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SOCIAL APPLICATIONS OF TELEMATIC

by

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Summits and Development Sector

Canada
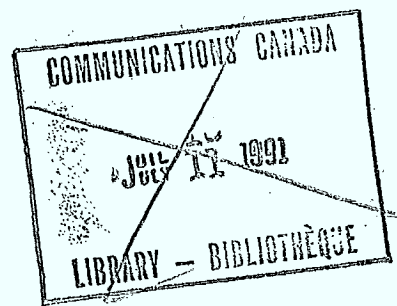
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The views expressed in this report are those of the autors.

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ABSTRACT

This article presents the results of a pilot project involving an innovative application of telematics* in the medical-social field. Experiments using this service were carried out over a period of more than two years at the Department of Communications, and were aimed at five target groups: a group of psychologists/psychotherapists, a group of disabled persons, a group of victims of sexual abuse, a group of senior citizens and a group of persons with AIDS or who had tested HIV-positive. The quantitative and qualitative analysis of their participation showed that the " Présence " service meets its medical-social goals when employed as part of a specific horizontal communication** structure. The use of user-friendly software, the implementation of a structure to welcome users and help them learn to operate the system, and the presence of a communications professional (mediator) all contributed to the effectiveness of the telematics service in meeting its goals of encouraging exchanges and self-help. The results are interpreted in the light of theories concerning the community approach, interpersonal communication models and the use of computers for self-help applications.

*   A combination of telecommunications and computers

**   Horizontal communication: the user has access to assistance from other users. Vertical communication: the user has access to information.

I would like to thank the Director of Socio-Cultural Programs, Pierre Billon, for his devotion to helping others and for his support; the COPHAN and FADOQ agencies, the Terrebonne CLSC and the St Luc Community Health Department, for their cooperation; and all the participants for their major contribution to the success of the project; mediators Lyne Champoux, Marie-Claude Charest and Jacqueline Labrèche; and the team of computer technicians, Michel Barré, Marc Giroux, Daniel Vézina and Alain Opériol. My thanks also to everyone whose valuable advice helped in designing this project.

TELEMATICS -- IN SEARCH OF A HUMAN APPROACH
by Martine Zajac

"PRESENCE"

Experimental support and self-help network based on electronic communications

INTRODUCTION

This article presents the results of an experimental project involving the use of a communication and self-help service based on telematics. The service, called " **Présence** ", was originally developed in France, as the first medical-social application of the Minitel system. Its objective is to set up support networks for interest groups, working through a computer terminal linked to a mainframe over a regular telephone line. The specific purpose of Présence is to establish horizontal communications between people who wish to share with others their experiences in relation to a specific situation and to medical and social concerns.
Présence offers a framework for dialogue, within a structure to welcome users and help them use the system, which is accessible to a wide variety of target groups. Thus far, five networks, each made up of about a dozen participants have tried the service: psychologists/psychotherapists, disabled people, victims of sexual abuse, senior citizens and people with

AIDS or who have tested HIV-positive.

The goal of our research is to examine the effectiveness of horizontal communications through telematics, by conducting a qualitative and quantitative analysis of users' participation and of the role of the mediators. The final results should allow us

to establish a code of ethics for the use of this telematics-based service.

BACKGROUND

The study of the field of telematics poses conceptual and methodological problems. Its medical and social objectives make Présence an innovative telematics project in the computer field. As yet there has been little, if any, research on this subject.

We know that countries such as France, Germany, Great Britain and the United States, which already have telematics networks, offer vertical services (access to databanks and electronic directories) and horizontal services (sending personal messages). In France, it was found that 70% of telematics use was oriented to sending personal messages, as opposed to only 30% for vertical services. We can suppose that telematics meets a need for personal communication that other communications tools such as the telephone do not. And yet communications through a telematics network are time-consuming and difficult, not to mention costly. Why, then, do users turn to this service?

It appears that horizontal communications through telematics meet a real need for interpersonal communication, and that such written communication comes more easily when users can keep their anonymity. In France, this type of totally "open" written communication is used mainly for games and erotic conversations.

Accordingly, the designer of the Présence project, Pierre Billon, hypothesized that horizontal communications through telematics could be used for different purposes.

This led to the question of whether telematics could have valuable applications in the medical-social field .

The project was developed on the basis of theoretical concepts borrowed from the community approach, interpersonal communication models and the use of computers for self-help applications.

