Institute of Social Studies

COMPUTER MEDIATED COMMUNICATION AND NON-GOVERNMENTAL
ORGANIZATIONS. POSSIBILITIES AND LIMITATIONS

A Research Paper presented by

Cristina Y.A. Inoue

(Brazil)

In Partial Fulfilment of the Requirements for Obtaining the Degree of

MASTER OF ARTS IN DEVELOPMENT STUDIES

Members of the Examining Committee

Prof. Cees Hamelink
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I dedicate this paper to my family and friends in Brazil, to my Southern A.A.A. E.* family and ISS friends.

* Africa, Asia, America, Europe

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INTRODUCTION

Computer Mediated Communication (CMC) has been used mainly by market and state actors. However, CMC has also been increasingly used by Non-Governmental Organizations (NGOs,) firstly from the North (environmental, peace, human rights, women, and the so called co-financing or private international development agencies), and the big international environmental and human rights NGOs (whose scope is not territorially defined), but also from the South (the so called non governmental development organization, and the environmental). There are computer networks, as the ones linked to the "Association for Progressive Communications" (APC), dedicated mainly to "providing low-cost computer communications services for individuals and non-governmental organizations (NGOs) working for environmental sustainability, universal human rights and social and economic justice" (COMDEV, 1994).

Shelley Preston (1994) examines the communication dynamics of NGOs at the United Nations Conference on Environment and Development (UNCED), June 1992, Rio de Janeiro, Brazil. According to the author, with the advent of electronic information as a medium for communication among NGOs, citizens from around the world were able to access and share information related to the planning and substance of UNCED. In the first PrepCom session in Nairobi, a guidebook was distributed, titled "Computer Communications and the 1992 UNCED: Alternative Technology for Communication and Participation by NGOs" about electronic information and its potential significance for the Rio Summit. It resulted in the creation of the "Information Strategy Project", proposed by IBASE, a Brazilian NGO, with the objective to make available at a nominal rate an internationally interconnected electronic information exchange system. Thus, NGOs could exchange messages between Riocentro (where the events for the State representatives were held) and the numerous other sites of NGO events in Rio de Janeiro. In addition, other services were provided, like international E.mail, international electronic conferencing, and on line access to UNCED related database systems.

Today there are two inter-related trends: the rise of NGOs as actors in the global political sphere and the increasing use by NGOs of new information and communication technologies, particularly computer networks. However, the processes which involve computer mediated communication (CMC), such as networking through computers, and NGOs have not been fully explored yet. This is understandable for the phenomena are very recent, and can only be traced

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back to the mid-1980s. There have been some case studies about use of CMC by NGOs, like the ones on the creation of Peace Net and Public Data Access (Downing, 1989), international labour communication by computer (Waterman, 1992), CMC worldwide (Lewis 1993), alternative new agencies in South Africa (Murphy, 1994), and the use of computer networks in the Rio 1992 Conference (Preston, 1994). Among some of the authors, there is an understanding that new information and communications technologies have a relation with the rise of NGOs as world actors (Frederick 1993; Preston 1994; Murphy 1994), though it is difficult to be demonstrated. Anyway, northern NGOs and increasingly southern NGOs have been connected through computer networks. Many of these NGOs share a common recognition of the importance of communication. ("Communication, Information, Media and Networking Treaty", International NGO Forum, Rio de Janeiro, Brazil, June 1992). But in what ways is this specific communication process empowering for the NGOs? What are the contradictions? How can one relate CMC and the rise of NGOs as world actors? Which kinds of evidence can one search for? Is it possible to demonstrate? How have NGOs actually used CMC? Has CMC been effective and empowering for NGOs? Are the possibilities explored? Which are the actual limitations? These are some questions that will be explored here.

My objective is to explore the processes involving computer-mediated communication (CMC) and NGOs networks, considering the possible contribution of CMC to the participation of NGOs as actors in the world scenery. The approach taken in relation to technologies assumes that they are not neutral tools or instruments, rather being "sites of struggle". Technologies are inherently "biased" (Bush 1983; Gillespie & Robins, 1989), that is, they are not independent of society's broader social and political biases. However, their potency makes of them sites and stake of struggle, whose outcomes are never preordained.

According to Tehranian (1990: p.214), there is evidence to suggest that modern information technologies have had impact on both democratic as well as totalitarian formations. With the advent of new interactive media, the dual-effects hypothesis takes on new and ominous dimensions. Possibilities for democratization as well as for totalitarianization of power increases. Therefore, an assumption in this study is that technologies may play ambiguous roles.

My focus is on computer communication networks and the use of computer mediated communication (CMC) by NGOs from the South and the North, with aims

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of identifying possibilities and limitations of this way of communicating. The emphasis is on communication processes which occur within "civil society", or better, among actors that make one portion of the organized sector of civil society and are distinct from market or state actors. The "global" arena is the spatial delimitation of this study, as one of the most remarkable features of computer mediated communication is the possibility of overcoming spatial constraints.

This paper is about "alternative" computer mediated communication (CMC). "Alternative" is not conceptualised here but is used as an operational tool to distinguish non commercial and politically committed use of CMC by NGOs from other existing uses. Being alternative does not mean per se better, or empowering.

In fact, this study attempts to explore the interplay of computer mediated communication (CMC) and NGOs networking. The objective is to identify possibilities and limitations of the use of CMC by NGOs and how CMC could contribute for NGOs to act in the global political sphere.

Besides consulting the available relevant literature, interviews occurred with people who work for NGOs, that use CMC, and also with some who do not. Through interviews, attempts were made to find out how NGOs have been using CMC and to what extent it is possible to infer an increase on information exchange, networking and action enabled by CMC. I sent about 120 electronic mail (e.mail) messages containing a questionnaire about the use of CMC, networking and NGOs. Twenty-five responses were received. The sample is relatively small but time and budget did not allow to expand it. Although, the sample provides an overview of the actual situation.

One limitation is the relative lack of theorization in this field. It is understandable considering its novelty. Another limiting factor is the difficulty to demonstrate the impact of CMC. Lewis (1993: p.117) stresses that in systems like APC, the measurement of impact is problematic. "Building environmental awareness through media is a long-term process, and the exact relationship between decision-makers, media, pressure groups and public opinion a matter of debate." Nevertheless, it is important to pursue this explorative study for difficulties will only be overcome when more people start looking at this field. Knowledge is produced in a complex and cumulative process.

Another important remark is that this research about CMC was made possible in part by utilizing the medium itself. Interviews took place through

e.mail. Addresses and articles were received through e.mail as well. Contacts were established with many people using CMC, including with one of my supervisors.

Practical implications can be drawn from the use of CMC for research. The first is having to learn at least basically how to use the medium, which was challenging but also time consuming. Second, I am not aware if there already exists a standard system to make references on information obtained through computer networks. For example, in two articles (Waterman 1992; Frederick 1993), different forms to reference were used. There was not enough time to look for more material on reference systems in CMC. Thus, I created my own. Third, my perception about CMC has been influenced by the software used, the host computer system to which I am connected and the level of interaction the medium enabled me to have with other people who are currently in the computer networks. Lastly, without using the medium, I do not think it would have been possible to pursue this research. Contacts with people in other countries, documents, articles were received and interviews were done through e.mail. Moreover, without experimenting how CMC operates it becomes difficult to really understand CMC possibilities and limitations. One conclusion is that CMC is also influencing the way research can be done.

This exploratory research was motivated by a conviction that in face of the present world, where power is increasingly concentrated, the socio-environmental problems cannot be solved by one group or groups in isolation. Hamelink (1994: p.4) points to the need of developing a global consciousness[1]. While many forces which fight for some kind of change are spread all over the world, the fewer forces which want to keep the status quo are concentrated and act more or less in the same directions. This implies in the need for some kind of coordination and joint action among the dispersed forces, since diversity and pluralism are respected. In this sense, communication strategies should be taken into consideration. CMC could contribute for some change. However, communication and technologies by themselves do not make the difference. They are not "the" solution, neither determine change. The processes are much more complex, and involve social structures, actors, media, messages and the inter-relations that are

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[1] Hamelink (1994:p.4) defines global consciousness

in the sense of an awareness that local events have global consequences, an understanding of the political roots of global problems, a sensitivity to the need of global solidarity, and an acceptance and mutual recognition of social and cultural differences.

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established. Therefore, this paper should not be considered a "celebration" of CMC or NGOs, or a claim to truth. It should be considered just an attempt of someone who is in the search for alternatives...

CHAPTER I

COMMUNICATION AND NGOs AS ACTORS IN WORLD POLITICS

Behind the term Non-Governmental Organization (NGO), there are many realities and world views. The definition itself is a contested terrain. Thus, what is understood by "NGO" is largely determined by power relations within society. The construction of the meaning of "NGO" is part of the struggle between more progressive and cooption forces. The first is linked to actors aiming at society transformation. These consider citizens associations as forces standing besides the state and the market. The other is related to a neo-liberal discourse that consider NGOs simply as instruments that could replace the state in many functions. For this reason, it is important to specify what I understand by "NGOs".

In a broad sense, NGO (non-governmental organization) can be any non-profit civil association, at least, according to the Brazilian law system. The term by itself is only helpful to separate two spheres: the "government" from the "non-government". It is limited for it tends to suggest the centrality of the first sphere and can lead to a dualist view of reality. The so-called NGOs are part of a "third system" (NERFIN, 1991; WOLFE, 1991) the civil society, as a differentiated sphere from the market and the state. The groups and associations that can be placed in this "third system" are very diverse, constituting different categories.

A Brazilian NGO called ISER (Instituto de Estudos da Religiao) has published some studies about the NGOs in Brazil.[2] Those studies are based on the experience of several Brazilian organizations which only recently have been calling themselves "NGOs". These NGOs are non-profit civil associations, whose work aims at improving or transforming society. They have assisted, advised, supported groups that make up the base of the society like peasants, urban workers, indigenous, women, slum inhabitants and so on. NGOs do not represent those groups, being distinct from them.

NGOs are different than Labour Unions, Neighbourhood Associations, CEBs (Comunidades Eclesiais de Base), Rural Labour Unions, "Escolas de Samba", Recreative Clubs, etc. The members of an NGO do not work for their own benefit, but for others groups or to achieve certain broad societal goals. According to Carneiro & Fernandes (1991: p.13), NGOs are private entities,

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[2] I have used particularly two publications:
LANDIM, 1988 and CARNEIRO & FERNANDES, 1991

which are different from small service enterprises or consultant firms. Because they cannot accumulate wealth on behalf of their members and their work should be committed with the concretization of values as social justice, democracy, peace, human rights ecological equilibrium, etc.

NGOs could also be seen as "non-party political formations" as described by Kothari, referring to such organizations in India (1984: pp.541-564). According to the author, non-party political formations should be considered as part of the democratic struggle at various levels. A different social context have to be posited. Non-party political formations should be seen in a point of history when both, existing institutions, and the theoretical models on which they are based, have run their course. Thus, new instruments of political action are searched. Kothari (1984: p.551) affirms that in India

> the non-party formations spring from a deep stirring of consciousness and an intuitive awareness of a crisis that would be turned into a catalyst of new opportunities.

In this way, Kothari (idem) argues that non-party political formations should be seen as responses to the incapacity of the state to hold its various constituents, to its growing refusal to deliver the goods, and its increasingly repressive character, as well as attempts to open alternative political spaces outside the usual arenas of party and government. Furthermore, they should be seen as part of an exercise in redefining politics and finding a political process different from electoral and legislative politics, different also in respect of the basic conception of the function and goal of political activity. Kothari (p.551) continues:

> They see political activity not merely (or even mainly) as an essay in capturing state power, but as a comprehensive process of intervening in the historical process.

NGOs exist in Southern and Northern countries, and define themselves through several "discourses" as development [3], peace, human rights, ecology,

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[3] Referring to the field of non governmental development international cooperation, Mario Padron (1987) distinguishes three kinds of organizations, which are inter-related: 1) The Non Governmental Development Organizations (NGDOs), which are non-profit civil associations, originated in Third World Countries. They are involved in planning, studying and/or implementing development projects and programs. 2) The grassroots groups, which are the beneficiaries. 3) The International Development Cooperation Institutions from developed countries of the North, NGOs which usually provide funds for the NGDOs. (Padron, 1987: pp 69-71).

Although NGDOs and IDCIs come from different geo-political economic regions (South/North), and have different roles, I think that they share some characteristics. They are distinct from popular movements and

democracy, social justice and so on. Even though there are the big "international" NGOs, like GreenPeace, Amnesty International, or World Wide Fund (WWF), this study emphasizes the "national" NGOs from the South and the North.

Korten (1990: p.198) argues that progressive NGOs of both the North and the South are trying to "realize a somewhat elusive concept often referred as North/South partnership". According to him, one manifestation is an increased concern among some Northern NGOs with the development of independent national NGOs in the South. This could be explained by the fact that Southern NGOs have called on Northern NGOs to re-examine their own roles, having classified field involvement as an anachronism which is inconsistent with self reliance. Southern NGOs have also noted the impact of many policies of Northern governments and Northern-dominated international agencies regarding debt burdens, structural adjustment, anti-ecological development projects such as construction of large dams, and so on. They have argued that Northern NGOs should devote more attention to strengthening Southern NGOs, to raising awareness of Northern constituencies about the role of the North in sustaining underdevelopment in the South, and to advocating for fairer policies (Korten, 1990: p.92).

While recognizing the relatively contradictory character of the relations between Northern and Southern NGOs, Landim (1993: p. 227) affirms that NGOs open space for a new style of internationalism, with informal networks in which autonomy, pluralism and mutually trusting relations are preserved. On the other hand, she calls attention to the fact that South/South relations are extremely precarious, and that they should be encouraged.

It is useful to remind that due to unequal access to resources, there is the possibility that Northern NGOs exert some kind of dominance over Southern ones, reproducing the North/South hegemonic relations.

NGOs and Computer Mediated Communication (CMC)

Murphy (1994: p.10) argues that

> In the 1980s, many NGOs were being perceived as communication institutions, part of a re-alignment of objectives into what has been called a "third generation approach" of a "constructive advocacy" in

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grassroots groups or organizations. Both are intermediaries organizations, whose members seem to have similar social basis. They do not represent the popular sectors. Most of them are middle class committed professionals, intellectuals and activists from the South or the North, who support grassroots groups.

which achieving localised results is counterbalanced by a strategic use of leverage on more significant social actors, specially governments and multilateral institutions but also through development education in school system and the media. This approach inaugurated a self-conscious formulation of north-south linkages which move beyond specific campaigns by constructing an international quasi diplomatic movement in counter point to official governmental and commercial discourse.

Sjef Theunis (1990) says that the NGOs have increasingly perceived the need for mutual exchange of information. More time is being invested in networking, for people want to learn from other people's experiences. This sharing is mainly between development organizations that work in the same field and are known to each other. Mutual communication is almost lacking where isolated development NGOs are concerned, or in countries with repressive regimes or legislations which curtail their freedom to function. In those situations there is lack of sufficient information and communication. This realisation is now growing and leading to a revaluation of the role of mutual communication. There is a more outwardly directed motive to no longer see mutual communication as a luxury, as well as a growing awareness, specially among Southern development NGOs, that the handling of political issues is in shambles. Theunis (p.42) asks: "how can issues like the debt be dealt with, if NGOs do not take a combined stand against powerful institutions? How will it be possible for NGDOs (Non-Governmental Development Organizations) to affect the international development agenda without intensive communication? How can NGDOs develop strategies in a world where large powers are increasingly concentrated and elusive?"

