

In & Out: how to study interactions in virtual context

Abstract: On-line communication systems define interactions in new ways with effects on types of social organizations that emerge from people using them to communicate and work. Considering Internet both as a cultural artifacts, constructed and re-constructed in use, and as a culture itself, able to be inquired with cultural research instrument, is useful to get an insight about phenomena in cyberspace. Many methods are now used to study the CMC, coming from anthropology, cultural studies, linguistic, psychology and sociology. How is it possible to choose from and/or integrate all these different approaches? After a brief introduction to different approaches to the study of Internet and CMC we try to answer this question, illustrating the actual different methodologies and analytical tools. Following the Italian scholars Riva & Galimberti's Complementary Explorative Multilevel Data Analysis framework, we introduce theoretical and methodological instruments able, on our opinion, to construct a good research toolkit. Using the library-of-people metaphor, we underline the differences between using “in” techniques, characterized by the participation to online life with an ethnographic aim, and “out” tools, reconstructing cyber-life using forum posts or documents published on the web, with a particular interest to related research ethics issues.

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Introduction

Trying to look at the recent history of social sciences it is easy to note the researchers' effort to "stay out" of their settings. But now? What is it the present meaning to stay out? Useless research results could also drive to a completely re-thinking of research design, probably configuring a paradigm shift. Our aim is to describe this changing in a rather brand new part of communication studies: the Internet and the Computer Mediated Communication. In that context, in which it is possible to access to archived conversations without negotiating it, IN & OUT contrast, between a disclosed research and an 'unobtrusive one'¹, could be much more problematic. The aim of "collecting more truthful informations" (Corposanto, 2004: 30), in a sort of mimesis of natural sciences: "I stay OUTside, waiting to observe something to count", with a neo-positivistic flavour, searching for objective data, has been put in discussion by the result of three generations of researches, and by the contribution of hermeneutic and phenomenology in the 20th Century. Today, according to the influence of these philosophical approaches, we need a different point of view: "I stay INside, waiting to listen something to tell", in a cultural oriented research. Between IN & OUT there is a "mid-land" in which the present Internet and CMC research is emerging, like a practice of "working out situated responses" (Hine, 2005), with situated ethical and methodological peculiarities.

Another aim is to look for an integrated point of view in which every perspective could be powerful and useful. Therefore our paper is organized as follow: a brief introduction to the recent history of Internet and related CMC research; a second introductory part about two Italian scholars recent methodological suggestion (Galimberti, Riva, 2001) that seems to follow an integrative intent between IN & OUT orientations; a third part in which we will face the research ethics, introducing the metaphor of Internet as a library-of-people; in the fourth, we will talk about research techniques, in a mix between levels of analysis and the in-out continuum.

The Internet and Computer Mediated Communication research: from computers to communities (or from OUT to IN?)

After 25 years of studies it is possible to assign to the CMC a crucial role in clarification of social and cultural phenomena concerning interactions inside the net. The aim of this review is to explain developments of these "connections" (Sproull, Kiesler, 1991) even when they seem to be casual and chaotic. There are important communication issues in emerging concepts like web, community and virtual groups.

Considering CMC as the main object of research, we want to describe his evolution through (or related to) communication theories staying in his background, from a linear model of information transmission to a conversational (or dialogic) one, to look up, at the end, a participatory model of communication, the basic line of early web-phenomena as virtual groups and communities. From an evolutionary point of view we suggest a three-generation analytical explanation of the CMC research development:

- ◆ the first generation is related to the technical system, the computer inside asynchronous communications;
- ◆ the second one is focused on the emerging use of technical systems influencing the relations among users;
- ◆ the third generation is still engaged in a new scenario characterized by social and cultural construction of communication issues.

Each of these generations is focused on one single dimension (computer, use and users), but the other ones are also comprised and interrelated with different degrees. There are also methodological differences among: first and the second one seem to be quasi-experimental oriented whereas in the third the ethnographic approach is prominent (Talamo, Zucchermaglio, 2003).

¹ "The methods considered will certainly leave aside the awareness of the others to be subject of inquiry" (Corposanto, 2004: 21)

The first generation (focus on technology)

Since the creation of the Arpanet (1969), the CMC is still engaged in an enduring development. The technical features of the net drive researchers to analyze a single-way-mode direction of information, that is centralized, hierarchic, top-down. Hiltz & Turoff (1978), for example, direct their own interest not only to the deterministic change of mediated communication due to the ICT, but also to the effects of introduction of these artifacts inside organizations to sustain communication exchange among their members. The main hypothesis concerns the parallelism between communication and social relations: influencing the net characteristics it is possible to control social relations in organizations and in the same way it is possible to enhance the efficacy of organizational behavior. Recurrent question in that deterministic approach is: is it possible to generalize results from one context to another? In these years researchers start to study, at individual level and with quasi-experimental research designs, the effects of medium characteristics: a-synchronicity, whole text-based features and interactivity among the users.