Social isolation, or "the lonely crowd"

The North-American health model is based on the concepts of autonomy and independence; people are encouraged to take responsibility for their daily lives and to cope with their difficulties themselves. People are hesitant, even ashamed, to ask for psychological assistance: who is prepared to admit to seeing a psychologist? Can we confide our marital problems to our neighbours?

The myth of self-reliance is not the only one that produces isolation. The disappearance of traditional social networks has equally harmful consequences. Zilbergeld (1983) reported a constant increase in the number of people living alone: from 4% in 1790 to 11% in 1940 and 22% in 1980. Over the same period, there has been a rise from 8% to 30% in couples who have split up and are living alone. In Quebec, more than 30% of the aged are living by themselves.

This disintegration of the social fabric seemingly has an

effect on mental and physical health. Various observations indicate increased stress and diminished assistance. When a person consults a health professional, it is not necessarily to resolve a neurotic or psychotic condition. Mourning, bringing up children alone, alcohol abuse, violence, handling a disabled child--all these trials engender imbalances that neither the expertise of a professional who diagnoses problems in terms

of pathology (Gayle & Cline, 1986, pp. 306-325), nor social structures, can really solve.

People confronted with these difficulties in everyday life are essentially looking for moral support, unconditional aid that will help them to better cope with their situation. And it is in looking for such support that people facing these difficulties first turn to the people close to them, family or friends, before consulting a specialist (Arseneau, 1983, pp. 75-95), if indeed they have that option. But if that option is not open to them, whom can they turn to?

The community approach and natural assistance

The community approach is an outgrowth of the 60s, along with various historical movements: protest, the battle against poverty, and the sexual revolution.

This approach is centred on public health and an improved quality of life. It is aimed particularly at meeting the needs of people coping with difficulties that cannot be termed "mental illness". Its objectives fall into three groups: a) promoting natural assistance by concentrating on the skills and aptitudes that individuals already have, since according to Blanchet (1983, p. 133), what a close friend or relative says with a good dose of vitality, common sense and affection is often more acceptable than the advice of a professional; b) offering prevention programs for the public by, as Cowen (1984, pp. 253-259) says, establishing

structures and processes that provide the maximum benefit, both
in terms of scope and stability, for psychological adjustment,
efficiency, and the happiness and coping mechanisms of very large
groups of individuals; c) contributing to the development of new
social networks aimed at combatting isolation and the lack of
mutual assistance among people, either by pushing individuals to

seek out by themselves the resource persons they need, or organizing meetings with others or self-help groups (Guay, 1984, p. 81).

Self-help groups: new social networks

Self-help groups provide people who share a common problem with the opportunity to meet and, together, explore their everyday experiences, their resources and means of attaining a better quality of life. According to Guay (1984, p. 134), this is the most common traditional form of natural assistance.

There is a constantly increasing number and variety of self-help groups, for example Alcoholics Anonymous, Gamblers Anonymous and Weight Watchers. Although those three groups are highly organized, self-help groups that bring together people sharing a common concern , rather than a common problem, are growing in popularity. By "concern", we mean the widespread difficulties mentioned earlier: anxiety preceding the birth of a first child, mourning, or the difficulties of raising a diabetic child. This proliferation of self-help groups is eloquent evidence of the need for horizontal assistance. Romeder (1982, p. 31) reports that 24.6% of groups discuss physical health problems, and 26.5% are made up of parents concerned about their children's health. Groups of single people (divorced or widowed) constitute 12.1%. Out of all self-help groups, 11.4% deal with drug addiction and compulsive behaviours.

Simple concerns related to daily life motivate people to join self-help and support groups because the rapidity of change in our society and the isolation factor make it necessary.

Whom to turn to for information and assistance becomes a crucial question.

Technology can sometimes make life easier for isolated people. The telephone, for instance, is used for horizontal assistance (Tel-Aide, advice on unwanted pregnancies, Self-Help Against Depression) by people who want to talk to others anonymously (Romeder, 1982, p. 16). This particular choice shows that anonymity offers a practical solution that meets people's need to communicate and at the same time overcomes their fear of taking the first step.

In increasing numbers, people are saying that they need to share, and want to express themselves in a reassuring and non-threatening situation. Consequently, the use of computers, rather than the telephone, as a means of allowing people to maintain their anonymity while benefiting from horizontal assistance, appears to be an avenue worth exploring.

Social applications of computers

The first applications of computers were primarily military and administrative. Today, they are employed in various social fields, including psychology as part of assistance programs. Experts' opinions vary, however, when it comes to using a computer, rather than a person, to provide assistance.