In Afonso's (1990: p.53) view one concrete sign that NGOs have started to consider the importance of communication is the foundation of APC (Association for Progressive Communication). It is an international association created to foster the development of non-profit computer networks, whose goals are: struggle for social justice and respect for human rights, concern for the environment, and fostering sustainable development and participatory democracy.

Afonso (1990: p.51) affirms that

Networking, in various forms, has become an international goal of the NGOs' world. The main objective is to exchange reliable information quickly and efficiently in order to attain common objectives, and to learn from each other in the process. While the contents of NGO networking vary widely, the forms are converging recently to an increasingly extensive use of telematic means.

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Murphy (1994) argues that the emergence and application of computer networks controlled and operated by NGOs can be seen as a result of the convergence of critical advocacy NGOs and low cost information technologies. The author (p.23) considers computer networks as an "alternative channel within the latest capital inspired design of communication technology". Those networks echo alternative adaptations of previously evolving communication technologies.

In Murphy's view (1994: p.20), the emergence of critical advocacy NGOs at a moment of post cold war offers convergent opportunities. "NGOs reflect the class fissures and fractions of competing elites. Yet, in the articulation of their own trajectories of power, they enact a counter point material base to state/public and commercial structures."

There is a tendency of Northern NGOs and Southern, in a smaller number, to participate, or at least to be more "visible" in the international political arena. Evidence of this could be their presence during the recent United Nations Conferences, like the Earth Summit in Rio de Janeiro, Brazil, 1992; or the Human Rights Conference in Vienna, Austria 1993; or their lobbies in international bodies, like the World Bank, European Parliament, International Monetary Fund etc. Some human rights NGOs have had noticeable impact on international public opinion, collecting and disseminating information on violations, and have also influenced international public policies (see Van Boven 1989). However, it is difficult to demonstrate how representative is the participation of NGOs in world politics. Nevertheless, their presence in this arena does represent a change in the patterns of the world system, largely dominated by the states, transnational corporations, and international financial institutions. Looking only at the NGOs' universe, I think that their presence in world politics is related to changes in their strategic orientations, concerning communication, which has resulted in attempts of NGOs from the South and from the North to build coalitions and networks. In this sense, the creation of computer communication networks could offer some possibilities. Computer mediated communication (CMC) could contribute to NGOs networking.

Concerning Northern and Southern NGOs participation in world politics and the tendency of forming networks and coalitions, it is important to call the attention to the risks of losing the links with the grassroots and of replicating hegemonic practices. These are due to the complex institutional, political and economic matrix of power position occupied by NGOs. Questions

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of democratic accountability and legitimacy should always be taken into consideration.

Murphy (1994: p.22) points to the potential risk of NGOs replicating hegemonic practices

> NGOs are bound up in a complex institutional, political and economic matrix of power. Integration into this nexus put them in constant danger of echoing or replicating hegemonic strategies. To the extent that alternative broadcasting initiatives are not so much popular as oppositional, they have a structural affinity with NGOs representing a 'struggle between more central and more marginalized allegiances within the power-bloc'. In this way, new media linked to NGOs will share in opportunities and dangers attendant upon the maturing of the sector as a whole. (ibid: p.22)

Thus, building coalitions and networks can reinforce the "NGO movement". This by itself is not a guarantee of concretization of the values of social justice, ecological sustainability, peace, human rights, around which they gather. "Networking for networking" could lead to the rise of new power groups, whose legitimacy to act on behalf of the people could be questionable for lacking democratic accountability. Democratic relations within NGOs and NGOs networks should always be taken into consideration. On the other hand, without networking, that is, some kind of exchange of information, or coordination, coalition and joint mobilization, it seems difficult for NGOs to contribute to construct societies based on these values.

As mentioned, today there are two trends: the rise of NGOs as actors in the global political sphere and the increasing use by them of new information and communication technologies, particularly computer networks. In my view these trends are inter-related. However, the processes which involve computer mediated communication (CMC), more specifically networking through computers and NGOs, have not been fully explored yet. The focus of this paper is on computer networks and Northern and Southern NGOs linked through them. The objective is to identify possibilities and limitations of computer mediated communication (CMC) for NGOs, considering the interplay of these trends.

In the next chapter, I describe approaches concerning new information and communication technologies to establish the theoretical framework for this study.

CHAPTER II
THEORETICAL APPROACHES ON INFORMATION AND COMMUNICATION TECHNOLOGIES

Computer mediated communication (CMC) is made possible by the so called new information and communication technologies. It can be regarded as one modality of the "new media" (Van Dijk 1993a, Van Zoonen 1992). Studies which, to a certain extent, also embody CMC focus on new information technologies (Tehranian 1990); social problems, effects/impacts of computer (Forester 1980 e 1990); communication networks (Mulgan 1991, Mansell 1993); effects of computer communication in organizations (Sproull and Kiesler 1992).

New Media is defined by Van Dijk (1993a: p.21) as constituting the integration of infrastructure, transport, management, services, kinds of information and modes of communication in the domains of telecommunications, data communication and mass communication, besides creating the opportunity of interactivity to a certain level. He argues that integration and interactivity are the two crucial concepts concerning the new media: integration of kinds of information and modes of communication and higher levels of interactivity.

In the following part, I present some perspectives on information and communication technologies which set a background for this study, which concentrates on the use of computer communication networks by Non-Governmental Organizations (NGOs). There exists little theoretical discussion specifically on this issue. Most studies deal with how the technological features which characterise CMC are suitable to the work of NGOs (Lane 1990; Luber 1993). One possible explanation for the relative lack of theoretical work is the newness of the phenomena and the tendency of CMC to be mostly used by transnational corporations and military and government actors, to whose benefit they were originally meant. For example, in a study about the relation between gender and the new information and communication technologies, or the new media, Van Zoonen refers to the lack of relevant research. Her statement (1992:p. 11) also applies to research on alternative computer mediated communication.

> The new media have received an impressive amount of attention, but its range has not been very wide. Economic, technological and policy concerns are the leading issues in the field. Questions about the use of new media have been inspired mainly by industrial concerns and tend to focus on processes of adaptation. Some scholars have expressed concern about social divisions being intensified by new media (information rich/information poor). Informational inequities are expected to run parallel to

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divisions of class, ethnicity, gender and region. Gender is rarely a separate concern. While new media research has largely neglected gender issues, feminist theory and research has not yet shown much interest in new media.

It is also important to be aware that development and application of information technologies are related to processes of globalization of the capitalist economy, with diverse effects like deterioration of terms of trade between industrialised and non-industrialised countries, raising unemployment rates, commodification of social life and cultural homogenization. Moreover, information and communication technologies can increase control and surveillance. Both Tehranian (1990) and Van Dijk (1993b) argue that they allow centralization and decentralization of power, the strengthening of authoritarian rule and democratization.

In a study about the political economy of the emergence of intelligent telecommunication networks, Mansell (1993) affirms that in the 1990s such networks have been implemented in more than thirty countries and these accounted for nearly 80 percent of the world's telephone lines. According to Mansell, advanced information-processing services are important mediators of social, political and economic relationships. However, he also acknowledges that many people in developing countries have had little or no access even to traditional telephone services[4].

According to the author, such disparities in access to the means of electronic communication are likely to grow, not only between industrialized and developing countries, but also within these countries.

Mansell (idem) argues that the current process of network evolution is giving rise to new terms and conditions of access to public networks. These may become increasingly divisive. The forces of technical, economic and political change in global markets are creating pressures to abandon traditional public interest concerns which have guided telecommunication policies in the industrialized countries. Those policies were previously devised to ensure that public networks enable smaller and larger firms and residential consumer to make telephone calls and to use more advanced services. Although access to public networks provides no guarantee that

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[4] Mansell provides the following figures (1993: pp.ix-x):
The telephone penetration rate (number of main telephone lines per 100 people) in the 1980s
India = around 5
Africa = less than 1.
OECD Countries in 1990 = 43 (OECD 1992)
slightly lower than this in the European Community

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economic resources and skills will be available for users to take advantage
of these services, the terms and conditions of access are instrumental in
determining who can participate fully in the social, cultural, political and
economic life of society.

It would be naive not to bear these limitations in mind. We are not in
the so called "information or post industrial society" (See Hamelink 1986,
Mulgan 1991). My concern in this study is to explore the processes which are
involved in non-commercial use of computer communication by Non-Governmental
Organizations (NGOs), looking for evidence of possible positive inter
relations between those communication processes and the rise of NGOs in the
global political arena. Through a "technological" point of view, CMC offer
possibilities like a certain level of interactivity and access, storage,
retrieval, distribution and reproduction of large amounts of information,
overcoming limits of distance and time. However, a closer look at reality
demonstrates that there are still many gaps when access to technologies is
concerned, not only between Northern and Southern countries but also within
these countries. Access and assessment are differentiated through socio-
economic, cultural, gender, generation lines. I am conscious of the social
constructed character of technologies. They are not neutral tools or
instruments. Access and assessment are differentiated through social-economic,
gender, geo-political, cultural lines. Gaps which exist in society tend to be
reproduced (I also have experienced some of them, while doing this research).
Thus, this study is placed in a "tensional" space between the possibilities
of CMC like: interactivity, overcoming time and space constraints, as well as
decentralized access to information, and its intrinsic limits and
contradictions.

Even though NGOs have increasingly used CMC, it is important to consider
that in a broad picture, economic, social, cultural and gender gaps tend to
be reproduced when addressing the issue of access to new information and
communication technologies. Thus, the problem of access to CMC remains in most
Southern countries. Another remark is that access is also differentiated
through gender lines. Van Zoonen (1992) mentions studies which focus on how
women and men relate differently to technology. Women have been relatively
absent from the institutions which invent, design and create technology. They
are consumers of technologies that facilitate domestic work, hardly
participating in the use of other types of technologies like telecommunication
or computer technology, unless forced to by office automation.

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While recognizing the inequalities and unevenness in access and use of new information and communication technologies, I would rather assume that the effects and social impacts of technologies, as of any other social construction, are "sites of struggle". Their effect and impacts are not something predetermined by the forces of the transnational corporations, the 'global market' or by the strategic military needs of states. It is important to take into consideration the argument developed by Gillespie and Robins (1989), who stress that the new information and communication technologies are inherently biased [5], questioning those who predict that these technologies per se have a decentralizing impact. Their geographical inequalities, or "spatial bias", result from the socio-economic contexts within those technologies are produced. However, they do recognize that technologies can be seen as "sites of struggle".

According to Gillespie and Robins (idem), the new technologies of communication are inherently spatial. Changing the relational distance between places, they help to construct new economic and social geographies and new forms of spatial division and integration. Moreover, "new communications technologies do not just impact upon places; places and the social processes and social relationships they embody also affect how such technological systems are designed, implemented, and used" (1989: p.7). The focus of their argument is that, despite their "distance shrinking" characteristics, new communications technologies constitute new and enhanced forms of inequality and uneven development, being far from overcoming and rendering insignificant the geographical expressions of centralized economic and political power (idem). But, even though the authors reject the view which claims that those technologies will have only progressive and liberating social implications,

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[5]   Bush (1983) presents a feminist perspective on technology, inviting us to "unthink tech-myths" (p.153). That is demystify technology, considering it neither good, nor bad, nor neutral. According to her, every innovation has both positive and negative consequences.

> To believe that technologies are neutral tools subject only to the motives and morals of the user is to miss completely their collective significance. Tools and technologies have what I can only describe as valence, a bias or "charge" analogous to that of atoms that have lost or gained electrons through ionization.... particular tools or technologies tend to be favoured in certain situations, tend to perform in a predictable manner in these situations, and tend to bend other interactions to them. Valence tends to seek out or fit in with certain social norms and to ignore or disturb others.(Bush 1983: 154-155)

Technologies have a valence or bias. Thus both their use and effect tend to be expressions of a valence to function in certain ways in certain settings. Bush (idem) gives some examples: guns are valenced to violence, television is valenced to individualization, automobiles and microwave ovens are individuating technologies while trains and campfires are accretionary ones. (p.155)

BUSH, Corlaan Gee, 1983, "Women and the Assessment of Technology: to Think, to Be, to Unthink, to Free" in ROTHSCHILD, Joan, Machina Ex Dea. Feminist Perspective on Technology, NY: Pergamon Press.

they do recognize the importance of technological advances to the nature and organization of society.

Gillespie & Robins (1989: pp.8-9) asserts

> Technology has an inherent "bias", for it can never be neutral or independent of society's broader social and political biases. At the same time, however, <u>its potency makes it invariably the site and stake of struggle, the outcome of which is never preordained</u> [6]"

Van Dijk (1993a: p.22) calls the attention to the fact that in all media an instance enters between human being and his/her perception of reality, and not all senses are used. Thus mediated perception always result in some kind of reduction. Only some knowledge can be gathered with it and only specific skills are called upon. However, opposed to the reductions, compared with direct experience, old and new media also offer extensions. Increasingly, the limits of distance, time and lack of information can be overstepped.

Tehranian (1990: p.6) relates the possibilities offered by new information and communication technologies to society democratic prospects:

> If we view democracy as a cybernetic social system of networks in which there are many autonomous and decentralized nodes of power and information with their own multiple channels of communication, the new media are increasingly providing the technological conditions for such a system. There are at least six features of the new information technologies that might account for this potential: increasing interactivity, universality, channel capacity, content variety, low noise and high speed.

Tehranian (1990: p.xvii) argues that information technologies consist of messages, media and modes, that is social networks and structures of communication. Their impact should be analysed in the context of historically and culturally specific situations, the spaces they occupy, the social linkages they establish and the powers they enhance or limit. In Tehranian's view, no universal effects theory is possible. About the impact of those technologies on the world economy, politics, and culture, the author affirms that it has been profound and lasting, yet controversial, identifying four perspectives (1990 pp. 4-6):

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[6] My emphasis

- technophiles: optimists who believe that the present technological revolution in information storage, processing and retrieval has already inaugurated a 'post-industrial' information society, with higher productivity and plenty at world centers that will eventually trickle down to the peripheries

- technophobes: pessimists about such promises of widespread productivity and plenty. They point to the threats that increasing robotization and computer-assisted design and manufacturing hold for rising structural unemployment and socioeconomic dualism; to the perils that new databases pose for political surveillance and individual privacy; and to the dangers that homogenization of culture by media monopolies present for cultural autonomy and diversity. Critiques of the new technologies and their institutional support systems in the modern technocratic state and corporation.

- technoneutrals: consultants with few theoretical pretensions and considerable interest at stake not to alienate their clients. Neutral position with respect to the question of effects.

- the **technostructuralists**[7], who argue that technologies are by themselves neither good, nor bad, nor neutral. This is because technologies developed out of institutional needs and their impact is always mediated through institutional arrangements and social forces, of which they are integral part. To understand the impact of information technologies therefore we must turn to an analysis of the social structures through which they produce their employment-generating or reducing, political centralizing or decentralizing, cultural homogenizing, or pluralizing effects.