The second generation (focus on different technology use)

The works of this period (in early 90's) are characterized by two different research approaches: first one studies the impact of CMC on the individual and its social relations mediated by computer communication inside and outside organizational environment (Kiesler & Sproull, 1986, 1991; Spear, Lea et al., 1990, 1994); the second concerns CMC aids in teaching and learning activities inside the educational and e-learning contexts (Kaye (1992)). The object of these studies is the comparison between virtual (text oriented) and face to face groups (verbal oriented) performance. The results show the absence, in virtual contexts, of social cues, constantly present in face to face environments. Virtual messages are unable to express physical and social signs with two main consequences: the negative one is related to aggressive and un-social behaviours, i.e. flaming; the positive is linked to a democratic view of hierarchical structures, with less social barriers. As noted by Hine (2000) these studies are based on the assumption that the system of mediation is the exclusive independent variable.

From another point of view, based on the British social psychologist Henry Tajfel's Social Identity Theory (1981), Spears, Lea et al. (1990, 1994) note that the characteristics of the perceived social contexts in which the electronic communication develops is the main variable: social pressure is not related to physical settings but it is extremely "path-dependent" (Lea, Giordano, 1999: 343). The study of emerging socio-cognitive characteristics of groups has been done according to the structures and patterns of interactions, the level of participations and, more rarely, through a content analysis of messages exchanged. A quantitative oriented approach still remains the principal one, using *a priori* variables and surveys.

The third generation (focus on users)

Scholars working in Computer Supported Collaborative Learning field (CSCL) underline the strong relationship between conversation and activity. From this point of view, conversation allows to create an inter-subjective meanings to share subjective meaning referring to common activities (Dillenbourg et al., 1996). In face-to-face modality, the exchanges have social and cultural features in conversation, that's the point of view of authors based on social theories of the learning. Lave (1997) states that learning is a co-construction of social meanings and consequently verbal exchanges must to be analyzed inside cultural mediated settings in which interactions appear. The attention towards cultural phenomena and natural contexts of everyday life shifts the focus from individual analysis of cognitive processes to collective phenomena by which people construct reality and human actions improve their meaning.

CMC third generation research is trying to explore virtual community phenomenon: scholars are looking for main concepts, their boundaries and useful methodological tools. The conceptual shift

from individual to social and cultural systems is causing a new configuration of observation and data collecting strategies (Hicks, 1996; Wertsch, 1998). Researchers are trying to study the meaning of the actions inside the cultural context in which they have been produced. From this point of view there is the necessity to set new methodological tools to define context boundaries and to identify related participant's meanings. This is the aim of our paper: contributing to a methodological awareness and helping researchers in choosing the most apt set of techniques.

The Complementary Explorative Multilevel Data Analysis(CEMDA) framework

As we stated in previous section the Internet (and CMC) phenomenon seems to be complex on different levels of analysis: people in interaction, media in use, relationship between people and media, situation, level of social presence and cultural context including situation matters. Galimberti & Riva have recently proposed (Riva, Galimberti, 2001; Riva, 2004) a method of analysis taking into account all the previous levels. Complementary Explorative Multilevel Data Analysis (CEMDA) is a set of research tools considering:

- the strategic role of cultural resources influencing the interaction inside (and through) the medium;
- the importance of each level of analysis (people, situation, context), using ad hoc mixture of methods according to the needs of the moment;
- the combination of results obtained in different level to sustain the analysis process and data interpretation;
- the integration of quantitative and qualitative tools to collect and analyze data.

Levels	Frames	Objects	Quantitative analysis	Qualitative analysis
<i>Context</i>	Institutions, Macro-groups	Shared History, Social rules	Survey questionnaires	Social network analysis, Interviews, Document and records reviews
<i>Situation</i>	Micro-groups, Social and physical environment	Norms, Roles, Environmental constraints, Practices	Survey questionnaires	Social network analysis, Interviews, Focus groups, Document and records reviews
<i>Interaction</i>	Relations, Actors, Artifacts	Goals, Competence, Affordances, Behaviours (including the communicative ones)	Individual questionnaires, Quantitative interaction analysis (duration and structure, computer monitoring, eye tracking, etc.)	Qualitative interaction analysis (Speech acts analysis, discourse analysis, analysis of conversations, etc.) Participant observation, Interviews, Dairies

Table 1 Units of analysis and methods used within the Complementary Explorative Multilevel Data Analysis (CEMDA) framework.

We have to indicate first the frame and object of analysis for each level. At the context level we

found institutions and macro-groups (communities) forming social framework. At the situation level we consider all the actors and objects engaged in collective report construction and diffusion, the communities of practices representing/linking them and physical settings in which the process growth. The last level is represented by people involved in with their aims, needs and opportunities perceived using the medium. Closing level is the whole amount of people's activities in interaction with the technological objects. Outcomes of every level are related in a recursive way supported by a vigorous set of research tools, as indicated in the table (from Riva, Galimberti, 2001).

Situating Ethical Problems in Internet Research: the Library-of-People Metaphor

In this paragraph we will face one particular theme object of debate between CMC and Internet researchers: the research ethics. After a look at some contributions coming from the literature, we will suggest a metaphor which could be useful for the researchers when approaching the field: the metaphor of the Internet as a library-of-people.