There are few people with no set opinions about computers; most people are wholly in favour of them or wholly mistrustful.

Studies on the use of this tool have primarily focussed on cognitive or behavioural aspects. The authors consider computers less suited to interpersonal communication. It is surprising when one considers that only a small number of studies have considered the social and emotional implications of the use of computers (Martinson, 1987, pp. 16-17). Computer applications in the social

field raise some redundant questions: Are computers not impersonal tools? (Kiesler & Siegel & McGuire, 1984, pp. 1123-1134). Why, then, are computers more legitimate tools in the social field than the telephone or the traditional face-to-face approach?

To answer these questions, this study will consider computers and their characteristics as tools for written communication, and their use as a means of assistance.

Advantages of computers

The choice of a means of visual, auditory or written communication affects users in different ways. The use of computers to communicate requires changes in time, space and communication structures (Leduc, 1979, pp. 14-15).

The computer is a means of written communication . This primary characteristic clearly distinguishes it from the face-to-face approach and the telephone. Marvin (1983, pp. 43-52) notes that the use of computers for working at home encourages relaxation and creativity . Other authors report that the average message is fairly short (about 1/12 of a page, or 200 to 300 characters), since written communication is, after all, tedious. Nevertheless, the volume of communication by computer is large, as compared with other communication tools (Canning, 1978, Palme, 1981, Rice, 1984, Kiesler & Siegel & McGuire, 1984, Danowski & Edison-Swift, 1985, pp. 251-270) and computers have the advantage of rapidity , inasmuch as the same message can be sent to more than one user, or

even the whole group.

Strangely enough, none of the studies listed mentions the psychological effects of writing on the human consciousness, and yet the literature abounds with examples of the importance of that activity.

A second characteristic is the lack of paralinguistic information (gestures, facial expressions, proximity) and prosodic information (intonation, tone of voice, verbal amplifiers or attenuators such as "ah!" and "uh").

In a face-to-face conversation, non-verbal information plays a preponderant role. The facial expressions and body language of a speaker give as much information on his or her real feelings as does what he or she says. Communication is more effective, moreover, when there is no conflict between verbal and non-verbal information. The use of a "restrictive" communications channel, one that is exclusively visual, auditory or written, results in communication structures that reduce the risk of such conflict. Furthermore, the use of a restrictive channel makes interlocutors take a more open point of view, rather than one that is strictly personal. Thus conversation follows a more logical order, since people "speak" less frequently and rapidly (Moscovici & Plon, 1966, pp. 702-722).

When people respect others' rights to have a turn at "speaking", the result is inevitably more balanced participation . This aspect has been widely noted with the use of computers. The lack of information on role and status also encourages more balanced participation (Vallée et al., 1977, Hiltz & Turoff, 1978, Rice & Bair, 1984, Kiesler & Siegel & McGuire, 1984, and Martinson, 1987, p. 65).

In a work group, this balance results in more communication between superiors and subordinates (Bair, 1973, Irving, 1976, Uhlig, 1977, and Rice & Bair, 1984).

The use of computers contributes not only to social egalitarianism, greater respect for others' right to speak and the expression of more ideas, but also encourages users to feel **less** inhibited , which facilitates exchanges with new people (Rice & Bair, 1984, Kiesler & Siegel & McGuire, 1984, p. 1125).

Disadvantages of communicating by computer

Computers have their drawbacks. The increased flexibility in the organization of interactions causes difficulties. For example, equal participation in a work group, with no moderator or leader, makes it less likely that communication will be effective, given the multitude of ideas and the volume of communication. Some experts feel that a **moderator** or **leader** is necessary to guide communications by computer (Hiltz & Turoff, 1985, p. 687). Furthermore, the opportunity of expressing oneself with less inhibition can occasionally result in hostile comments, even insults, that are unacceptable in normal social situations (Vallée & Johansen, 1974, Spelt, 1977, Vallée & Johansen & Lipinski & Spangler & Wilson, 1978, Kiesler & Siegel & McGuire, 1984, p. 1129). Nevertheless, **anonymity** allows users to speak frankly and accept criticism more easily: "Joe, remember that 57 lines is a maximum, not a minimum," and Joe answers "Amen," and reduces the length of his messages (Hiltz & Turoff, 1985, p. 687).