In the preface of <u>Technologies of Power</u>, Tehranian (1990: pp. xiv e xv) calls the attention that this title

> suggests that information technologies, like all other technologies, extend and augment our powers _ for good and evil, for better or worse, for democracy or tyranny. (...) Information technologies have historically played a dual and paradoxical role in this process. On one hand, they have provided the indispensable tools and channels for centralization of authority, control, and communication typical of

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[7] My emphasis

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modern industrial state. But on the other hand, they have also supplied
the alternative channels of cultural resistance and ideological
mobilization for the oppositionist forces (...)."

Tehranian (idem) goes on to affirm that, in general, the major media
have served centralizing forces, while the small media, like the alternative
press, or audio-video production/transmission, and personal computer
networking, have provided the channels for community resistance and
mobilization.

It is common-place to state that the new information and communication
technologies have evolved from military and transnational corporation needs.
However I assume that if we consider them as sites of struggle, it is
interesting to look at the role of NGOs in this battlefield and which outcomes
we can expect from it.

Van Zoonen (1992) constructs a cultural account of the relation between
gender and new information and communication technologies (NICTs). She
provides an interesting perspective to relate computer mediated communication
as a site of struggle and the NGOs that have tried to network through it. The
author recognizes the most obvious problematic concerns about the relation of
the economic structure of the NICT industry and the social and cultural
articulation of NICTs:

> the development of NICTs has been strongly shaped by economic and
> military interests. Some feminists would argue that the
> embeddedness of NICTs in the military-industrial complex
> determines their masculine and destructive character and prevents
> any kind of socially relevant use (Van Zoonen 1992: p.11).

Thus, Van Zoonen does not deny that the social-economic context in which
NICTs are produced is a strong factor in understanding the particularities of
their design, distribution and use, but she prefers not to consider it to be
the only relevant and determining context of NICTs. The author states that it
is sufficient to take the social-economic conditions under which NICTs are
produced as a circumscribing factor, inflicting valence on technology, i.e.
a bias towards a particular kind of use and social relevance (referring to
Bush 1983).

Bush (1983: p.157) argues that it is important to distinguish three
other contexts within which technology operates:
- the user context in which issues such as the immediate personal advantage

created by the use of technology are relevant;

- the ecological impact of accepting technology versus the impact of continuing current techniques;

- the cultural context in which the effect of technology on gender, the social system and the organization of communities is discussed.

Van Zoonen (1992 p.12) affirms that

> The actual social meaning of NICTs is not only determined by their social-economic location but depends on other contexts as well (...). In this article, I shall focus on the cultural context of NICTs, the meaning inscribed in them through social mechanisms of symbolic negotiation.

Concerning the use of CMC by NGOs, Van Zoonen's (1992: p.23) consideration about contexts opens some possibilities to go beyond technology biases:

> Although Bush discusses the effect of technology in these contexts, it can be seen quite easily how these contexts can affect technology as well. When technology is continuously subjected to the same kind of use, its meaning as a technological product will change.

Van Zoonen (1992: p.22) argues that even though technology is a product of social relations and reflects patriarchal ideas and values, to arrive at a cultural understanding of gender and technology it is necessary to put the constructed nature of technology in the front of the analysis. Thus, besides the social economic context in which technology is produced, other contexts are equally relevant in establishing the meaning of concrete technological products and practices. She exemplifies with a study on domestic communication technologies by Morley and Silverstone, who propose to conceive (domestic) technology as 'text' in a double sense (p.23):

1) the most simple textual form of technology refers to the messages it spreads;

2) technology itself can be seen as text as well in the sense that it is surrounded by convictions and prescriptions about its relevance for society, the benefits for its users, the appropriate way of using it etc.

It is important to take into consideration Van Zoonen (1992: p.24) assertion that

The constructed character of technology should thus be interpreted much more radically in order to fully appreciate the way technology takes on meaning and relevance in everyday life. It only seems that new information technologies come to us in the form of finished technical equipment and products, such as video recorders, terminals and television screens, but user and cultural practices endow these material objects with meaning and values which in turn reverberate in the production context. (...) <u>NICTs usually have open-ended qualities as well that will be 'closed' by patterns of use and their location in the social and power relations that distinguish the contexts of use.</u>[8]

Concerning the use of technology, Sproull & Kiesler (1992) argue that technology effects should be seen from what they call a second level perspective which emphasizes that technologies can have both efficiency and social systems effects. They call the last "unanticipated deviations" or amplifying changes in the social system. "The most important effect of technologies may be not to let people do old things more efficiently but instead do new things that were not possible or feasible with the old technologies" (p.4).

According to Sproull & Kiesler (idem), communication technologies lead people to pay attention to different things, changing how people spend their time and what they think is important, allowing one to have contact with different people and leading people to depend on one another differently (p.4). "Change in interdependence means change in what people do with and for each other and how these coupled functions are organized in norms, roles, procedures, jobs, and departments. Social roles, which codify patterns of attention and social interaction, change" (p.5). However, these changes do not alter "human nature" or fundamental process of society (p.5).

As Sproull & Kiesler (idem) construct their argument through a functionalist perspective. Focusing on the effects of technologies on organizations, they leave out broader contexts and effects. Access and assessment which are unequal are not considered. Moreover, changes in communication and their impact on broader socio-political contexts involve other factors besides technologies. Technologies by themselves are not cause of change. On the other hand, Sproull & Kiesler give a "hint" for how to look at the potentials of CMC, that is to look at new things that can be done that were not possible or feasible with the old technologies. Thus, we should try to identify new possibilities brought about by CMC, how these possibilities

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[8] The underline was added by me.

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are explored by NGOs and to what extent it is possible to infer an increase in information exchange, dialogue and coordination of action enable by CMC.

Van Zoonen 's conclusion about the relation between gender and technology could be applied to the case of computer mediated communication and NGOs. The author (Van Zoonen 1992: p.25) states that

> gender and technology are both constructed in discursive practices intersecting among others at the individual, social and symbolical levels, and producing particular and often contradictory results. In other words, concrete implementations of and applications of NICTs can be considered as sites of intersecting discourses that need to be accommodated and appropriated by, for instance, the individual user, network, organization or community involved in order for the NICT to make sense and acquire relevance[9].

If technologies are 'sites of struggle', it is important to consider that the actual use and other contexts of new information and communication technologies can affect their original meaning. If NGOs have started using computer mediated communication (CMC), perhaps, they can construct a different meaning for this form of communication. As mentioned, CMC offers possibilities like some level of interactivity and better access, storage and exchange of information, overcoming to a certain extent limits of distance and time. Thus, CMC could contribute to change the way NGOs communicate with each other, offering new possibilities to coordinate action. Ideally, CMC could enhance NGOs networks and enable them to act more in the global political arena. On the other hand, it could reinforce existing gaps among themselves, as well as, between them and popular or grassroots organizations, which would raise problems of legitimacy and democratic accountability. But how have NGOs actually used CMC? Has CMC been effective and empowering for NGOs? Are the possibilities explored? Which are the actual limitations?

In the next chapter, I describe computer mediated communication (CMC), possibilities offered by CMC, and some cases of how NGOs have been communicating and networking through CMC.

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[9] My emphasis

CHAPTER III
COMPUTER MEDIATED COMMUNICATION, NETWORKING and NGOs

Computer Mediated Communication

Computer mediated communication (CMC) can be considered one modality of the new media (see Chap II, Van Dijk 1993a, Van Zoonen 1992). It is enabled by the combination of technological devices as satellites, telecommunication infrastructures and computers, the so called new information and communication technologies. I found several characterisations of computer mediated communications (Lane 1990; Luber 1993; Lewis 1993). Some consider the forms CMC can take: computer-to-computer and electronic mail system (Lane 1990); others on the patterns of data transfer technologies: bilateral, multilateral, centralized, decentralized (Luber 1993). Lewis (1993) considers the possibilities of message exchange through computer communication networks: e-mail, electronic conference, and bulletin boards. These types of message exchange (without mentioning bilateral or direct computer-to-computer communication) are called by the author as computer mediated communication (CMC). Even though the authors use different names: e.mail systems (Lane), multilateral networks (Luber), computer mediated communication (Lewis), in fact they are mainly referring to the use of CMC by NGOs.

According to Lane (1990), computer mediated communications can take various forms. One involves the direct link up of two machines, possibly across the telephone network. So data are exchanged between two parties. He calls it direct computer to computer communication. The author defines 'Electronic mail' (e-mail) systems as the exchange of messages, computer files or programs through a large central computer. Thus E.Mail systems enable computer users to transfer messages back and forth via a large central computer, which is known as the e-mail host computer. In contrast to direct computer-to- computer communication, the sender and the receiver are never in direct contact with each other. The host computer is operated by the organization which runs the system. In large systems there may be several interlinked host computers rather than just one. Any organization or individual wishing to use e-mail should join an e-mail system and have access to a micro computer with a modem and to a telephone line. A communication software is also necessary. It enables the "interaction" between the computer and the modem and also between the computer and host system. It is preferable to use one which enables reading and writing off-line, so that, the time spent on-line is shorter.

The computer should be hooked to a telephone line with a cable and a modem [10], that modulates the characters written on computer screens into acoustic signals. These are sent then via the telephone line to another computer, which is likewise connected to the phone line with a modem. The signals are demodulated again into characters so that the user can read on the screen (Luber 1993: p.2).

Any computer user, linked to an e-mail system, can call up the central computer via the telephone network and leave messages in the electronic mailboxes of other subscribers, who in their turn can call the central host computer and 'collect' the messages which were left for them. Lane (1990: pp 13-14) argues that E-mail is different than the direct transfer of data between two parties. It is generally most relevant as a public system for exchanging information. It can have advantages in terms of compatibility and cost, particularly on international calls.

According to Luber (1993: p.2), the technology for communicating via computer and phone has developed in various patterns, mostly in the form of electronic networks or electronic databases. He distinguishes four computer-phone combinations (pp 2-3):

- bilateral data transfers from one computer to another, used mostly by multinational corporations like banks;

- multilateral networks are structured so that as many crisscross electronic communications as possible can be established between users of a network. It is usually established by an organization which provides a central processor for data transfer, enabling several services for the users.

- centralized data networks allow multiple user structures without major incentives for user-to-user communication

- decentralized computer networks allow users to talk to each other about common interests. Users are also able to use certain centralized services on offer from the system itself in the form of small databases or information pools.

Lane (1990) and Luber (1993) provide a guide mostly for NGOs staff utilizing computer communication, or intending to use it. Therefore the authors describe certain technical aspects, costs, advantages, (Lane also describes the disadvantages). They report case studies as well, focusing on

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[10]   The substitution of conventional telephone lines by fiber optics and the digitalization of communication systems may turn modems unnecessary.

NGOs computer networks. Both Lane and Luber agree that international computer mediated communication can be cheaper than other forms like fax, telex, or phone calls. Another advantage is the possibility of transferring large amounts of information in relatively little time and covering large geographical distances. Lane (1990: pp.18-20) calls attention to the fact that CMC can provide good international exchange, however CMC is not feasible in all countries.

Lane (1990: p.23) points main disadvantages as complexity to use; lack of immediacy, that is the communication depends on the people regularly login on the computer network, otherwise messages will just sit there unread; risk of failure increases because CMC involves different technologies; complexity to sum up costs; and higher costs usually are paid by NGOs from developing countries. Thus an organization should not rely only on one method of communication. According to Lane the advantages are lower costs compared with fax and telephone; good and relatively cheap international communication; the possibility of sending multiple copies, editing and storing messages, and so on. Also CMC encourages the exchange of information, being a tool to the development of existing and new networks of NGOs (Lane 1990: p.20). In fact, the author stresses that CMC features offer a number of facilities that can aid networking and the interchange of information between partners or within closed user groups. Possibilities like sending multiple copies, editing and storing messages, and lower prices can encourage more exchange of information than telephone or fax. Lane (1990: p.25) argues that

> networking implies the coming together of organisations on an equal basis for the purpose of sharing resources and information. It is nothing new and has gone on by post and by phone for years. However, CMC is particulary well-suited to it. Information circulated on a network is often important but not confined to a deadline, and participants are generally committed to the success of the system. In such situations, potential drawbacks of CMC: lack of immediacy, risk of failure, are minimised, while the strengths: good international communication, cheap broadcast to multiple destinations, are maximised. Besides supporting established channels of information exchange by improving communication, CMC can also stimulate the expansion of existing networks and the development of new patterns of communication (idem, p.25).

It is important to notice, however, that even though CMC is technologically well-suited for networking, commitment is an important element for the development of the network, for each one should login to the system regularly, information should be shared, and issues discussed. That depends

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on the institutional arrangements set by people who work in NGOs, internally and within the network.

To consider the advantages/disadvantages of computer mediated communication is not enough. Technology is more than a tool (See Chapter II). The question concerning the use of CMC cannot only be considered through a cost-benefit analysis, or advantage vs. disadvantage. It is important to be conscious of the "biases" technologies carry. However, if we consider new information and communication technologies as sites of struggle, the actual use, institutional arrangements, perception and prescriptions around it, as well as communication patterns established are very important.

Networking

There are some systems which specialise in providing computer communication services for the non-commercial sector. Lewis (1993) and Lane (1990) distinguish two groups, which are formed by small computer networks. According to Lane (idem p.38), one set of systems gather under the umbrella of the **Association for Progressive Communication (APC)**. APC is constituted by autonomous institutions (usually NGOs) which run host computers for regional networks. Some of them are: Alternex in Brazil, GreenNet in England, the Institute for Global Communications (IGC) in the USA, Nicarao in Nicaragua, PeaceNet Sweden, Pegasus in Australia and the Web in Canada. IGC runs a host computer for four different networks: PeaceNet, EcoNet, ConflictNet and HomeoNet. All of APC systems are non-profit and are linked together, facilitating communication between them.

The other main camp is the GeoMail group, a commercial system. It constitutes an association of separate GeoNet host computers run in different European countries and one in the USA. There is a **GeoNet** host in Britain which specialises in providing services for non-commercial organizations. About 600 subscribers from around 45 countries have mailboxes on this host, which is administrated by the Poptel group (idem pp. 38-39).

FidoNet is different from the above systems. Fido is a popular software package used to run private electronic bulletin boards, often on a phone line from a private house. Some of small e-mail systems in developing countries use Fido software. Individual bulletin board operators can agree to a regular automated exchange of messages between their systems. This results in a web of linked Fido bulletin boards in different countries and continents, which

is collectively known as Fidonet (Lane 1990: p.39).

These larger systems could be better visualised as networks of networks. What is important is that those larger networks are connected to each other through several "gateways", therefore communication is possible among users of different networks.

Lewis (1993) considers "alternative" [11] computer mediated communication (CMC)[12] as the exchange of messages via computer and can take different forms: one-to-one (e-mail), one-to-many (bulletin board) or many-to-many discussion groups (electronic conferences). 'E.mail' (electronic mail) is the simplest form of CMC and perhaps the most used. It is defined as one-to-one exchange. But in fact e.mail can also be one-to-many, for it is possible to create 'mailing-lists', which enable one user to send automatically the same message to all which are part of her/his mailing list.

In the message exchange via a host computer, the "sender" calls up the host to leave messages to users of the same or other hosts. The "receivers" should call their host computer to "check" their electronic mailboxes if there are new messages. Usually, when one calls the host computer she/he can send, receive and reply messages using simple computer commands.