One of the main effort in the definition of ethical guidelines for Internet research is the result of the work of the Association of Internet Researchers ethics committee (Ess et al, 2002). The specificity of this contribution is the will to not substitute discipline specific guidelines or to set a strict protocol to be followed, but to suggest some point which will be cross-disciplinary in a contextualized research process. The result of this two year work is a series of question, inspired by the principles of ethical pluralism, cross-cultural awareness and the will of not giving 'recipes'. One of the main problem is how to consider data disposable on the Internet, with the difficulties to use the private/public dichotomy (Bruckman, 2002; Whalter, 2002).

Amy Bruckman (2002) suggested a solution: to consider people posting material on the Internet like amateur artists, referring to the category of semi – published material between the unpublished one and the published one. Another contribution facing the same problem is that by Bakardjieva and Feenberg (2001), who express the concept of alienation: researchers have to understand if people, using the Internet for publishing their material, have the intention of renouncing to their control on that.

Both these contributions, as well as the AoIR guidelines, are grounded on the idea of research as a situated practice, involving the development by the researchers of the ability to speak with the other (Geertz, 1973). Our metaphor of Internet as a library-of-people has the same roots.

The starting ideas is that in 'traditional' research we have two main sources for the data: the libraries, for literature or archived research data, and the field, for new empirical data. With the libraries we have a 'pick-up approach', reading, extracting informations and giving back results in forms that can be stored in the libraries again, like books, articles or conferences proceedings. There is no negotiation, the data collectable are simply there, we need only access to the libraries, we can be called unobtrusive.

With the field, both in quantitative and in qualitative research, we need to start a negotiation, explaining the aim of the research and giving back data not only like research report, but also with a confrontation with the people involved . The Internet can be seen as a continuum between a library and a field.

We suggest that if we think at Internet as a library-of-people we can enter a situational field, and develop situational skills able to give us more coordinates in order to develop a more aware ethical and methodological behavior. Let us explain the origin of this metaphor.

In the novel "Fahrenheit 451" by Ray Bradbury the world is characterized by a refuse of books and the firemen have the aim of burn the books themselves. People loving literature, like we discover at the end of the novel, leave the cities and memorize books, in order to keep trace of them. The people involved in this project recognize each other with the name of the book they memorized.

Our ideas is that Internet can be seen, from the point of view of a researcher, like a library where books are represented by people. In the shelves we will have people, not only text. So we need, approaching the shelves, to develop an interaction and show interactional skills, in order to understand, when we look for data in a CMC context, if we are in front of people using the web like a stage or more aware of his privacy. So, if we are not in front of explicitly published material, i.e. an online newspaper, we probably need to start an interaction with the web page maintainer and with

be solved in a situated manner, mainly during the result publication.

The on-line document review (not only homepages, portals, or newspapers, but every kind of archived data), apt to study the context and the situation, can be done with negotiation or not, both in data analysis and result publication. Asking questions about the will of alienation or not, appear like the main situational skill required.

Web – surveys (Hewson et al., 2003), useful for inquiry about every CEMDA level, involve a negotiation about the participation of subjects to the research, putting the researcher in an interaction with the subjects. But the translation of responses in statistical tables and the use of statistical tools in order to make the data suitable for the control of pre-designed hypothesis make the data analysis and the result publication nearer to an out approach.

The e-interviews have great requirements in terms of situational skills (Kivits, 2005), it is very apt to inquiry the situation and the interaction frame. His degree of library/people tendency is variable, both in the data analysis and in the result publication: for example, if we do a conversation analysis, with few transcription of interviews in the publication, we are in front of an approach similar to that of representations in the case of surveys.

The same can be said about focus groups (Mann, Stewart, 2000), mainly related to the situation level.

Participant observation, as core of the ethnographic method, is very people – oriented, in every phase. The interaction of the researcher with the members of the group studied, the will to “speak with the others” is mixed with the orientation in writing with polyphony and new modalities (Clifford, Marcus, 1996). Dissimulated participant observation is different because it stress the researcher responsibility, involving negotiations not explicitly related to the research activity, but to the legitimate participation (Sanders, 2005).

Conclusions: In and Out, different approaches for different situations

As we have repeated a lot of time, research is a situated practice, like every human activity. In virtual contexts this can be likely to amplify the complexity of research activity. From this point of view socio-psychological oriented researchers need an accurate explanation of objects, tools and methods to achieve a successful gathering, analysis and interpretation of data. In this paper we tried to show how scholars on the CMC and the Internet have moved their focus from one 'out', objectionable research of objectivity to a more 'in', situated, analysis of cultural contexts and cultural artifacts.

The CEMDA seems to be a good representations (constructed and objectionable like every representation) of the complexity involved in this kind of research, trying to give different methodological tools a good place.

The discussion about ethics and the library-of-people metaphor has a double aim: to reaffirm the situatedness of Internet and CMC research; to give researcher an image that can collect great part of the aspects related to the situated ethical and methodological choice they have to do.

The last part, trying to join the library-of-people (or in-out) metaphor/continuum with the CEMDA is the try to give Internet researchers a map, in order to orientate their choices. This map is not fixed and 'deontological', it is an artifact, subject to situatedness and practical negotiations.

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