Some authors feel that there is incomplete feedback because of the lack of non-verbal information (nodding, smiling). This means that replies come more quickly, and must be compensated for by extremely "positive" messages. Users can then have the impression that they are overwhelmed by the computer, and feel less self-awareness (Diener, Lusk, Defour & Flax, 1980, Scheier, 1976, Scheier & Carver & Gibbons, 1981, p. 1-15). Moreover, Kiesler, Siegel and McGuire (1984, pp. 1123-1132) consider that the writer's being obliged to imagine his or her audience supports

the opinion that communications by computer are rather
impersonal.

Finally, users' acceptance of computers depends on the type
of terminal used, its reliability and availability, and on their
ability to obtain prior training and proper documentation
(Conrath & Bair, 1974, Irving, 1976, Edwards, 1977, Cassar &
Garceau & Baribeau, 1988, p. 251).

Computers and self-help

In the past ten years or so, psychologists have been
designing computer-based assistance programs. These programs
allow the person and the machine to communicate by imitating the
horizontality of a relationship, where the computer is not a
transparent tool that facilitates communication between
individuals. Their programs are based on cognitive, behavioural
and biofeedback theories, or simply on learning theory (Lawrence,
1986, p. 43).

Computers are used to deal with an impressive number of
subjects, ranging from obesity (Foree-Gavert & Gavert, 1980,
pp. 1-14), impotence (Reitman, 1984, pp. 363-380) and helping
smokers quit (Schneider, 1984, pp. 359-362) to coping with
anxiety (Smith, 1987, pp. 37-49).

Schneider and Wedding (1984, pp. 381-386) tried to make man-
machine communications more "human", by sending assistance
program users semi-personalized or personalized letters of
encouragement.

However, the fact that the computer cannot comment on or

evaluate the solutions proposed by the user and, in fact, cannot

provide assistance except within the conceptual framework of the

computer program, raises some questions. The use of man-machine

assistance programs highlights the limits of computer language

in comparison with the infinity of word images that humans can

create. Whether they are loved or hated, computers remain a tool

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without judgment or feelings. Weizenbaum (1977, p. 354)
expressed his dissatisfaction with such programs, maintaining
that the use of computers is simply unethical , since human
relationships are indispensable to the individual need for
recognition.

Consequently, all these assistance programs make the
computer an instructor, an assistant consultant, or even a full-
fledged consultant. Although most people prefer to speak to a
machine when dealing with intimate subjects (Slack & Slack, 1974,
pp. 62-65) and it is difficult to distinguish between a
discussion with a computer and one with a true consultant (Hilf &
Colby & Smith & Wittner & Hall, 1971, pp. 278-288), the use of
computers in providing assistance may become more effective if
they are used as a means rather than an end in themselves.

Where assistance is concerned and, more specifically, in
self-help groups, where the objective is to encourage personal
exchanges and support, it is reasonable to want to use computers
as completely transparent tools rather than as sources of
information.

Objectives

Thus the objectives of this research project were to make
computers, as they are used in self-help groups, transparent, and
to develop communication structures adapted to the telematics
context that would comply with the rules of ethics inherent in
interpersonal communication.

METHOD

Programming of the horizontal service

To reach our objectives, we asked a group of computer programmers to design an interface program for a horizontal service. The computer program gives a general menu, offering users three means of written communication: messages (off-line), "cross-talk", and forums (real time) (Figure 1.0).

The message system (mailbox) allows users to communicate with other users who are temporarily absent. The messages received and sent are kept or deleted, as the user wishes. With " cross-talk ", users can engage in simultaneous conversations, displaying only the user's last message and the reply. The forum is a closed exchange among two, three or four persons, where the entire conversation is saved in memory.

Hello LOUIS

New messages received: 6

Number of messages saved in your mailbox: 15

OPTIONS

Read messages received.....................   1

Write a message...........................   2

Review messages you have sent.............   3

Join a forum..............................   4

Cross-talk discussion.....................   5   Your

choice

Write a visiting card.....................   6   ___ + SEND

Read visiting cards.......................   7

Consult reference texts...................   8

Find out more about your group............   9

Change your password......................   10

Users currently on the network:

        Louis   Mediator   Marguerite   Manon

Figure 1.0   General menu

Recruitment of participants

We set up five groups of a mixture of 11 men and women each, for a total of 55 participants. The average age was between 35 and 45, ranging from 21 to 79. The number of users per group was set on the basis of a comparison with the average number of participants in a self-help group.