According to Lewis (1993), other modalities of computer mediated communication include electronic bulletin board (one-to-many) and electronic conference (many-to-many).

Lane (1990: pp.29-30) argues that any user of a computer network can post a message in a 'public area' known as electronic bulletin boards, or conferences. The messages are usually grouped in different areas of interest. A brief summary of the contents is attached to each message. Any other user can browse through each of those groups reading items which she/he wants. The "public areas" on the networks which come under the umbrella of the Association for Progressive Communications (APC) are known as 'electronic conferences'. Each one concerning different areas of interest or specific ongoing issues. On the APC systems a conference is divided into different topics. Any topic may have a series of comments attached to it by participants in the discussion. These comments will not be visible unless a given topic is entered.

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[11] The term "alternative" was added by me, as an operational distinction.

[12] The modalities of CMC described by Lewis (1993) exist in systems where host computers intermediate message exchange among different computer users (E.Mail system for Lane, 1990; multilateral networks for Luber 1993).

Bulletin boards are geared towards the simple posting of information in the "public area". Comments are treated as new items of information and will be seen by everyone who visits the bulletin board (Lane 1990 p.30).

Lewis considers electronic 'bulletin board' as "one-to-many" message exchange. In certain systems, each item of a bulletin board is in fact an one-to-many message. Each topic of an APC electronic conference can carry one message with several comments from different people, being a "many-to-many" message. In principle, anyone who is browsing around conferences or bulletin boards can also write responses or add new topics. What is important either in electronic conferences or electronic bulletin boards or also news groups, echo mail, forums and so on is the possibility of posting messages in a "public area" that everyone who is part of the computer network can read and respond. "Computer conferencing" (GreenNet 1994) is a good analogy. It can provide a structure for carrying on an ongoing "conversation" among people who do not have to be in the same place at the same time.

As argued, computer mediated communication (CMC) seems to have been developed out of the needs of the military and business sectors. However, it has been also increasingly used by academic/scientific institutions as well by the so called Non-Governmental Organizations (NGOs). Lane (1990: pp. xix-xx) affirms that

> The adoption of information technology by many small and medium-sized organizations is taking place in series of waves. The first is the installation of computer for tasks such as word processing, accounting and information storage. Such development is a direct result of the appearance of cheap but powerful computers - the microcomputer 'revolution' of the early 1980s. The second is the further exploitation of microcomputer power to improve and increase communication between like-minded organizations. This happens particularly through the development of appropriate e-mail systems and partners networks. The third wave that will break over us in the coming years is the creation of database systems aimed at the needs of non-commercial organizations. We will then witness the full potential of information technology harnessed in the cause of progress and social justice.

I think what was stated above is useful as a chronological orientation, even though it does not apply uniformly among NGOs from the South and from the North. But what he affirms about the "third wave" could lead one to think that adopting new information and communication is a simple "catching-up" process through which technology is harnessed to serve NGOs' goals. As it was argued, technologies in general, and new information and communication technologies,

in particular, cannot be seen only as tools or instruments. They are not good, nor bad, neither neutral. They all have biases or valences resulted from their design, production and distribution contexts, which indicates a complex process for NGOs or any other users to overcome these 'biases', and to alter its original meaning.

Among the debates about the democratic possibilities of new information technologies, Murphy (1994) identifies one view that

> maps the hegemony of multinational capitalism designing and imposing information technologies by which oppositional forces are controlled, distracted or coopted. (p.19). Another perspective positions that "hegemonic dominance and definition of communication and culture practices are not socially constructed as a network of over-determining instruments and patterns of oppression. Rather, these practices are sites of struggle where the disempowered can take advantage of momentary weakness or inconsistencies on the part of the hegemonic projects. At these times, on specific terrains, people may be able to re-interpret cultural processes and appropriate communications functions to deploy altered meanings and develop oppositional positions. (...) Specifically, low cost communication technologies and NGO computer-network offer opportunities to decentralise while maintaining global reach (p.20).

Alternative Computer Mediated Communication

Lewis (1993) focuses on the use of computer communication by NGOs, particularly the ones related to APC or GeoNet, as his article is part of a work on alternative communication. He does not mention computer-to-computer (Lane, 1990), or bilateral computer communication (Luber, 1993). APC and GeoNet gather systems which are usually specialised in offering computer communication services for the non-commercial sector, mainly NGOs and groups of activists. Describing alternative computer mediated communication, Lewis excludes the use of a computer network to share resources such as databases, programmes, printers and the power of a Central Processing Unit (Lewis 1993: pp. 117-18). I would rather include the use of computer networks to access databases, as it seems to be a modality that tends to become increasingly important for NGOs (see Lane 1990). Through computer communication networks, NGOs have started to access specialised information available in databases, which can be very helpful for their work.

Downing (1989) describes the creation of Peace Net and Public Data Access, two computer communication projects. In his view, such projects have

the potential of developing a grassroots political culture through telecommunications. He recognizes that the hopes of those for whom computers can provide ready solutions to social dilemmas or transform infighting into collaboration, political apathy into energy needed some "cold water" (p.154). Downing partially agrees with F.Christopher Arterton's argument (note 1 of his article) which emphasizes the importance of user's assumptions in determining how media technologies are deployed. While admitting that technology itself cannot make a difference, Downing (idem) argues that examples of its use (provided by Peace Net and Public Data Access), and of its potential for being simultaneously decentered and coordinating, may combine to illustrate the scope for new modes of political communication. Downing (1989: p.157) states

> (...) other applications can move the process of computer communications out of the hands of the few. Information can circulate nationally and internationally among political activists who wish to coordinate their campaigns, so the merits of local democracy need not be reduced by its constraints" (p.157). PeaceNet was founded in 1986, it represented a confluence of four organizations, aiming to improve communications inside the peace movement.

According to Downing (1989: pp.157-159), PeaceNet and EcoNet, an environmentalist network acquired later, are now run by the Institute for Global Communications (IGC), a division of the San Francisco-based public charity called Tides (IGC presently runs also Conflict Net and HomeoNet). In 1987, the Institute for Global Communications began a cooperative relation with GreenNet, a computer network in London. They started than operating as mirror images on either side of the Atlantic. A conference on one exists automatically on the other, and users are free simply to log on to whichever system is nearer to them. This initiative opened considerable scope for sharing information on matters of mutual concern, from weapons control to toxicity to refugee rights. Later on, as this process of formation of international links resulted in the creation of the Association for Progressive Communication (APC).

Downing (1987) asserts that PeaceNet resources are primarily in its conferencing and electronic mail functions. His statement refers specifically to Peace Net, but is applicable to other non-commercial computer networks as well. Progressive organizations who are users have different interests like, the antinuclear movement, Central America, support for Native Americans, herbal medical knowledge and farm community development. According to the

author (p.159), users of Peace Net speak positively about the opportunity to communicate with similarly minded groups and projects they would otherwise never have known existed.

Concerning the impact of (alternative) computer mediated communication (CMC), Lewis (1993) places them on two levels: personal and social. About the latter, he relates the use of CMC by NGOs in two different situations: in international conflict and its media coverage; and in international meetings, so that priorities and perspectives of less well off countries, supported by many NGOs, are reflected on the agenda.

Lewis (1993: p.23) provides examples of use of CMC, during the Gulf War. An user of Peace Net "downloaded" topics from "media.east conference" (electronic conference) and placed copies of them in local cafes. Others published newsletters for distribution in their communities, another in rural New South Wales (Australia) passed information to local bookstores and to local community radio stations. An important feature was that peace actions and news of belligerent activity by nations claiming to be peaceful could be found on PeaceNet that were not reported in the public news media.   Lewis (1993: pp.124-125) describes the use of CMC to mobilise people and resources (information and funds) for "The Other Economic Summit" (TOES), which is held at the same time and place as the Group of Seven (G7) major industrialised economies meetings. TOES started in 1984 to put forward an alternative agenda and alternative priorities from those of the G7. This example, according to Lewis, was selected to assess the impact of a deliberate initiative in news generation. The coordinator of the Institute for African Alternatives (IFAA) looked into the 'toes.summit' conference (electronic conference) and realised that they stopped even though TOES was coming. She sent an electronic message (e.mail) to her host operator at GreenNet. Within two weeks a string of messages was created that raised funds and mobilised people. IFAA was able to establish a global critique panel that participated actively with the London conference as it proceeded. The CMC process involved creation of topics-on-line, in the 'toes.summit' electronic conference, matching all the six main sessions and the thirty seminars; uploading of documents and critical appraisals; and interactive discussions in the 'toes.general' electronic conference. In the latter, there were important statements by representatives of NGOs from countries like Malaysia, South Africa, Brazil and Russia. The CMC process also involved downloading of documents and sending them by e.mail, telex, or fax to people who did not have access to an APC computer network.

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Computer mediated communication was also used by NGOs during the UNCED 1992 process. Shelley Preston (1994) examines the communication dynamics of NGOs at the Earth Summit. During the first PrepCom session in Nairobi a guidebook was distributed titled "Computer Communications and the 1992 UNCED: Alternative Technology for Communication and Participation by NGOs" about electronic information and its potential significance for the Rio Summit was distributed. This resulted in the creation of the "UNCED Information Strategy Project", proposed by IBASE (Brazilian Institute of Socio-Economic Analysis) a Brazilian a research and consultancy NGO which operates the AlterNex Node in Rio de Janeiro, affiliated with the APC.

According to Preston (1994: p.1),

> with the advent of electronic information as a medium for communication among NGOs, citizens from around the world were able to access and share information related to the planning and substance of UNCED.

Preston (1994) argues that the Conference was also significant due to its inclusive nature: close to thirty-five thousand people attended; more than one thousand NGOs registered at the conference, approximately one-third of them from the Third World providing the largest face-to-face forum of its kind for NGO representatives. The presence of NGOs was largely the result of a less competitive, more streamlined UN accreditation process.

In the final report of the "UNCED Information Strategy Project", Afonso (1992) recounts that since 1990, the Association for Progressive Communication (APC) had been collaborating with the UNCED Secretariat to provide means of information dissemination and exchange, including APC's participation in carrying out UNCED's Global Electronic Network (GEN). Through the GEN, NGOs and individuals, as well as government officials and researchers were able to receive and send messages and important documents related to the preparatory process leading to the Rio 1992 Conference. The UNCED Information Strategy Project in Rio de Janeiro, Brazil (UNCED ISP/Rio) was proposed by IBASE to the UNCED General Secretariat and to NGOs' instances such as the Global NGO Forum and the Brazilian NGO Forum in the end of 1990. The initiative was justified by the concern that there would be heavy demand for information exchange which should be facilitated to consolidate the Conference's goal of full participation by NGOs worldwide. According to Afonso (idem),

the main objective was to make available at nearly free cost an internationally interconnected electronic information exchange system which would allow NGOs and other users to exchange messages between the official site of events (Riocentro) and the several sites of NGOs' events in Rio.

IPS/Rio system was connected to the Internet through the Brazilian National Research Network (RNP). It had as its main host and operations center the AlterNex Node. Afonso (idem) reports that the system made available to UNCED participants four basic network access and service centers:

- NGO Communications Center (NCC), at Hotel Gloria: twenty-five 386 PCs in a Novell local area network (LAN), linked to AlterNex via a Netblazer dial-up router; one laser printer available for local word processing and printing of documents and messages.
- ISP Center at Riocentro: eighteen 386 PCs in a Novell LAN, two Unix workstations and a Cisco 64 Kbps router, linked to AlterNex through the Rio Net backbone; two laser printers.
- ISP Area at the International Press Center (IPC) of the Global Forum: five 386 PCs linked to AlterNex via a Netblazer dial-up router.
- AlterNex operations center: five terminals publicly available for direct connection to the network.

Besides access from terminals in the above sites, users could access the network through eight error-corrected dial-up lines and two X.25 circuits (32 channels). Access from any terminal linked to the Internet was also possible, thus making the ISP/Rio available for access from any of more than 400,000 Internet computers.

According to the report (Afonso 1992), at the four ISP/Rio centers, users could self-register and use all services[13] of the Freenet, including:

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[13]   For a nominal fee, users could also (Afonso, 1992):

- send e-mail messages to any telefax or telex machine at much lower cost than through long distance calls;
- exchange e-mail with most commercial e-mail services;
- have full access to the APC conferencing system of more than 300 continuing international conferences on dozens of themes, UNCED-related or otherwise.

- access to any Internet system worldwide (upon request);
- e-mail exchange with practically all international non-commercial e-mail services, including Internet, Bitnet, APC network, Fidonet, and others
- access to a collection of UNCED-related databases available on the Internet, especially the full collection of official and NGO documents; databases provided by NGONET, such as a 12,000 entries' database of NGO addresses, were also available;
- internal e-mail exchange within the several sites of UNCED;
- participation in several international, continuing electronic conferences on UNCED-related themes;
- word processing and laser printing of documents and messages.

Afonso (idem) evaluates that the terminals were utilised at full capacity for most of the time at the NCC, as well as the five terminals at IPC. At Riocentro, the use by NGOs was not as intense, partly due to the fact that the majority of NGO activities was carried out at the Global Forum sites. Journalists, some NGOs and several official delegations used Riocentro's ISP facilities for communications and word processing. Furthermore, the APC team held a series of training workshops at Gloria Hotel during the events. The author affirms that it was very difficult to count individual users of the service during UNCED, since they could log into the system using a common account called "freenet" which did not require password. Nevertheless, nearly 1,400 accounts were registered at AlterNex during the Conference. Moreover, through CMC, dissemination of important documents such as the NGO treaties and Agenda 21 was crucial to extend participation to people who could not be in Rio. An additional service was the distribution of a collection of disks containing all official UNCED documents available on the network. This service continued after the Conference, as several official documents were still being uploaded by UNCED staff.

Preston (1994) states that any individual with access to the necessary hardware could "participate" in the UNCED and more importantly these new technologies and information channels enabled NGOs to organize, inform and activate global citizens. Although, it will be difficult for NGOs to maintain the momentum from UNCED, electronic communication will help (See note 23). The UN Conferences (Ex: International Conference on Population and Development, Cairo, September, 1994; World Summit on Social Development, Copenhagen, March

1995; World Conference on Women, Beijing, September, 1995) could be opportunities for NGOs and interested citizens to participate, locally or via computer networks [14], in global negotiations related to sustainable development.

This is only partially true because not all NGOs can have access to new technologies. Additionally, CMC is still concentrated in Northern countries, English speakers predominate. As mentioned, CMC is made possible by a combination of new information and communication technologies, which makes communication more complex. While the potential for information exchange grows in relation to volume, time and space, other limiting factors can restrict communication. As technologies are not neutral, access is differentiated and inequities which exist in society tend to be reproduced (See Chapter II). Access should not be considered only in terms of "haves" or "haves not", but also in terms of gender, generation, language, and computer skills. Computers are more difficult to deal with than fax-machines or telephones. CMC requires certain technical skills. The risk of communication failure also increases. CMC by itself does not mean more or better communication. However, it should be recognized that communication patterns among NGOs have been changing. Therefore, it is important to look closer at reality.

In the next chapter I describe the process and the main findings of a survey done through e.mail. Questions were sent to some people who work (or worked) for NGOs and use CMC. Interviews were done with a few who do not use it. This "experiment" of researching and using CMC for the research itself cannot perhaps be considered "scientific" but was certainly a learning exercise.

