication technology can affect the organisation of working hours (*temporality*). It may open a possibility of transforming events happening in a polychronic way into events occurring in a monochronic order, or vice versa (Lee, 1997).

While some new systems require more formal training, others function better through informal *learning* from colleagues, as social influence theory implies (Fulk et al., 1990). A communication medium often provides users with new means of entertainment (*play*) such as 'web surfing'. Some people will sit longer in front of their computers surfing the Internet for amusement and mediated interaction than in a public coffee area, which has again something to do with territoriality. The new system also raises problems of data security, e.g. access and privacy in information systems (*defence*). It can also extend the organisation's capacity for *exploitation* of resources.

In summary, evaluation framing based on primary message systems can show the likely cultural consequences of a new technology. It aims to provide a systematic method to analyse cultural impacts of organisational innovations such as information and communication systems.

4. The Way Ahead

We are conducting a case study in which a newly implemented CMC system is investigated in terms of its impacts on the primary message systems. The research design is being developed and the appropriate methods for data collection are being adopted (interview, observation and document analysis).

As for the scope of the project, we will not address all of the ten categories. We will cover those aspects which we think are most relevant to the development of CMC. For example, one would not expect any meaningful change in diet and sleeping habits to be caused by a new communication medium. We are initially focusing on interaction, association, gender, territoriality and temporality. The latter two factors will be especially emphasised because space and time are the essential dimensions of human existence.

From this research, we expect two matrix tables as results; one from the literature review and the other from the case study. In examining various studies on the effects of CMC, the literature review will provide a matrix showing the effects of each CMC technology on the five selected streams. The case study is expected to produce a matrix which shows various impacts of a specific CMC on working life in a real organisational context. Both will allow us to draw a picture of possible and actual cultural changes in organisations caused by a new CMC technology.

References

Daft, R. L., and Lengel, R. H.: 1984, Information richness: A new approach to managerial behavior and organization design, *in* L. L. Cummings and B. M. Staw (eds), *Research in Organizational Behavior*, Vol. 6, JAI Press, Greenwich, pp. 191-233.

Fisher, D.: 1993, *Communication in Organizations*, West Publishing Company, New York.

Fulk, J., Schmitz, J. and Steinfield, C.: 1990, A social influence model of technology use, *in* J. Fulk and C. Steinfield (eds), *Organizations and Communication Technology*, Sage, London, pp. 117-140.

Hall, E. T.: 1959, *The Silent Language*, Doubleday, Garden City.

Lee, H.: 1997, Temporal implications of electronically mediated business procedures on organisational work: EDI applications in trade, Unpublished PhD, London School of Economics, University of London.

Rice, R. E., and Case, D.: 1983, Electronic message systems in the university, *Journal of Communication*, 33, 131-152.

Robey, D. and Azevedo, A.: 1994, Cultural analysis of the organizational consequences of information technology, *Accounting, Managemet & Information Technlogy*, 4(1), 23-37.

Rudy, I. A.: 1996, A critical review of research on electronic mail, *European Journal of Information Systems*, 4, 198-213.

Schein, E. H.: 1990, Organisational culture, *American Psychologist*, 45, 109-119.

Sproull, L. and Kiesler, S.: 1992, *Connections: New Ways of Working in the Networked Organizaiton*, MIT Press, Cambridge, Massachusetts.

Stamper, R.: 1988, Analyzing the cultural impact of a system, *International Journal of Information Management*, 8, 107-122.

Trevino, L. K., Daft, R. L. and Lengel, R. H.: 1990, Understanding managers' media choices: a symbolic interactionist perspective, *in* J. Fulk and C. Steinfield (eds), *Organizations and Communication Technology*, Sage, London, pp. 71-94.