The participants were recruited with the help of people or agencies acting as intermediaries. A psychology professional helped us put together a group of psychologists and psychotherapists. A group of disabled people was set up in cooperation with the Confédération des associations des personnes handicapées du Québec (COPHAN - Quebec confederation of associations for the disabled), a group of sexual abuse victims in co-operation with the Terrebonne Local Community Service Centre (CLSC), a group of senior citizens in co-operation with the Fédération de l'Age D'Or du Québec (FADOQ - Quebec federation of senior citizens), and a group of AIDS sufferers and persons who had tested HIV-positive, with the help of the St Luc Community Health Department.

Terminals and user training

A technician took a LANPAR terminal to each participant's home. The terminal keyboard comes with a template (function key guide), illustrating and explaining the use of the main functions. The technician trained the participants when the terminals were

installed, and each user was given an "explanatory guide". The
last group received simulation training , without the help of
the technician.

Participants' pseudonymity

There is an introduction and operating structure for participants. They begin by choosing a pseudonym (a fictitious name), and complete a " visiting card " (Figure 2.0). It is suggested to participants that they not mention their age, physical appearance or profession in their visiting cards and future exchanges on the network.

FLORENCE'S VISITING CARD

I chose this pseudonym because it makes me think of peace and kindness. I am a generous and tolerant person, but too nervous. My marriage has broken up, and my only child--a little five-year old girl--is disabled. Everyone looks at her as though she were a monster, and it causes me terrible pain. My family doesn't stay in touch, and all my friends have drifted away, as if by chance. I feel that I am cracking, and I can't take the solitude and loneliness any more. My life is a nightmare. I need you! I will be on the network every day at about 8:00 o'clock.

Florence

Figure 2.0:   Model of a visiting card

The mediator

The mediator is a communications professional who monitors the group while the network is in operation. He or she is bound by a professional oath of secrecy, and has access to all the messages exchanged among the members of the group for which he or she is responsible. The mediator has all the statistical data required to analyse activity on the network , such as the frequency of log-ons, the number of messages sent and received, and the details on which users communicated with each other. He or she can suggest activities for the group as a whole, or help one participant in particular. If necessary, the mediator can

intervene to ensure compliance with the code of ethics applicable to interpersonal exchanges.

Follow-up to the Présence service

The service is designed to last a maximum of twelve weeks. We feel that this is sufficient time for the participants to create solid bonds, without causing them to become dependent on the system.

The goal of the Présence service is to encourage participants to communicate, aided by their anonymity. The service is not intended to be a goal in itself, or to replace existing medical-social institutions. Its ultimate purpose is to encourage participants to contact conventional interest groups.

RESULTS

Participation: surprising figures

All five groups showed considerable interest in using the Présence service. On average, 9.6 participants, out of 11, used the service for its entire duration. The volume of communication in each group was an average of 50,000 minutes, or 834 hours, over a period of 8 to 12 weeks. This volume corresponds to 5 weeks of 'round the clock uninterrupted communication on the network!

Most of the participants logged on every day, at a frequency

of four times a day , for an average of one and one-half
hours of communication. The women in the groups tended to spend
slightly more time on the system than the men.

The distribution of time over the duration of the service followed a curve that indicated a highly specific process. Thus there was more time spent on the system in the first week than in the second, since during the first week participants were overcoming their shyness and familiarizing themselves with the program. The fourth week was particularly representative of the impact of computers on the group, as exchanges became more frequent and generally more intimate. We termed this mid-point in the process the **relational peak** .

The tool

Learning the technical aspects of the system without a simulator takes two weeks. However, **with a simulator** , this learning period was reduced to one week. We concluded that training through simulation, the explanatory guide and the mediator's technical assistance were absolutely essential for users to familiarize themselves with the tool. The reliability of the computer also had a substantial influence on the degree of participation by users.

Different groups used the message, "cross-talk" and forum services differently. It appears that the method used depended on the degree of **intimacy** among users. This preference is comparable to the amount of distance, from a few centimetres to a few feet, that we decide to leave between ourselves and someone we are talking to.

Thus participants who felt more comfortable with each other made great use of the forum method, whereas a participant who was establishing contact for the first time with another or who wished to intentionally maintain some distance (psychological distance, in this context) would tend to use the message system. In this effort on the part of users to delimit the personal telematic space (psychological proximity!), we saw them trying

to find new rules of communication suited to the context of exchanges via telematics. The results of this attempt to redefine spaces were, in fact, fairly surprising. For instance, the group of senior citizens took longer than other groups to feel at ease. To maintain a respectful distance, even though they were at their terminals at the same time, they used the message service to communicate in real time, although this function is normally intended for communications with a participant who is absent.