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[14] Preston (1994) gives examples of electronic conferences on APC networks:
- icpd.general (Discussions about The Cairo Conference 1993 on Population and Development)
- iisd.news (About the Summit on Social Development)
- women.unwcw (Updates on the Women's Conference)

CHAPTER IV
NGOs and CMC AT WORK

Introduction

Murphy (1994) argues that the emergence and application of computer communication networks controlled and operated by NGOs (or specialised in providing services for NGOs) constitute an "alternative channel within the latest capital inspired design of communication technology", which could be seen as a result of the convergence of critical advocacy NGOs and low cost information technologies (p.23). Considering hegemonic dominance and the definition of communication and culture practices as sites of struggle, the emergence of critical advocacy NGOs at a moment of post-cold war prevarication inside global hegemonic power centers, offers certain convergent opportunities. Low cost communication technologies and NGO computer-networks allow decentralisation while maintaining global reach (p.20).

From the examples of Public Data Access and Peace Net, Downing (1989) concludes that: first, computer communication projects allow the directed gathering and analysis of data on key issues that affect communities and subgroups of the population that might otherwise be overlooked or ignored. Second, by mobilizing a constituency otherwise separated in time and space, computer communication can help generate enough people and publicity to pressure powerful political interest. Third, computer communication can serve not only as information nerve centers but also as forums for developing the requisitive language and agendas for political action. Finally, by linking people across national borders, computer communication can contribute to addressing the common problems of humanity such as human rights, toxic waste, and peace, by strengthening the resources and reserves of democratic culture (Downing 1989: p.162).

Downing describes the possibilities offered by computer mediated communication. These result in part from its specific technological features. The combination of information and communication technologies has made the gathering, retrieving, storing, and processing of information much more efficient, as well as increasing the possibility of exchanging it, overcoming, to a certain extent, constraints of time and space. These technological features are claimed to be well suited to the development of existing or new networks. In this sense, the creation or strengthening of networks of NGOs can merge with processes involved in CMC. I am assuming that for NGOs to play a

more significant role in world politics, it is very important to be networked in a socio-political and 'electronic' sense.

The potentials of CMC have been mentioned. However, information and communication technologies:

> consist of messages, media, and modes (i.e., social networks and structures of communication). Their impact should be analysed in the context of historically and culturally specific situations, the spaces they occupy, the social linkages they establish, and the powers they enhance or limit. No universal effects theory is thus possible (Tehranian, 1990: p.xvii).

And furthermore, as Murphy (1994: p.23) points out,

> the emerging world of computer networks cannot be proclaimed as a panacea for democratic practice whether or not critical advocacy NGOs are involved. The ability of the non-establishment to use computer technologies for an alternative channel is an accidental by-product facilitated as much by the inter-connectability of hardware as by lapses or omittance in state and corporate controls which vary from nation to nation.

An empirical exploration

It is not enough to consider the potential of CMC or theoretical perspectives on technologies. Tehranian (idem) alternates theoretical discussions and empirical case studies in his work about technologies and democratic prospects. I also found it necessary to look, empirically, at how NGOs have been using CMC, and at how they perceive its relevance as well as the relevance of the formation of networks (electronic and socio-political). Other questions are, to what extent is it possible to link the participation in networks with increase in information exchange and action? Is it already possible to notice any impact of the use of CMC? The focus of the more "empirical" part of this paper is on the medium itself and the actors involved (mode of communication). Because of time constraints, I could not identify and analyse the content of the messages exchanged through CMC.

The objective here is to explore CMC processes, aiming to find possible changes in the ways NGOs communicate, brought about by CMC. Implicitly, there is the question of how a more interactive medium affects communication. Can technology by itself make a difference? Concerning broader impacts of change in communication processes, how does the use of CMC contribute in enabling NGOs to act in world politics? Ideally speaking, CMC can enable NGOs to

exchange information and to coordinate action, without the NGOs necessarily being in the same geographical area or region, or being in the same place at the same time. Thus one could infer that CMC could enhance NGO networks.

Assuming the importance of NGOs being present in the global political arena and that networking could be one way of strengthening their participation in this arena, the proposition was that there could be a positive inter-relationship between the rise of NGOs as actors in the global political arena and the processes involved in computer mediated communication (CMC).

To look for evidence of the above, besides consulting documents and the relevant literature, I "interviewed" people who are or were working in NGOs. This was done mainly through electronic mail (e.mail). I also interviewed some people from NGOs in which CMC is not generally used.

For the "interviews" through e.mail, I prepared a short questionnaire, with open questions (in English and Portuguese), to discover:
- how NGOs perceive networking and computer networks;
- how NGOs have been using CMC and if it does really enhance networking, i.e., not only access to information but exchange and coordination of action.

I also wanted to find evidence of a correlation between the processes of information exchange (through electronic mail, conference, bulletin board), and information gathering (through access to databases), and NGOs'action in world politics.

The questions carried an intrinsic assumption that CMC would be empowering for NGOs if used not simply as a tool to gather information, but as interactive means for increasing the exchange of information and dialogue among NGOs, which could lead to local action and more joint activities in the global level.

I have concentrated, mainly, but not exclusively, on NGOs in Brazil and the Netherlands, for practical reasons. Firstly, their "electronic addresses" were available through Antenna, Alternex or GreenNet, which are nodes, or computer networks, affiliated to the Association for Progressive Communication (APC). I was connected to Alternex (in Brazil) and have been connecting to Antenna (in the Netherlands). Secondly, coming from Brazil and being in the Netherlands for about a year, obviously make this universe of organizations more "familiar" to me. This is important, for to do exploratory research about a completely new case would not be feasible within the available time.

Selecting NGOs

In total, I sent 120 e.mail messages with my questionnaire to fifty-three (53) people in the North and sixty-seven (67) in the South (from which sixty-two in Brazil). The selection procedure was the following:

A) As I have access to Antenna, a host computer in the Netherlands, I obtained a list of all 426 users of the system through the "user" command (15/07/94). I than compared this list with two other lists of Dutch NGOs (one of the Dutch NGOs Alliance for Sustainable Development and the other of an Electronic Networking Work Group composed mainly of NGOs) and sent the questionnaire to 11 (eleven) Antenna users who were either on both lists or work with peace or environment NGOs.

B) Through e.mail, I contacted Alternex Support in Brazil; they sent me a list of their users, which was obtained through the key words "NGO" or "ONG" (e.mail, 05/08/04). The list had 139 electronic addresses. The questionnaire was sent to a total of 62 (sixty-two) electronic addresses of NGOs or of individuals who work for them. It was sent to the ones that are part of the "Forum of Brazilian NGOs" (Forum de ONGs Brasileiras), and also to some from the list, whose key words, besides "NGO", were "international politics", "networking", "communication", "international cooperation", "technology", "information", "north-south relations", "NGOs treaties", and "UNCED".

C) A friend who subscribes to GreenNet obtained a list of 94 GreenNet users through the key word "Netherlands" (Aug 1994). I chose 34 users whose other key words were environment, peace, and human rights.

For the three groups described above, I created 3 different "mailing lists", which is a feature in computer communication which allows you to send, at once, the same e.mail message to all the addresses which are part of the list. As I was still learning how to create an electronic mailing list while identifying people to "interview", I had to send the questionnaire to three (3) NGOs in the Netherlands with "normal" (that is, one by one) e.mail commands.

I also sent the questionnaire to people working in other NGOs: four (4) in Italy, one (1) in England, two (2) in Peru, one (1) in Bolivia, one (1) in Uruguay, and one (1) in South Africa.

Considerations on the methodology

From the 120 messages I obtained twenty-five (25) responses. The sample is relatively small, and the response could be considered too low to be

significant. However, again time constraints and budget limitation forced me to remain with this level of responses. Even though the "relevance" or "significance" of the sample could be questioned, the views expressed are from people who work for different kinds of NGOs (Environmental, Peace, Human Rights, Development) from two geo-economic areas, South/North. This provides an overview of how CMC has been used in the "NGO world".

From the 25 responses, one, instead of answering the questionnaire, sent an article that responded to some of my questions; another apologised for not answering it, but affirming that CMC is "certainly important for their everyday work" (Resp9, 27/08/94); and a third one expressed interest in the results of the research as the questionnaire could not be answered because of delay in receiving the e.mail due to change of address. Thus, in fact, I have twenty-two (22) answered questionnaires, 15 (fifteen) from Northern NGOs and 7 (seven) from Southern ones. To "store" them, I created computer files, which I named "Resp" with a number which corresponds to the order in which they were received. As all the e.mail messages come with the name of the sender, the electronic address and the date, I think this is enough as far as referencing is concerned. Thus, the "reference system" will be like the above which indicates the name of the file and the date. Attached is a list of the files (Appendix A).

It is important to notice that more than a scientific experiment, this is a learning exercise in researching something that is new, not only as a topic but also in what concerns research methodology and techniques. The medium which has been researched was extensively used for the research itself. The implication of that is having to learn how to use it as I went along, which is time consuming (In fact, I still do not know how to use all the commands of the host computer to which I connect). Nevertheless, learning how to use the medium was an essential part of the research process. Otherwise it would not have been possible to proceed.

One could argue that the use of the "object" of the research for the actual researching process may result in "biases" and lack of "objectivity". I agree that, when writing about CMC processes, much will be a result of my own perception about using the medium, and this will be largely shaped by the particular software and host computer system to which I connect. But I do not think it would have been possible to do a research on CMC without knowing, at least basically, how it operates. Firstly, because some information about CMC and NGOs was not available otherwise, secondly e.mail was crucial to contact

people in other countries as well as in the Netherlands. Moreover, to know the possibilities offered by CMC, it was necessary to learn at least basic computer features and commands.

About the responses, the first general comment I would like to make is quite personal, but I think it is important to make as we are speaking here about communication. I found in general that they were very friendly. Their words expressed "person-to-person" informal communication. Many were interested in knowing the results and some even offered to help further, either answering other questions I might have, or sending me some material. In fact, I received, through e.mail and "normal" mail, files, documents and articles from people whom I have never met, whom I had contacted either because of the questionnaire, or because they are working or doing research in the same field. Without e.mail, it would not have been possible for me to contact so many people, in different places and countries, in relatively short time, nor would it have been so easy for them to respond. This could be seen as evidence that the medium offers, to a certain extent, the possibility of more information exchange.

Other evidence provided by this process is that CMC has had an effect on the way research can be done and also on the human relationship that can be established through such a process. As already mentioned, I really was helped by many people whom I contacted through electronic mail but have never met in the "real" world.

Main Findings

One remark is the possible Northern "bias". I sent the questionnaires, through e.mail, to 53 NGOs in the North and to 67 in the South (I did send a second set of e.mail messages to the 62 addresses in Brazil to remind about the questions). The responses were twenty-five (25). The level of response was higher from Northern NGOs, fifteen [15], compared to nine Southern responses [16]. Probably, most of the questionnaires arrived at their electronic mail boxes, as usually the system returns undelivered e.mail messages. There was not the technical possibility of receiving an "acknowledgement" if all the e.mail messages with the questionnaire were "opened" (checked by the users).

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[15] Among these fifteen, one did not actually answer the questionnaire.

[16] Among these nine, two did not actually answer the questionnaire.

Thus, it is difficult to explain the level of the response. I cannot know whether the e.mail messages were not "opened", or if lack of time, funds, or interest prevented the people from answering. If the first of these is true, it would mean that most of the people to whom I sent the questionnaire are not actually logging in to the computer network or their login frequency is very low. In Brazil, many NGOs have few staff members and the telephone rates are quite high, so time and funds could have prevented them from responding. However, there is no way to verify this. Further research on CMC is certainly necessary.

Table 1 presents an overview of how many e.mail messages containing the questionnaire were sent and how many responses were received.

TABLE 1: Distribution of Questionnaires by Region and Country

Country	Users on list	Number sent	Main interest	Number of Respondents
North				
Netherlands (Antenna)	426	11	Environment, Development, Peace, Human Rights	
Netherlands (GreenNet)	94	34	Environment, Development, Peace Human Rights	
Netherlands (general)*			Environment, Development	
Italy			Development	
England			Development	
Sub-total				15
South				
Brazil (Alternex)	139	62	Development, Environment, Human Rights	
Peru		2	Development	
Bolivia		1		
Uruguay		1		
South Africa		1		
Sub-total				7
Total		120		22**

* Sent through one-by-one e.mail commands.
** Actually answered questionnaire.

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The questions assumed that there has been a tendency for NGOs to move towards broader political arenas and become more "visible", as was seen, for example, at UNCED, Rio de Janeiro, 1992, and the Human Rights Conference in Vienna 1993. If this assumption is true, networking, coalition building, and communication processes should become more important. But how do people who work in NGOs perceive the importance of networking? Is it really important? Why? These were the first questions I had and they were formulated as:

In your view, why is it important to network with other NGOs. Could you describe networks you are involved with?

Purposely, the question was formulated very openly, so that there was more "space" for comprehending their own interpretation and perception. Consequently, in general, the answers did not separate networking (network of NGOs) and network, as a medium, or physical infrastructure, (computer communication networks). Some tended to accentuate networking, and others computer networks.

About the action of networking, all agreed on the importance of forming networks. The justifications were: exchange of information, sharing scarce resources, strengthening campaigns, enlarging own perception about the world, working together, supporting each other, avoiding double work etc. As most of the answers indicate, the key element of networking seems to be information exchange.

Concerning computer communication networks, many answers were about the importance of being electronically networked for cost-efficiency reasons: it is cheaper than telephone or fax and faster than postage. Few emphasized the possibility to access, gather, store and spread information, or to overcome geographical distance. One who did, namely Roberto Villar, from an environmental NGO in the south of Brazil (Resp3, 14/08/94), affirmed that to be electronically networked with environmental NGOs is crucial for dealing with problems which have no frontiers, and for cooperation with people and institutions.

Assuming that NGOs operate as information providers, William Bowles (Resp4, 15/08/94), who is working in South Africa now and has also worked in the field of NGOs and computers in the USA and Central America, asserts that networks facilitate collection, analysis and distribution of information and enable coordination of activities locally, nationally and globally. In his view, a reason for developing

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networks of information exchange is that it is the single element that gives cohesion to an otherwise unregulated and chaotic sea of structures all engaged largely in collecting and disseminating information of one kind or other (Resp4, 15/08/94).

I asked about the frequency of connection (login) to a computer network and which ones are used. All use non-commercial networks (some are even connected to more than one non-commercial system). In general, these networks offer similar "services". Thus, once "logged in" all the interviewed would technically have the same possibilities. The login frequency is illustrated in Table 2.

TABLE 2: Frequency of Connection for Northern and Southern NGOs

Frequency	North	South
3x day or more	4	3
2x day	1	
1x day	7	4
3x week		
2x week	1	
1 x week	1	
No answer	1	

This may not be representative since recipients of the questionnaire who login very infrequently may have assumed the survey was out-of-date when they read it; those who deal with large volumes of mail may have deleted the survey without opening it. Still, about 80% of the respondents use e.mail at least once each day which in my view is enough, considering the constraints of time and funds. Even twice a week would be enough to maintain a reasonable level of communication. Once a week is too low, for it means that receiving and sending international e.mail messages would take more than a week, almost like normal postage, and also that any reaction to an issue from an electronic conference would take at least a week, if writing is done off-line.