PANEL

GLOBAL CULTURE, LOCAL CULTURE, AND VERNACULAR
COMPUTING: THE EXCLUDED 95% IN SOUTH ASIA

PANEL: GLOBAL CULTURE, LOCAL CULTURE, AND VERNACULAR COMPUTING

The Excluded 95% in South Asia

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The growing importance of digital computation and telecommunication ("the Information Age") is closely allied to the emergence of a global culture mediated by satellites, television, Internet, and the Web. This culture is currently dominated by enterprises in the Northern, and in particular in the English-speaking nations: e.g., Disney, CNN, Murdoch, MTV, Microsoft, Intel, etc. The products it sells in the newly liberalized economies of the world are generally those of major multi-nationals: Nestle, Philips, Ford, Visa, Sheraton, etc. Whether in Bombay, Nairobi, Buenos Aires, Karachi, Kathmandu, Dhaka, or Jakarta, the power of this global, media-driven, advertising-based, mass-market culture is growing steadily. Although sometimes "dubbed" in local languages, the content of this culture varies little from nation to nation.

Especially as far as computers and electronic communication are concerned, a central feature of the new global culture is its foundation in the English language. All the major operating systems and most of the widely used applications are American in origin (Microsoft, IBM, UNIX, Corel, Lotus, Digital, Java, etc.); all of the top ten software companies are American with the exception of SAP Ag. The majority of Internet and Web sites in the world are either entirely in English or have an English option.

To be sure, peoples who speak North European languages like French, Spanish, German, or Swedish, etc. are often well-served by the efforts of internationalization of the major software companies. Thus, localized operating systems and major applications exist, for example, for Windows 95, Windows NT and Office, Word Perfect, Apple's OS, and so on in more than a dozen languages, mostly European, with other European languages still to come. Some European nations like France require that all software legally sold within its boundaries be fully localized to the national language. But despite the

linguistic nationalism of the French, many French sites have English mirrors, and French authorities remain vocally concerned about the "invasion" of English language and "Anglo-Saxon" culture.

The power of this new global culture -- if indeed it can be called a culture at all -- is such that it indeed threatens local cultures and vernacular languages. To conservative adherents of local cultures, especially in the developing nations, the new "Western" global media are often seen as politically subversive, culturally corrosive, and/or morally unacceptable. Nations like China have made successful attempts to block politically unacceptable satellite TV transmissions, and new PRC regulations have been issued to attempt to prevent politically unacceptable Internet uses. The related question of "pornography" arises with particular intensity in conservative countries where full access to the Web may be blocked to prevent such uses. Most important, the global perception that "Western" media and "Western" values are subverting ancient, rooted, traditional cultural norms, outlooks and languages constitutes an important force behind fundamentalist reactions in every part of the world.

A critical element in the increasing hegemony in "global culture" is the dominance of the English language in computation and international electronic communication. The opposite side of this coin is the effective exclusion from the Information Age of the great majority of the world's population that does not speak English -- or perhaps another readily accessible European language. To be sure, in the case of a few countries, like the PRC, American firms have made major (although incomplete) efforts to "localize" major programs for a potential future Chinese market (the present market being limited by a 90+% piracy rate.) But for much of the rest of the developing world, the inaccessibility of computers and electronic communications to people who do not speak English constitutes a impossible hurdle to entry into the Information Age.

The panel will take South Asia as an example of problems that may arise in other developing countries where localization to vernacular languages is inadequate.

Of a total South Asian population of approximately 1.2 - 1.3 billion people (India, Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives), at least 50 million, or approximately 5%, speak excellent English. South Asia contains the world's second or third largest English-speaking population (the US is number 1, Britain is number 2 or number 3), the world's third largest scientific population, the world's third largest number of university graduates -- almost all of whom speak good English. This 5% constitutes the governing political, economic and cultural elite of their nations. Their mastery of English is such that they have few problems participating in the global English-speaking electronic culture.

This panel will focus on the excluded 95%. We will examine some of the economic, political and cultural factors that limit participation in the Electronic

Age by the non-English-speaking populations, concentrating especially on India and Nepal. Attention will be given to nationalist reactions against the English-speaking elite, to failed and successful efforts to develop standardized formats for localization to vernacular languages, to the real (and imagined) problems faced by North American software firms in dealing with South Asia, and to the emerging conflicts in South Asia between incompatible standards for Internet and Web communication in vernacular languages.