The messages were fairly long, with an average of 450 characters. We consider that the **length of messages** reflected the need to elaborate on and explain the contents to compensate for the lack of non-verbal signals. Users who became tired of overly long messages developed a telematics language that enabled them to shorten their messages as much as possible. In fact, each group developed its own " **jargon** ". The most common methods were for users to find nicknames for each other (" mémé " for the mediator), use " **smack, bises or xxx** " to sign off, and sometimes the abbreviations " 10-4 " to indicate understanding of a sentence or message, " **bj** " for hello ("bonjour"), and " **zinzin** " when referring to the computer system as a whole.

Participation tended to be more **balanced.** Everyone respected others' right to speak in turn, in order to make the discussion more comprehensible. We checked the proportion of messages sent and replies received between pairs of participants, and concluded that it is possible to have a telematic relationship that is not

totally equal. Because of their dependence on the system, or because of a lack of motivation, some participants issue too many messages or not enough , respectively.

Participation by the mediator

Acting as mediator for a group over a period of eight to twelve weeks requires 47.63 minutes, on average, or eight hours a week. Reading all the exchanges among participants and statistical tables involves another hour and one-half a day. Thus the mediators worked two to three hours a day.

BEYOND FIGURES: THE MAGIC OF "PRESENCE"

"Présence is the mystery of anonymity, the ability to say freely what one wants or appears to be or simply is, that's what creates the magic ." (Participant in the group of senior citizens)

The effectiveness of horizontal assistance through telematics

Présence encourages self-help groups through telematics. If one feels that computers used as human relations tools are fairly impersonal, it is difficult to imagine a welcoming self-help approach based on telematics.

Experiments have shown, however, beyond doubt, that telematic assistance and support on the Présence system are spontaneous, intense and effective. It has been proven that computers facilitate exchanges, since they allow people to interact indirectly (the computer acts as middleman). Participants communicate openly, and the whole range of emotions is allowed

(joy, pain, anger). The birth of a warm and open emotional atmosphere has two main consequences.

Dependence : the ability to use the computer when one wishes to, and to explore a new freedom of expression, encouraged participants to use the network frequently, to the detriment of their regular activities.

Users felt less isolated and less "alone in their situation." That allowed them to develop greater self-esteem , which in turn encouraged their self-confidence , and produced a renewed desire to take charge of their lives: " Hi! Audrey, guess what! After five years, I've decided to apply for subsidized housing. I'm so happy now that I've made the decision that I wonder why I waited so long. " (A member of the group of victims of sexual abuse.)

By the fourth week, participants had already made solid friendships , which leads us to conclude that the "exchange and self-help" context of telematics, and the temporary putting aside of the social facade, presented users with a reassuring means of communication, where it was simple to listen, to discuss, to help one another and accept others' help. " On this network, you feel that people take a greater interest in who others are, rather than simply what they do ." (A participant in the group of disabled people.)

Horizontal assistance through telematics becomes more like other types of assistance once the pseudonymity is stripped away. Anonymous assistance holds an important advantage: it shields participants from the pressures exerted by the norm, and even exclusion. When the social facade was re-established, participants reduced their communication space with others. We determined the importance of anonymity by calculating the length of messages between anonymous and non-anonymous participants (those who had revealed some aspects of their social identity), and found that

messages among non-anonymous users were generally shorter and more superficial. Statistical grids showed us that the volume of communication among participants who had met each other before the end of the experiment fell off considerably, in favour of new relations with other participants in the group.

What did the participants talk about?

In each group, the subjects of conversation centred on their common concern. But that common concern was also a good pretext for simply talking about oneself. Users in all five networks discussed friendship and love, and everyone gained from the experience by redefining his or her definitions of these major topics.

Participants in the network of psychologists used the service to extract themselves from the role of "helper" into which their profession tends to slot them. They talked about themselves, their aspirations, and allowed their imaginations free rein in talking about friendship and love. " Let's go into the living room, make ourselves comfortable on the green sofas, and take the time to talk to one another. I know that even if we don't talk much, we'll take pleasure just in being together. " (A participant in the group of psychologists.)

In the network of disabled people, the anonymity did not last long because of circumstances outside the project. Accordingly, participants discussed less intimate subjects, concentrating more on playful exchanges. " So, to start off our discussion this evening, would you like a coffee? " (A participant in the group of disabled people.)