Ideally, to login at least twice a day would be the optimum choice. If one uses a software which allows reading and writing off-line, it would be enough to retrieve information and "download" files and messages in the first time, reading everything off-line, and so writing and preparing responses to be "uploaded" on the second time.

Since all of them connect to non-commercial networks that have in general similar features, offering more or less the same possibilities if connection is done on a regular basis at least once a day, one could infer that there is the potential of increasing international information exchange. However, it is essential to keep in mind that there is still the structural limit for increasing information exchange which results from the differentiated access to technologies and resources between and within the North and the South.

Technically, the possibilities offered by computer communication networks are more or less the same for all NGOs to which the questionnaire was sent. The responses indicate a reasonable frequency of connection. So it is important to consider how NGOs are actually using CMC.

With which purposes do you use CMC?

In general, most of the NGOs responded by saying that the main purpose for using CMC is to exchange mail. Some use it to spread news about activities, to circulate articles, proposals, drafts, compilations, to receive requests, to access updated information, or to find names and addresses. Other less frequent responses included: to work on the same document with people from different parts of the world, to exchange information with project partners, or to prepare meetings. According to Bowles (Resp4, 15/08/94), some processes that could be facilitated by CMC are: preparing and organizing projects, meetings, conferences, debates; writing papers; news distribution, etc.

E.mail is mostly used to communicate with other NGOs nationally and internationally. Through the answers, it can be noticed that there is a tendency for the flow of information to concentrate in Europe, North America and Latin America. However, due to the kind of question asked, it is not possible demonstrate this numerically, nor to evaluate whether the level of international exchange has increased with the use of CMC. I was more interested in possible examples of joint activities enabled by CMC. There were very few. One was mentioned by Ian Tellam, from WISE, The Netherlands. A group of North-American environmental NGOs created a "mailing list" to send the draft of a letter about the Narmada Dam Project, in India, through e.mail, inviting NGOs to reply if they wanted to sign it. Afterwards, the signed letter was published in the New York Times and in the Financial Times

(Informal interview, 11/10/94, not registered). Another joint activity was described by Sergio Schlesinger (Resp2, 13/08/94). In the beginning of 1995, PACS - Instituto Politicas Alternativas para o Cone Sul (Alternative Policies for the Southern Cone Institute)/Rio de Janeiro, Brazil, together with the "Fondation Pour le Progres de l'Homme/France" will arrange simultaneous conferences in four continents about themes concerning the World Summit on Social Development, Copenhagen, Denmark, March 1995. In parallel, they will use computer networks to inter-communicate, exchange information and discuss what is being said on each continent.

Concerning the use of CMC, Kudo and Salazar (Resp19, 15/09/94), from DESCO, Peru, call attention to the fact that it is necessary to learn, become accustomed to and to manage a new way of working and communicating. As was mentioned, CMC is more complex than other communication means, so training is a cost factor. This is often overlooked. However, without acquiring basic computer communication skills, it becomes hard to fully explore its potentials. This should be seen as a limitation for it means that access is conditioned not only by availability of funds or equipment, but also by a certain level of education, concerning some basic knowledge about computers, as well as of foreign languages (in the case of non-English speakers). In my view, this is an intrinsic limitation of the medium of which we have to be conscious.

Through a technological perspective, CMC is well suited to networking (see Chapter 3). If this is so, it could enhance NGO networks, contributing to their participation in world politics. I asked the NGOs how they perceive the relation between CMC and networking.

Computer mediated communication (CMC) offers possibilities which could optimise NGOs capacity to network. Do you agree or disagree? Please give examples.

Here the content of the answers varied more as the question dealt specifically with CMC. Ten agreed. Eight of them expressed an "it depends" view. Three did not answer, one disagreed. Sergio Schlesinger (Resp2, 13/08/94) from PACS - Instituto Politicas Alternativas para o Cone Sul (Alternative Policies for the Southern Cone Institute)/Rio de Janeiro, Brazil, agrees and affirms that the agility in the information exchange allows innovative experiences as the one between PACS and "Fondation Pour le Progres de l'Homme/France" (described above).

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William Bowles (Resp4, 15/08/94) says that CMC could not only contribute to networking but also to performing more effectively as NGOs. He referred to the case of the Gulf War, when the use of CMC demonstrated its power.

> It was the first time that a non-corporate (or governmental) system was used to track and disseminate news and information on what was really happening (...). However, I must add a caveat; the network is incomplete if it cannot move and utilise the information into the wider world. This requires a very different attitude to prevail on the part of ngos and how they see their role especially as advocates, lobbyists, pro-activists.

Cristiano Donato (Resp8, 23/08/94), from "Centro de Cultura Luis Freire", Recife, Brazil, states that CMC certainly could optimize NGOs capacity to network, but the majority of NGOs in Brazil are not yet familiar with this way of working. An example is an electronic conference on "Justice and Security" which they have opened and which so far has been under-utilised. On the same line, Patricia Zarate (Resp23, 21/10/94), from IEP - "Instituto de Estudos Peruanos", Peru, agrees that there are the possibilities, that are not yet fully explored.

In the responses, expressions like "still" and "not yet" are quite frequent. It seems that for many this is still a period for "adjusting".

According to Ace Suares (Resp10, 05/09/94), from SNORE - Support Network on Renewable Energy, The Netherlands, CMC could optimize NGOs capacity to network. But it depends on several factors. For example:
a) the level of user friendliness from the softwares;
b) the level of support from the host computer system;
c) easy access to mailing lists or listservs;
d) phone costs.

Suares (idem) also indicated some problems, including:
a) NGO host computers (e.mail hosts) suffer from low finances and from expertise of only a few people, which increases vulnerability of the network;
b) large diversity of systems and standards used by hosts makes access more difficult.

Hans Verolme (Resp15, 12/09/94), from Ecooperation Fondation, the Netherlands, affirms that the possibilities of archiving documents, mailing of agenda and meeting reports, and informal discussions about the content of work with colleagues who are far away are very important. Also, CMC is time and money saver, when working with people from different time-zones. However,

in his view, optimization depends on many factors:

a) information needs of the end users;

b) userfriendly software (people need to be comfortable using it);

c) time to analyse and rethink what is received, for information overload is quite common;

d) to learn to "sift" through electronic conferences;

e) cost of training;

f) informality of the medium sometimes works against it. People react less formally, which can be an advantage. But for "serious" decision-making it is not.

Another aspect, pointed by Verolme (idem) is the prospect of maintaining open contact, the democratic aspect of CMC. "Openness is one of the essential characteristic of the medium". For,

> conferences are open to all to read (and most to write). E.mail messages are spread around easily, just like with a photocopier (one disadvantage is the possibility to edit texts and so create apocryphal versions of someone's opinions).

However, Verolme (idem) remarks that person-to-person contact is too important to be replaced, especially because trust is so important is the NGO world. "You wouldn't dream of planning a strategy/campaign if the others involved were not known to you". He justifies the need for trust with the case of "World Bank-ers" eavesdropping in electronic conferences to anticipate NGO reactions to World Bank projects.

Another important remark was by Ian Tellam, from the World Information Service On Energy/WISE, who says that CMC makes international networking more "attractive". But, as access is still problematic for most southern NGOs, there is the risk of northern NGOs, which do have access, will become relatively more "powerful" (informal interview 11/10/94, not registered). In his view, at the moment, there is not a substantial North-South dialogue taking place through CMC. It is at present too expensive for most Southern groups to take part in the "luxury" of responding to electronic conferences, or even for regularly exchanging mail (Resp1, 26/07/94).

Dirk Jan Dullemond (Resp11, 04/09/94), from the "Nederlandse Kernstop Coalitie" (Dutch Antinuclear Coalition), The Netherlands, disagrees with the notion that CMC optimizes the NGO capacity to network. In his view, CMC is a means of communication that is additional to other means of communication:

meetings, phone, mail, magazines etc. It depends largely on the field of interest. "If I would like to network with an organisation in Nepal CMC offers very little to me. On the other side CMC offers more to us in the field of "hightech" issues e.g. nuclear industry".

Hans Verolme (Resp15, 12/09/94), from the Foundation Ecooperation, The Netherlands, also raises the problem of access to CMC. Concerning the Foundation's aim to promote sustainable development agreements between The Netherlands and Costa Rica, Bhutan and Benin, he recognizes the advantage of speedier exchange of information and dialogue. However, whereas in Costa Rica many NGOs are connected, in Benin and Bhutan coverage is low or non-existent.

No doubt if CMC is to contribute to NGO participation in world politics, the possibility of access should be widened. Otherwise, the existing inequalities which are already seen in international political arenas will be reinforced among the NGOs.

Some respondents expressed the view that CMC can in many cases replace fax and telephone, or that it enhances networking because it is a money and time saver. This is true, but also demonstrates that CMC possibilities are not fully explored. It is important to note that price is a relative advantage as far as southern NGOs are concerned, and many times training costs are disregarded. As stated, CMC is more complex than telephone or fax. There is also a less objective cost of "adapting" to something new which implicates in learning, and creating new procedures, customs and routines. Only cost-efficiency arguments are not enough to justify the use of computer communication. It is important to look at possibilities which did not exist before like:

- "discussing" issues, coordinating work, organizing activities, preparing documents without having to be at the same place, at the same time;
- gathering, storing and exchanging information more easily, with less paper and "manual" work. This can be done faster and also in a way that overcomes certain geographical constraints (I used the word 'certain' because access is very differentiated between, and within, North and South).

One advantage is the possibility of finding information otherwise not available. Many NGOs affirmed that news on United Nations events, on the Bretton Woods institutions and the Global Environmental Fund (GEF), on local campaigns in different parts of the world, and on some specific issues like patent law, biotechnology, genetic engineering, sustainability indicators, and technologies in general can be found through computer networks. However, a few

pointed to problems of how the information is displaced, or of lack of a better system to organise it. Others complained about information overload and irrelevance of some material received through CMC.

As argued, changes in communication do not result from the introduction of technology per se, or by doing what was done before in a more "efficient way". The inter-relations are more complex. However, it is important to notice new possibilities that did not exist before. Few examples of new communication possibilities brought by CMC were mentioned by NGOs. From the responses, it seems that CMC is being mostly used to replace fax or postage. The table below demonstrates that e.mail is the most used modality of CMC by NGOs, followed by electronic conferences.

TABLE 3: Modality of CMC and its Priority

Modalities / Priority	Electronic Mail	Electronic Conference	Access to Data Bases	Electronic Notice Boards
# 1	18	4		
# 2	3	12	4	1
# 3		2	7	
# 4			1	

E.mail offers other possibilities than simply sending letters more efficiently, as some respondents noticed. For example, Jan Stevens (Resp22, 13/10/94), from BothEnds, The Netherlands, says that, apart from being faster and cheaper, it can encourage people to send more information than through normal postage. He has observed that people tend to send more information, which otherwise would not happen if they were to use normal postage[17]. It is really more practical to send a file through e.mail, as one only has to type some commands and it is "gone". It is also possible to create "mailing lists", which allows to send the same message to several people at once. Another possibility is to "subscribe" to "listservs", so that texts are automatically sent to one's electronic mailboxes. Thus, technically it is possible to raise the level of information exchange only using e.mail, although I think that electronic conferencing allows more interaction. Issues can be "discussed" by

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[17] This is partly consistent with my own experience while doing this research. People sent me much information not only through e.mail but also through "normal" post service. It seems that is not only the fact that it is easier to type a "send/reply" command that encourage people to share information. Perhaps, the sense of "community" does exist in the computer networks.

more people. It seems to be a more multilateral/horizontal way of exchanging information, yet not so used by NGOs. NGO participation in the discussions on electronic conferences is not very high (Jagdish 1994; Afonso 1994).

There are few examples of NGO activities facilitated by CMC. One, which was mentioned above, was the Brazilian and a French NGO arranging simultaneous conferences in four continents (Resp2, 13/08/94). Kudo and Salazar (Resp19, 15/09/94), from DESCO, Peru, say that to consult documents in the United States Congress it is not necessary to travel to Washington anymore. They can use a "gopher" for that. Villar (Resp3, 14/08/94), from NEJ/RS - "Nucleo de Ecojornalistas do Rio Grande do Sul", Brazil, uses the electronic conferences to find information which is not available in the mass media. For example, in a GreenPeace electronic conference, there was an alert about a Croatian ship with industrial garbage to be disposed in Equador, Colombia and Chile. Villar and his colleagues spread the news through the "Radio Gaucha" to warn those who do not have access to a computer network.

It is true that there are some innovative experiences. But, in general, it can only be said that if there is potential for CMC enhancing NGO networks, it has not been totally explored yet. Thus, it can be presumed that a broader impact of CMC cannot be perceived either. It was asked:

Since you use CMC have you noticed a difference in terms of impact your NGO has on international politics and/or public opinion? Could you give examples?

Most of the NGOs answered with a straightforward "no", a few with "not yet". Among the last, I will describe three perspectives which express some potential for CMC. According to Villar (Resp3, 14/08/94), from Brazil, impact on public opinion cannot be felt yet for they have just started using CMC. But, it broadened their access to crucial environmental issues and to news from the main environmental organizations on the international level. Bowles (Resp4, 15/08/94) says that CMC changed the way they work and to some degree the way they interact with the world, from South Africa. Donato (Resp8, 23/08/94), from Brazil, affirms that it is too difficult to verify. However, with regards to communication, with CMC they increased the number of partners and their level of knowledge.

What about those who are not connected through computer communication networks? I interviewed a few people who have worked for NGOs which are not part of or do not use them in their work. The number of people interviewed is

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too small for me to say that they are "representative". But I think that they give some useful insights about the question. Two of the interviewed come from Latin America (Peru and Bolivia), two from Italy and one from Japan. The first problem pointed out was access. All of them, with the exception of the Japanese, said that the main reason for not using CMC is lack of financial resources and knowledge about computer communication. Another problem identified was a certain urban "bias", for CMC becomes even more difficult in rural areas, where the telecommunication infrastructure may be more precarious.

In the case of the Italian NGOs as described by Raffaele Teodonno (22/09/94), usually the major part of their resources is directed to development cooperation projects in the Third World, thus there is little left to invest in their own institutional development. Raffaele Teodonno, who works for a consortium of Italian NGOs ("Coordinamento di Iniziative Popolari di Solidarieta Internazionale), agrees that it would be important to be able to influence world politics. However, in his view, the Italian NGOs still work isolated from each other; there is not enough coordination among them and the communication level is low. In this way, Teodonno feels that they can still do without CMC. One the other hand, he thinks that in the long run they will be "disadvantaged" in relation to other NGOs, and also concerning access to information. Moreover, he does regard the importance of networking for Italian NGOs.

Maria Elena Fort (23/09/94), who worked for two medium size NGOs in Peru, affirmed that they did not use CMC because they lacked the resources but also because its importance was not perceived by the directors of the organizations. According to her, this could be explained by a certain "suspicion" in relation to technologies designed for military and commercial purposes; a separation between "technical" questions to be dealt in general by a consultant in informatics, who sometimes is unaware of the objectives of the NGO, and the political and socio-economical issues to be dealt by the NGOs staff, mainly social scientists; and also a kind of "generation" gap between older and younger staff members. Nonetheless, Fort thinks that CMC would be important to NGOs which do research, for it would enable them to exchange information, discuss and prepare papers, projects and other documents with people from other NGOs. One problem she identified is that usually the communication through computer networks is easier South/North than it is South/South.

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Hiroaki Nagaoka (19/10/94) affirmed that CMC is not so relevant for the Japanese NGOs communicating with NGOs outside Japan, because of technical differences between their computers and the ones used by other NGOs; and also due the question of language. However, he views communication among NGOs as crucial. He illustrated it, with an example of the existing "disconnection" between the food production and consumption processes. The consumers know too little about what goes on in the production side, while mainly concerns the Third World (where the raw material comes from). In this respect, one of the missing link is information. Thus, he suggests that communication and networking among Northern and Southern NGOs should increase, but not relying only on CMC.

Conclusion

The views expressed by survey respondents provide evidence that information and communication technologies are double-sided coins, or in Tehranian's words (1990: p.20), double-edged swords, which are neither good, nor bad, nor neutral. They all carry the "valences" and "biases" (Bush 1983; Gillespie & Robins, 1989) from their production context. This is part of a politico-economic system whose dynamics tend to exclude and marginalize more and more people. One of the consequences is that access to technologies tends to be differentiated and unequal. However, in this research, I took into consideration Van Zoonen's (1992: p.24) argument. Her argument suggests that even though the social-economic context in which technologies are produced is a strong factor in understanding the particularities of their design, distribution and use, user and cultural practices could endow these material objects with different meanings and values. CMC is made possible by a combination of information and communication technologies. Van Zoonen (1992: p.24) argues that new information and communication technologies (NICTs) usually have "open-ended qualities as well that will be 'closed' by patterns of use and their location in the social and power relations that distinguish the contexts of use." In the author's view (Van Zoonen, 1992: p.25), concrete implementations and applications of NICTs need to be accommodated and appropriated by the individual user, network, organization or community involved in order for the NICTs to make sense and acquire relevance.

Tehranian, who adopts a "technostructuralist" view concerning

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communication technologies and democratization, calls for a contextualist theoretical perspective:

> Contextualism, or symbolic structuralism, presupposes an interdependency between the material structures (technologies and the economic forms of ownership and control) and the symbolic formations (intellectual and artistic content of the programs). The structure is the message, but in the longer run the message also determines the structuration process (Tehranian 1990: p.50).

Thus, despite the problems, if we can assume that there is an interaction between the social structure and symbolic construction, and that technologies have open-ended qualities that need to be "appropriated and accommodated", we see some potential for CMC to enable NGOs to network and to perform better as world actors. However, it is not yet possible to really demonstrate a positive link between processes involving CMC and NGO participation in the world arena. The survey pointed to some evidence such as: the organization of simultaneous conferences in four continents (Resp2, 13/08/94), consultation of documents in the U.S. Congress without going to Washington (Resp19, 15/09/94), and access information about environment alerts and news in electronic conferences (Resp3, 14/08/94). Some other examples include, information on human rights abuses calling for readers' mobilization, exchange of information on a more regular basis, possibility to work in the same document in different time zones. In the longer run, if there is an increase in information exchange and coordination of action on a global level, there could be an impact on the structuration process, as argued by Tehranian (1990). In the concluding chapter, I will try to discuss potentials and limitations of CMC through a future oriented perspective.

CHAPTER V

FINAL CONSIDERATIONS[18]

The "photographs" of today's world are not the most desirable ones: socio-environmental problems, people dying of hunger or overeating, stress caused by too much work or by unemployment, pollution, exploitation of nature and of people; ethnic conflicts and wars; cultural homogenization and so on.

For a long time, world politics has been a sphere dominated by states. After the World War II, intergovernmental organizations started playing a more significant role and since the 1960s transnational corporations have become increasingly important. Civil society's institutions have usually been relegated to a subordinate position. However, there have been changes in the field of international relations. For instance, Non Governmental Organizations - NGOs, have started to be more "visible" in this sphere. Their lobbying in the World Bank, public demonstrations against human rights abuses or nuclear plants and events like the United Nations Conference on Environment and Development at Rio de Janeiro, Brazil, 1992, the Human Rights Conference, Wien 1993, or the Cairo Conference on Population and Development, 1994, are evidence of this. This could contribute to transforming the "photographs". Furthermore, if instead of using photographs as a metaphor for the world's situation, we could use "paintings", which express construction rather than reproduction, perhaps participation of NGOs could contribute for the creation of more desirable paintings. More desirable in the sense that such paintings could be expressions of more peoples' participation, needs and wishes.

There has been a process of change in the patterns of global communication due in part to the evolution of new information and communication technologies. Frederick (1993) points to a possible relation between the change in communication processes for NGOs and politics at the global level. He argues that the growth in global communication is leading to changes in the way peoples and nations build coalitions and networks. He says that this is particularly true in the rise of nongovernmental organizations (NGOs) as world actors. "Previously isolated from one another, NGOs are flexing their muscles at the United Nations and other world forums as their

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[18] In this closing chapter, I try to bring together assumptions, theoretical approaches, findings and hopes of this research process. When starting, I was already conscious that it would be hard to arrive at a "conclusion". In fact, I do not really believe that such a word is realistic for any research process. Thus, I leave these final considerations as an open door, or a starting point, for those who want to proceed researching, reflecting on and acting in this field.

power and capacity to communicate increase"(p.10). One way NGOs have found to increase their communication capacity is the use of computer mediated communication (CMC). However, the process of change in the ways NGOs communicate is not without contradictions. Technologies are not neutral tools. They all carry "biases" derived from their socio-economic and cultural production context and tend to be used more for certain purposes, by specific groups, and to be concentrated in some geographical areas. Information and communication technologies could be seen as "double-edged swords". They concentrate and disperse information and power.

Through a communication perspective, I looked at the interplay of CMC processes and NGOs. The question was, how empowering could computer mediated communication (CMC) be for NGOs to act on the world political scene. More specifically, how could CMC enable NGOs to influence international public policies, laws, etc; raise public awareness; and to carry out joint-activities. My assumption was that if CMC could enable NGOs to exchange more information, to dialogue more and to coordinate joint-action, it would be empowering. CMC could contribute to NGOs if it could enable networking and coalition building. Networking is crucial for NGOs if they are to act in global politics, since they are relatively small and have scarce resources compared to state or market actors. Looking for evidence of the inter-relationships of CMC and the rise of NGOs as world actors, I have found some studies (Downing 1989; Lane 1990; Luber 1993; Lewis 1993; Murphy 1994; Preston 1994), which provided some background for my study but did not make the kind of relationship I was looking for.

Tehranian (1990: p.xvii) considers that information technologies consist of messages, media and modes, that is, social networks and structures of communication. Their impact should be analysed in the context of historically and culturally specific situations, the spaces they occupy, the social linkages they establish and the powers they enhance or limit. Due to time and budget constraints, I chose to focus the medium (CMC) and modes (NGOs networks and use of CMC), without going into the content of messages exchanged. To pursue the research, besides consulting the available relevant literature, interviews were done with several people who work (or have worked) for NGOs. Some use CMC; others do not.

As mentioned, CMC offers possibilities such as some level of interactivity and better access, storage, retrieval, reproduction and exchange of information, overcoming to a certain extent limits of distance and time.

Thus, CMC could contribute to changing the way NGOs communicate with each other. Ideally, it could enhance NGO networks and enable them to act more in the global political arena. On the other hand, it could also reinforce existing gaps, among NGOs, as well as between larger NGOs and popular or grassroots organizations, which in turn would raise problems of legitimacy and democratic accountability.

Looking at the use of CMC by NGOs empirically (see Chapter IV), it appears that there is some potential for CMC to enable NGOs to network and to perform better as world actors. However, on the basis of the survey and the interviews conducted for this research, I cannot yet claim that there is a positive link between processes involving CMC and NGO participation in the world arena.

My general impression is that despite the possibilities, there are still many problems, as suggested by the "not yet" responses about CMC optimizing NGOs' networks. In any case, this is a very complicated question and further research is certainly necessary.

Many factors contribute to this kind of "lag" between potential and reality. The first is directly linked to the nature of technologically- based communication processes. We should be conscious of the socially constructed character of technologies. They are not neutral tools or instruments. Access and assessment are differentiated along social-economic, gender, geo-political, and cultural lines. Gaps and inequities which exist in society tend to be reproduced. Thus, not only availability of financial resources, personnel, equipment and telecommunication infrastructure play a role when speaking of access, but also gender, educational level, computer skills, generation. However, even though, new information and communication technologies carry inherently the socio-economic "biases" from their production context, they can be seen as sites of struggle. This position implies "tensions" between the possibilities of CMC including interactivity and decentralized access to information, overcoming time and space constraints and its intrinsic limits and contradictions. Therefore, CMC processes are not simple. Whoever is in the "site of struggle" is under constant tension. CMC can expand the capacity of communication but, at the same time, can widen existing gaps or create new ones.

As Tehranian (1990: p.213) argues, a technostructuralist and critical position should be taken. It begins with a normative perspective that sees technology per se as neither good nor evil, but rather as another

manifestation of the social structure, including its coherence as well as its contradictions. Technologies are both causes and effects. As extensions of our senses and as leverages of power, however, technologies replicate as well as augment the existing power relations. Thus, the origins, development and applications of technologies should be systematically problematized. Nevertheless, despite this seeming subordination of technologies to social formations, it should still be possible to speak of their counterintuitive effects. The technostructuralist considers contradictory effects of technologies as possible, because it views the social structure not as a uniform monolith but as contradiction-prone and constantly changing.

It should be recognized that CMC and NGOs occupy a "tensional space". Thus, simple optimistic arguments, which draw straight cause-effect lines between CMC and NGOs networking, CMC and empowerment, or CMC and democracy, may be misleading. Only to appropriate, or to accommodate technologies is not enough. By themselves they do not make the difference. A combination of factors should be taken into consideration. I will try to discuss some of them for it is important to be conscious of the potentials and limitations implied in CMC processes.

Van Dijk (1993a: p.22) asserts that mediated perception always results in some kind of reduction. Only some knowledge can be gathered with a medium and only specific skills are called upon. However, opposed to the reductions, compared with direct experience, old and new media also offer extensions. Increasingly, the limits of distance, time and lack of information can be overcome. Van Dijk (1993a: pp. 36-37) focuses on mental challenges which should be brought by new media, including CMC. According to his study, the new media expand human communication capacities, mainly in relation to speed and range, storage capacity and the accuracy of information and to the selectivity in the start, the time, the place and the content of communication they allow. However, he continues

> (...) we confront a paradox in the opportunities of the new media
> that both complicate and simplify human perception and mental
> processing. Which side will get the upper hand is determined by
> two factors first of all: the goal and the task of the user. As
> the higher educated can use the new media for more purposes than
> the lower educated, and actually work more with them on different
> occasions, they will better meet the challenge of the new media
> and improve their social position accordingly.

One conclusion is that CMC could reinforce already existing trends and

exclude people due to its complex nature.

Sproull and Kiesler (1992: p.37) argue that proponents of the efficiency benefits of CMC assume that it delivers the same message as any other medium but simply does so more rapidly. That view is misleading because a message changes its meaning depending on the forum within which people convey it. In their view (1992: p.39), technological change creates new social situations, traditional expectations and norms lose their power. People invent new ways of behaving. CMC creates a new social situation. People "talk" with other people, but they do so alone. Reminders of other people and conventions for communicating are weak. Plain text and the perceived ephemerality of messages, which are two characteristics of the most accessible forms of CMC, make it relatively easy for a person to forget his or her audience, leading to messages characterized by ignoring social boundaries, self-revelation, and blunt remarks. I think that it is true that the medium influences the meaning and the CMC characteristics pointed out by the authors might have some effect on communication. However, technologies by themselves only create certain potential. They do not create new social situations. As was argued, it is a much more complex process. Nevertheless, a characteristic like plain text can be an advantage. Bissio (1993) holds that,

> Participation in an electronic debate is intrinsically democratic. The opinion of a big "global" institution has the same formal "weight" in title and outward appearance as that of a grassroots group working at village level. Without the cosmetic attraction of glossy paper or full-colour printing, only the weight of the argument will make a difference for the readers. Based in any part of the world, they will get both at the same time, and have the opportunity to voice their own comments instantly.

This is partially true, while CMC does have this potential, access is still unequal and differentiated. Thus, an assumption that participation in an electronic debate is intrinsically democratic is misleading.

Furthermore, Sproull & Kiesler (1992: p.4) give a "hint" of how to identify some CMC potentials. "The most important effect of a new technology may be not to let people do old things more efficiently but instead do new things that were not possible or feasible with the old technology." In this sense, it is important to look at the new possibilities offered by CMC. E.mail is not simply writing letters faster. It enables the reproduction and exchange of information to be faster and to involve more people in different countries.

Sending and receiving large amount of information can be less costly and time consuming. The information can be stored, retrieved, altered, reproduced and distributed many times. Mailing lists and listservs allow the receiving and sending of information more systematically and frequently.

The possibility of electronic conferencing allows people in different time zones to discuss issues more openly. They do not need to be in the same place at the same time. Electronic conferences potentially could contribute to collective knowledge production, which is only possible through dialogue among different people.

The possibility to interact facilitates joint project design, coordination of campaigns, organization of events among people in different time zones, also to write joint position papers, or documents.

CMC could also contribute to creating more links between information and action. There are already some examples of this by environmental and human rights organizations which inform about cases of human rights abuses or ecological problems, asking receivers to organize public demonstrations, to sign petitions or open letters, to send letters to public authorities and so on. So the interactive character of CMC allows the creation of different links between senders and receivers of information.

Compared with the mass media, CMC allows for the existence of a larger number of senders and receivers, which could contribute to a more "multivalant" communication mode. Moreover, access to information could broaden. CMC can enable local access to global issues, as well as global access to local ones.

Despite the potential, it is crucial to be conscious of the CMC limitations and contradictions. These derive from a combination of political economic, cultural, technical and institutional factors.

The North/South gap, and the gaps within the North and the South are reproduced, making access differentiated. Moreover, while CMC has made communication among Northern NGOs with certain countries in the South relatively easier. South/South communication is still precarious.

Availability of financial and human resources for installation, training and operation also play a role. Budget restrictions can influence how often one can connect to the network. Computer skills and knowledge of foreign languages (for non-English speakers) are necessary to be able to use it fully. There is always the risk of increasing the gaps between educated and less educated people, between NGOs and grassroots organizations and among NGOs. As

access and assessment tend also to be differentiated along gender and generation lines, there can exist gaps between women and men, younger and older generations.

There are intrinsic "technical" limitations. CMC is technically complex. As it is enabled by a combination of information and communication technologies, it is much more complicated to use than a telephone or fax machine. Systems vary in different countries. For example, in Alternex, Brazil, and in Antenna, the Netherlands, even though both are affiliated to the Association for Progressive Communication (APC), the commands and the interaction with the software are different. The possibilities are more or less the same but the differences make use more difficult to travellers. Thus, the institutional and technical support from the host systems is essential, as well as participation of users in decisions of the systems managers concerning services offered, software, level of support and so on.