The network of victims of sexual abuse showed impressive solidarity. Most of the participants, some for the first time, recounted their trials, suffering and sexual dissatisfaction. " I

have problems in bed with my husband, and I know that it's
because of my past. I was wondering if you also have problems in
that respect? " (A participant in the group of sexual abuse
victims.)

The people in the senior citizens group proved both curious
and thoughtful, and discussed a wide range of subjects: the
family, education, retirement, leisure pursuits, religion and

volunteer work. " I said to myself this morning that it does a lot of good to talk about such things, in a way we are familiar with, with people of our own age and who share the same values. It really does a lot of good. " (A participant in the group of senior citizens.)

Those in the group of AIDS sufferers and people who had tested HIV-positive spent a great deal of time talking about the disease, the symptoms, effective and ineffective cures, and pastimes. The hope shown by some counterbalanced the despair of others.

Characteristics of the computer as a self-help tool

There are a number of observations to be made concerning the use of computers as tools for exchanges and self-help.

The use of a restricted means of communication results in an expanded interpersonal communication space . Users are less inhibited, and meet new people more easily. The context of communication, i.e. exchange and self-help, promotes positive communication and discourages insulting or disrespectful talk. Replies are not given quickly and off the cuff, but rather are well thought out ; users want to take full advantage of their anonymity to set their thoughts out freely without fear of condemnation. Everyone's opinions and experiences are more easily understandable and accepted in this non-threatening context. Creativity plays an important role, and is expressed through

drawings, poetry, songs and "thoughts of the day".

Two other characteristics of computers in the context of exchange and self-help are particularly interesting. On the one hand, the concept of distance inherent in the use of computers has, as a corollary , the user's **free will** . Participants are free to converse whenever, however and with whomever they like.Nothing and no one can oblige participants to use their terminals while they are protected by their anonymity. This situation is a

two-edged sword, however, as the same freedom allows participants to use the system heavily or to withdraw from it whenever they like.

On the other hand, computers appear to act as " therapeutic tools" , by opening an unsuspected door onto participants' imaginations . Conversing in writing, without seeing or hearing the other person, encourages the user not only to open up to the other, and to be creative, but also to imagine: " I'm trying to imagine you, teasing, laughing all by yourself (but in my company), I see you with brown eyes, fairly tall." (A participant in the group of psychologists.) Users made mental images of their interlocutors, and of where their conversations were taking place. They projected their desires and fantasies on the other person. They became actors, while remaining spectators to their own words. On the stage, users' entire imaginations played themselves out. As we know, the main purpose of images is freedom of expression .

The combined effect of using a restrictive means of communication and the activity of writing brought participants to relive their experiences, while allowing them to retrieve the image corresponding to a dynamic and evolving affective state. " I find that as I write down what I'm feeling, as I feel it, that I am sort of cleaning myself out--a mini-spring cleaning , you could say." (A participant in the group of senior citizens.)

The intensity and frequency of the emotions experienced on the network suggests that the tool possesses characteristics in

common with the mental imagery techniques used in psychotherapy. The phenomenon of **catharsis** , related to the release of emotions, was experienced by many of the participants on the networks. " I don't know what's happening to me... I have such sensitive emotions. I'm so moved that I'm crying. Excuse me, I'll come back in a minute ." (A participant in the group of psychologists.)

Participants' reactions throughout the duration of the service showed the importance of imagination. They wondered about the "reality" of their interpersonal communications: was it a game? a waking dream? a mirror on reality? We know that the imaginary falls between exteriority and interiority, absence and presence. The imaginary is not true or false--it has its own reality. As Virel puts it, the overall life of beings is in the imaginary (1977, p.134).

We feel that the results related to the functioning of the imagination open a new avenue among those already known in the use of computers as tools for assistance.

The role of the mediator

The experiments allowed us to conclude that a mediator in the Présence system is essential. The mediator, as we noted earlier, has access to all the messages exchanged within the group. He or she is therefore the only person with an overall view of the group and its participants.

The mediator's role is to employ this overall view to improve horizontal communications. The physical and geographic distance imposed by the computer, and the users' free will, must be weighed and counterbalanced by the mediator.

The effectiveness of the moderator lies in his or her ability to unify the group by creating a feeling of belonging . The moderator's interventions reflect to the group what it represents as a group. " I look at you and I tell myself: you're

fantastic! What human warmth in your conversations, what
attentiveness and candour. I thank each of you for sharing your
interior world honestly. Thank you for being yourselves. " The
mediator guides, informs, anticipates and encourages participants
in order to maintain group activity and to gradually bring users
to a point where they can regulate themselves.