The risks of surveillance and system failures do exist. Forester and Morrison (1990) point to several risks and new issues brought about by computer and communication systems, like lack of security, surveillance, intellectual property and software piracy, viruses and hacking, and failures of information systems. They affirm that "as the society becomes more dependent on computers, we also become more vulnerable to computer malfunctions and to computer misuse - that is to malfunctioning hardware and software and to misuse by human beings" (1990: p.1). Concerning the risk of surveillance, I think that if there are really many senders and receivers all over the several nets, it would be hard to keep control of all the flow. There is also the possibility of coding messages, which create difficulties to possible "spies". Anyway, the risks do exist and it is important to be cautious.

Concerning the context, increasing sophistication is a trend in the field of new information and communication technologies. Fiber optics and digitalization will make it possible different signs (data, image, sound, voice) to be carried only through one channel. Debates have been going on about the installation of the "information superhighway" and who is going to benefit from it (Sommer 1994). Currently, pressures to privatize telecommunication systems all over the world can result that access to CMC become even more restricted.

It is also important to consider that even though fast-speed communication is necessary in many situations, the "fast-pace" logic is very

linked to a western mentality and world view, which resulted in great part from the evolvement of capitalism and the ideology of progress. Thus, one have to be conscious that faster is not always the same as better. Moreover, telecommunication can bring people who are far apart closer, but can also make the ones who are close become more distant.

Most NGOs still do not have access to CMC. Among, the ones that do many do not yet fully explore it. This results from budget restrictions that limit regular logins, less computer skills, or hesitation on writing in foreign languages, problem pointed by Afonso (interview to Nepomuceno) concerning Alternex Brazilian users low participation in electronic conference. They read the topics but rarely react or raise new issues.

In face of all the difficulties, concrete decision should be taken. The main problem is still access. Among NGOs there are the CMC "have/have nots". Thus, it is necessary to fight for public policies for democratization of communication and respect the peoples' right to communicate (Peoples Communication Charter). As differentiation is along political economic, gender, generation, educational level, and computer skills, there should be cooperative solutions among NGOs, which could include spreading access and training (computer skills), and institutional agreements among the computer network hosts to find technical alternatives to simplify commands, to provide more systematic access to information and to deal with the question of language differences so that, even if there some languages that predominate, people who speak other languages are not excluded. These are only some suggestions, more reflection is indubitably needed.

Through the experience of using CMC and doing a research on it, I would say that there is a potential for a qualitative gain in communication. Firstly, because the nature of the medium and how it has been used by like-minded people can provide a certain sense of being part of a kind of "community". Thus, people in the networks can be friendly and helpful, as I experienced while doing this research. Moreover, I had the impression that the information received through computer networks can contribute to mobilizing people. In this sense, it is different to receive information from the mass media than to "receive" it through CMC. This is because being networked through computers can provide the information a "plus", that is, a call for action. This can be seen in some cases concerning environment or human rights issues, although the opposite is possible as well. CMC can be a way to escape from the "real" world and can be used to overload information or to harass

people.

While doing this research, I also experienced the gaps in access to technology. As a woman I perceived how "unprepared" I was to deal with technology. Hardware, software, cables, wires were not part of my universe. Additionally, my budget did not allow me to stay long on line. Thus, my own "login frequency" was not higher than once a day. I agree with Ian Tellam (11/10/94), from WISE, that CMC could contribute to raising inequalities among NGOs. NGOs which can have access and fully explore its possibilities would be relatively more "powerful". Therefore, we cannot assume a simple cause/effect benefit or empowerment from the use of CMC. Technologies by themselves do not make difference; it is important to go beyond an instrumental attitude towards communication. On the other hand, considering the potentials of CMC, it is difficult to imagine effective action in today's world scene without it.

There should be a political project to democratize access and to broaden participation, so that hegemonic practices are not reproduced and gaps are not widened. Afonso (interview by Nepomuceno) argues that computer communication networks are international political spaces for debate among institutions of civil society. These could be important spaces for the involvement of counter-hegemonic discourses if participation and dialogue increase. Communication in a dialogical way should be a goal among NGOs. CMC can contribute, but relying only on it is not enough. Furthermore, CMC should always be combined with other media, like community radio, newsletters, street theater, music, meetings, and popular video, so that information is democratized and "global consciousness" can grow. In this way, NGOs and CMC can have a role in the process of transforming "politics of photographs" into "politics of paintings", that is to go from reproduction to creation in the search for alternatives...

APPENDIX A

Resp1
From sun4nl!gn.apc.org!wiseamster   Tue Jul 26 15:01:56 1994 remote from antenna
Date: Tue, 26 Jul 94 14:01:53 BST
From: WISE Amsterdam <wiseamster@gn.apc.org>
To: cris@antenna.nl

Ian Tellam
WISE, Amsterdam, The Netherlands

Resp2
From sun4nl!ax.apc.org!pacs Sat Aug 13 23:49:46 1994 remote from antenna
From: pacs@ax.apc.org
Date: Sat, 13 Aug 1994 18:47:17 -0300
To: cris@antenna.nl
Subject: Re: Computer communication

Sergio Schlesinger, PACS - Instituto Politicas Alternativas
para o Cone Sul, Rio de Janeiro, Brazil

Resp3
From sun4nl!ax.apc.org!rvillar Mon Aug 15 16:37:33 1994 remote from antenna
Date: Sun, 14 Aug 1994 16:21:59 -0700
From: Roberto Villar Belmonte <rvillar@ax.apc.org>
To: cris@antenna.nl
Subject: resposta nej-rs
Cc: rvillar@ax.apc.org

Roberto Villar
Nucleo de Ecojornalistas do Rio Grande do Sul, Brazil

Resp4
From: bbowles@jhb_online.wn.apc.org (William Bowles)
To: 100020.3354@compuserve.com
Subject: Re: msg frm PADS6121 (fwd)
Date: Mon, 15 Aug 94 23:35:45 GMT+2
CC: replies@jhb_online.wn.apc.org
Organization: jhb_online
Reply-To: bbowles@jhb_online.wn.apc.org (William Bowles)
Message-ID: <CZmSVihG.7bb2gl@jhb_online.wn.apc.org>
X-Mailer: UUCP/Connect - Macintosh Release: 1.6v4

William Bowles is not currently working for a specific NGO. But has been
working in the field of computers and ngos for the past 15 years in the US,
Central America and Southern Africa.

Resp5
From sun4nl!ax.apc.org!aspta Wed Aug 17 22:20:32 1994 remote from antenna
From: aspta@ax.apc.org

i

Date: Wed, 17 Aug 1994 17:18:04 -0300
To: cris@antenna.nl
Subject: Development Studies/Politics of Alternative Development Strategies

Eli Lino de Jesus, AS-PTA, Assessoria e Servicos a
Projetos em Agricultura Alternativa, Rio de Janeiro, Brazil

Resp6
To: cris@antenna.nl (cristina yumie aoki i)
Cc: paxchristi
Subject: Re: Research computer mediated communication
From: paxchris@antenna.nl (Pax Christi Nederland)
Comments: Pax Christi
Date: Thu, 18 Aug 94 16:29:26 GMT
Organization: Mailed via Antenna, APC Service in the Netherlands

Kees Wiebering, Pax Christi, Utrecht, The Netherlands

Resp7
From dia!ERIKP Fri, 19 Aug 1994 15:21:05   remote from antenna
From: ERIKP@dia.antenna.nl
To: cris@antenna.nl (cristina yumie aoki i)
Date: Fri, 19 Aug 1994 15:21:05
Subject: Re: Research computer mediated communication
Reply-to: ErikP@dia.antenna.nl
X-flag: Mailed via Antenna Standalone DOS UUCP Link
X-pmrqc: 1
Priority: normal
X-mailer: Pegasus Mail v3.1 (R1a)

Erik Post, D.I.A., Dutch Interchurch Aid (Stichting Oecumenische Hulp),
Utrecht, The Netherlands

Resp8
From sun4nl!ax.apc.org!clf Tue Aug 23 22:37:58 1994 remote from antenna
Date: Tue, 23 Aug 1994 13:35:28 -0700
From: Centro Luiz Freire <clf@ax.apc.org>
To: cris@antenna.nl
Subject: From CCLF to Cristina
Cc: clf@ax.apc.org

Cristiano Donato, CCLF, Centro de Cultura Luiz Freire, Pernambuco, Brazil

Resp9
From sun4nl!ax.apc.org!foeamazonia   Sat Aug 27 18:39:50 1994 remote from antenna
From: foeamazonia@ax.apc.org
Date: Sat, 27 Aug 1994 09:37:20 -0700
To: cris@antenna.nl
Subject: Re: Computer communication

Roberto Smeraldi, Friends of Earth, Amazonas, Brazil

Resp10
From snore Tue, 6 Sep 1994 02:39:36   remote from antenna
From: snore@snore.antenna.nl
To: cris@antenna.nl
Date: Tue, 6 Sep 1994 02:39:35
Subject: Re: Computer communication
Reply-to: snore@antenna.nl
Priority: normal
X-flag: Mailed via Antenna Standalone DOS UUCP Link
X-mailer: Pegasus Mail v3.1 (R1a)

Ace Suares, Support Network On Renewable Energy (SNORE Fondation), The Netherlands

Resp11
From fes!epp92 Tue, 6 Sep 1994 21:14:47 (null) remote from antenna
From: epp92@antenna.nl
To: cris@antenna.nl (cristina yumie aoki i)
Date: Tue, 6 Sep 1994 21:14:46
Subject: Re: Computer communication
Priority: normal
X-flag: Mailed via Antenna Standalone DOS UUCP Link
X-mailer: Pegasus Mail v3.1 (R1a)

Dirk Jan Dullemond, Nederlandse Kernstop Coalitie (Dutch Antinuclear Coalition), Wageningen, The Netherlands

Resp12
From sun4nl!gn.apc.org!ifor Thu Sep 8 15:53:33 1994 remote from antenna
Date: Thu, 8 Sep 94 14:53:28 BST
From: IFOR <ifor@gn.apc.org>
To: cris@antenna.nl
Subject: Re: Computer communication

Staci Toback, Netherlands International Fellowship of Reconciliation (IFOR), Alkmaar, The Netherlands

Resp13
From sun4nl!pobox.ruu.nl!icco Mon Sep 12 11:40:33 1994 remote from antenna
Date: Mon, 12 Sep 94 11:39:03 CET
From: "Stichting ICCO" <icco@pobox.ruu.nl>
Reply-To: icco@pobox.ruu.nl
To: cris@antenna.nl
Subject: RE: Research computer mediated communication

Auke de Jong, ICCO, Interchurch Organisation for Development Cooperation, The
Netherlands

Resp14
From sun4nl!gn.apc.org!peacemedia   Mon Sep 12 15:29:25 1994 remote from
antenna
Date: Mon, 12 Sep 94 14:29:18 BST
From: Jim Forest <peacemedia@gn.apc.org>
To: cris@antenna.nl
Subject: letter

Jim Forest, Peace Media Services, Alkmaar, The Netherlands

Resp15
From ecoop!olra!hansv Mon, 12 Sep 1994 14:24:53 GMT +1 remote from antenna
From: hansv@ecooperation.antenna.nl
To: cris@antenna.nl
Date: Mon, 12 Sep 1994 14:24:53
Subject: yr questionairre
Reply-to: hansv@ecooperation.antenna.nl
Priority: normal
X-flag: Mailed via Antenna Standalone DOS UUCP Link
X-mailer: Pegasus Mail v3.1 (R1a)

Hans Verolme, Foundation Ecooperation, Utrecht, The Netherlands

Resp16
To: cris@antenna.nl
Subject: your request
From: ileia@antenna.nl (Wietse Bruinsma)
Comments: Info Ctr. Sustainable Agr.
Date: Tue, 13 Sep 94 16:57:50 GMT
Organization: Mailed via Antenna, APC Service in the Netherlands

Wietse Bruinsma, Information centre for Low-External-Input and Sustainable
Agriculture (ILEIA), The Netherlands

Resp17
From innusuppnl@gn.apc.org Wed Sep 14 11:08:53 1994 remote from gn
Date: Wed, 14 Sep 94 11:08:52 BST
From: Foundation Innu Support Group <innusuppnl@gn.apc.org>
To: cris@antenna.apc.org
Subject: responce

Govert de Groot, Foundation Innu Support Group, The Netherlands

Resp18
From novib!ADMIN 14 Sep 94 13:53:55 GMT +1 remote from antenna
To: cris@antenna.nl
From: ADMIN@novib.antenna.nl
Date: 14 Sep 94 13:53:55
Subject: research
X-pmrqc: 1
Priority: normal
X-mailer: Pegasus Mail v2.3 (R5).

Marion Volk & C.Grevelink, Novib (Netherlands Organization for International
Development Cooperation)

Resp19
From sun4nl!rcp.net.pe!desco!csalazar   Fri Sep 16 02:37:29 1994 remote from
ante
nna
From: CSALAZAR@desco.org.pe (Carlos Salazar Couto)
To: cris@antenna.nl
Date: Thu, 15 Sep 1994 11:27:28
Subject: Encuesta
X-Pmrqc: 1
Priority: normal
X-Mailer: PMail v3.0 (R1a)
Organization: Centro de Estudios y Promocion del Desarrollo

Tokihiro Kudo & Carlos Salazar, DESCO (Centro de Estudios y Promocion del
Desarrollo), Peru

Resp20
From sun4nl!knooppunt.be!daniel Sat Oct 1 14:31:06 1994 remote from antenna
To: cris@antenna.nl (cristina yumie aoki i)
Cc: daniel@gn.apc.org
Subject: Re: Computer communication
From: daniel@knooppunt.be (Daniel Verhoeven)
Date: Sat, 01 Oct 94 11:08:18 GMT
Organization: KnoopPunt Gent Belgium

Daniel Verhoeven, KnoopPunt uzw, Gent Belgium

Resp21
From cebemo Mon, 19 Sep 1994 16:46:44 native remote from antenna

; SITE CONFIGURATION

uucpname   : cebemo
node   U remote from cebemo
From: cebemo@antenna.nl
To: cris@antenna.nl
Date: Mon, 19 Sep 1994 16:46:41

v

X-flag: Mailed via Antenna Standalone DOS UUCP Link
X-pmuue: E_MAILQ.DOC
X-finfo: DOS,"E_MAILQ.DOC",,,,MS-Word
Subject: research computer mediated communication
Priority: normal
X-mailer: Pegasus Mail v3.1 (R1a)

 * Dit bericht bevat het bestand 'E_MAILQ.DOC', in uuencoded
formaat.
To   : Cristina Yumie Aoki (CRIS@ANTENNA.NL).
Subject   : Research computer mediated communication.

Jan Bon, CEBEMO, The Netherlands

Resp22
From sun4nl!gn.apc.org!bothends Thu Oct 13 11:51:22 1994 remote from antenna
Date: Thu, 13 Oct 94 11:51:18 BST
From: Jan Stevens <bothends@gn.apc.org>
To: cris@antenna.nl
Subject: Questionaire cmc

Jan Stevens, Both ENDS, ENvironment and Development Service for NGO's, The
Netherlands

Resp23
From sun4nl!iep!pzarate Sat Oct 22 01:19:39 1994 remote from antenna
Date: Fri, 21 Oct 94 08:39:27 PER
From: patricia zarate <pzarate@iep.org.pe>
X-Mailer: PcCorreo 4.0b / PccP S.A.
To: cris@antenna.nl
Subject: Re: msg from Ricardo

Patricia Zarate, Instituto de Estudios Peruanos (IEP), Peru

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