The presence of a mediator also corresponds to the first requirement of a code of ethics for the use of telematics as a self-help tool. He or she ensures the confidentiality of messages and the quality of exchanges among participants, and sees to it that no one is excluded or manipulated.

We have noted that the mediator need not necessarily be a "specialist in the theme that constitutes the group's common denominator" in a horizontal communication structure. For instance, the presence of a sexologist in a group of sexual abuse victims changed the exchanges from being horizontal (self-help among equals) to vertical (consultation with a specialist). The participants talked to each other less while the sexologistwas present, preferring to ask him for information: "Could you recommend a book on sexual pleasure for me?" A mediatorpsychologist, however, was able to counsel the members of the group to which she was assigned and give them psychological support, because the members were not aware of her profession. A mediator cannot be an authority figure.

Access to information is important, there is no question. But the participants provided each other with a surprising amount of information, and the self-help was more effective among participants than between the mediator and a participant.

It would be interesting, nevertheless, to determine, in future research, how important users consider the vertical dimension in a self-help group employing telematics.

Face-to-face meetings and post-Présence

The mediator offered participants the chance to meet each other face-to-face once the service was completed. Most of them agreed to this suggestion, curious to get a look at those with whom they had established friendships.

The meetings were highly emotional. Momentary shyness, surprise when faces did not correspond to what they had imagined, and then feverish excitement. A network of friends had been born. Many participants continued seeing each other following this meeting. The greatest number of enduring friendships occurred in the senior citizens' group.

The group of sexual abuse victims continued their meetings as part of a group therapy process. The sexologist working with them reported that the quality of conversations and the openness of former Présence users were markedly better than in a regular therapy group after eight weeks.

DISCUSSION

The purpose of this research project was to look into the possibility of using telematics for medical-social applications. We showed that the effectiveness of computers as tools for promoting exchanges and self-help depended on the implementation of u ser-friendly software, specific structures for welcoming users and system operation (visiting cards, anonymity) and the presence of a mediator. In the Présence system, computers proved anything but impersonal, and actually encouraged personal exchanges and support.

We feel that the social applications of computer technology are important, promising and effective. The key to the success of Présence and other, similar, telematics services, lies more in

the concept of a " place of communication " than in that of a

" tool ". Indeed, experience showed here that the tool

becomes transparent, and makes room for the establishment of a new

form of social exchanges . Our main concern was therefore to

establish conditions for communications among users, conditions

that would comply with a code of ethics.

The promotion of self-help groups is a cause worth defending, in view of the disintegration of the social fabric, and the use of computers as transparent tools largely contradicts arguments to the effect that man-machine interaction is not to be recommended and is unethical.

We feel that a well-defined code of ethics is necessary to guarantee users that their communications will remain confidential. Mediators must have adequate training, and their activities should be supervised. The service should be offered for at most 12 weeks, given the phenomenon of dependence, and the number of users could be higher, if necessary, in view of the influence of the users' "freedom of choice". The promoters of Présence have already begun to rewrite the software to make the program even more user-friendly.
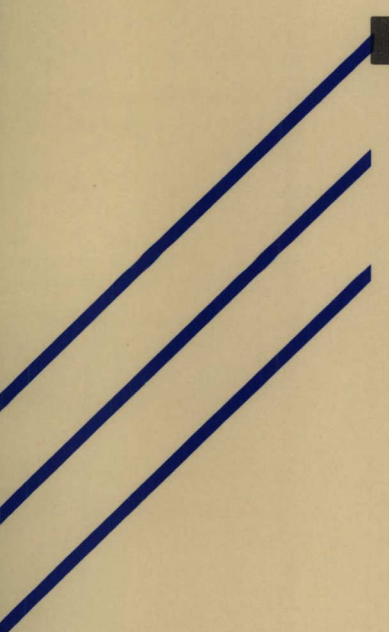
This research project raised a number of questions. Could mental imagery through telematics become a new technique in psychotherapy? Can the creation of an imaginary social context really lead to a face-to-face social context? If services such as this one did not plan meetings between group members, what would become of the reality of human interactions? Would the result not be greater isolation?

These questions, and others, should be the subject of further research, in an effort to ensure the smooth development of Canadian telematics technology. We hope that the results of

this research project will guide telematics services designers in their consideration of the importance of a code of ethics for telematics.
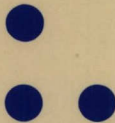
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