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The Internet as a Library-of-People: For a Cyberethnography of Online Groups

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Abstract: The concept "cyberethnography" remains undefined in the social sciences while, at the same time, still overlapping too much with the more well-known concept of "virtual ethnography." The aim of our paper is to remedy this situation by underlining new directions in the ethnographic study of computer mediated settings. To do so, we define cyberspace as computer-mediated contexts intrinsically related to supposed-to-be "real" places. From this point of view the ethnography of online groups is not just the ethnography of the groups online (or the online ethnography of groups), but it is both the ethnography of online and related off-line situations, the ethnography of humans and non-human actors in these related fields. It is hybrid, like a cyborg. In a word, it is a cyberethnography.

In the first part of the paper, we discuss linkages between classical ethnography and its cyber developments. In the second part, we ground epistemologically the argument in favor of a robust social concept of "cyborg" drawing mainly from the fields called Science, Technology and Society (STS), and Organization Studies (OS). In the third part, we focus our argument on web-based group issues, using field data from our own research to define this kind of group and propose a metaphor, "the Internet as a library-of-people." This metaphor, which is strictly grounded in the cyborg concept, highlights the cyborgic characteristic of society that arises in research practice.

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1. Introduction

A quick search of the term "cyberethnography" in three main social science databases (Sociological Abstracts, Anthropological Index Online and psycINFO), covering three disciplines centrally involved in studying cyberspace (sociology, anthropology and psychology), produced just seven records. This probably means that the concept is still quite undefined. We suspect it is generally confused with the more well-known concept "virtual ethnography" (HINE, 2000). [1]

With a long standing tradition in cultural anthropology and linguistics, ethnography is now one of the most challenging of research approaches in the social sciences and humanities (DURANTI, 1997). Following the explosion of AITs (Automated Information Technologies)-based interactions during the 90s, some researchers began to use an ethnographic approach to study the Internet as a culture; an alternative to thinking of it as a sort of psychological laboratory in which to understand causal relations between socio-cognitive variables in groups' behavior (ESCOBAR, 1994; PACCAGNELLA, 1997). This second step, from ethnography to virtual ethnography, probably contained the main mistake, in spite of constant suggestions to look at the wider social and cultural contexts when studying the Internet (HINE, 2005). The mistake was contained in the prevailing conception of that "online practice" is the predominant concern of virtual ethnography. Paradoxically, a holistic approach, as surely ethnography is, was applied in a way that, in online settings, delimited the field rather than overlapping it with the off-line in the making of the ethnography itself. [2]

From our point of view, the resulting "virtual ethnography" has lost much of its heuristic power. The ethnography of online groups should not be strictly the ethnography of the groups online (or the online ethnography of groups), but it could be the ethnography of both online and related off-line situations, the ethnography of humans and non-human actors in both types of fields. It should be hybrid, like a cyborg. In a word, it should be a cyberethnography. [3]

So, why not consider the ethnography of groups online alone as a cyberethnography? What are the necessary epistemological and practical foundations of this mode of inquiry? How can we face it fruitfully? The aim of our paper, a contribution to reflections about ethnography in the 21st century, is to address these questions. [4]

In the first part of the paper, we discuss "why not" arguments that can be summarized in the following two contentions: 1) In the 21st century there are no challenges for ethnographic practice, so using a new label like "cyberethnography" can be fashionable but is not really needed. 2) The label "cyberethnography" does not bring anything new to the reflection about ethnography of online groups if compared to other, established labels—e.g., "virtual ethnography." We will show how both these arguments are conceptually incorrect and thus the search for a new label is intellectually legitimate. [5]

In the second part, we ground epistemologically the argument in favor of the "cyborg" concept, mainly drawing from the fields called Science, Technology and Society (STS), and Organization Studies (OS). The argument in favor of cyborg in essence is that the cyborg lexicon blurs boundaries and allows the discarding of usual Cartesian dichotomies, e.g. mind/body, human/non-human. [6]

In the third part, we focus our argument on web-based groups' issues, defining them and proposing a metaphor, "the Internet as a library-of-people," which is strictly grounded in the cyborg concept. The metaphors also highlight the cyborg characteristics of society that arise during research practice. [7]

To sustain our argument, we discuss empirical data from two of our own case studies of online groups. These illustrate how "cyborg-inspired" practices give meaning to the word cyberethnography and how ethnography can be fruitfully carried on in the 21st century challenges. [8]

2. Looking for a New Label: The Challenges for Ethnography

The increasing presence of electronic technology changes the way we relate to each other and the way knowledge and technology are produced. Current examples include the (so called) Web 2.0, Wikipedia, and the Free/Libre and Open Source Software (FLOSS) movement. These changes pose new challenges for the ethnographer, who has not only new spaces of inquiry, i.e. "virtual communities" (RHEINGOLD, 1993), but also new technologies and elements to consider, which HAKKEN (2003) labeled Automated Information Technologies (AITs). In this paper we argue that a rethinking of ethnography in this changing world can be fruitfully framed as cyberethnography, or an ethnography of cyborgs. This proposal would be completely useless in two cases: if ethnography doesn't need a new label, because nothing substantial is actually changing for practitioners; or if the label we propose merely carries the same meaning as the existing one, such as "virtual ethnography" (the title of this special issue.) In the next paragraph, we show these conditions to be absent and thus how the search for a new "something + ethnography" is completely legitimate. [9]

Ethnography has historically been the methodology of anthropology. The reflections taking place in this discipline, the "birthplace" of ethnography are indicative of what is changing. Later, we will show how the appropriations of the ethnographic gaze by other disciplines, like sociology and information systems development, use "ethnography" differently, adapting it to the new fields of inquiry and research questions. We think that these ways of reconceptualizing ethnography, which provide it with nuances which grasp the contemporary AIT-mediated world, are legitimate. [10]

In the 1980s, anthropologists began to discuss the legitimacy of ethnography and ethnographic writings in a new way, what is now referred to as a "crisis of representation" (CLIFFORD & MARCUS, 1986; MARCUS & FISCHER, 1986). Following post-modern theorizing, these discussions questioned not only how ethnographies appear as texts, but also the way they are produced. Theory,

methods and politics were rethought. As the 20th century was ending the reflections went on, as in MARCUS' (1999a) *Critical Anthropology Now: Unexpected Contexts, Shifting Constituencies, Changing Agendas*. In this book, different perspectives on ethnography come up, but the main issue is that ethnographers are facing changes in their practices. In MARCUS' view, these changes are connected with: "the sense of locations and spaces in which they operate," collapsing "the earlier distinction between system and lifeworld" (MARCUS, 1999b, p.16); the fact that "ethnographic positions are always implicated with others that are both like and unlike it" (p.18); and the need "to treat cultural formations as something far more complex than those encompassed in the everyday lifeworlds of a limited set of subjects concentrated in an easily defined place" (p.19). According to MARCUS, ethnography is changing in space, positioning and objects of study. [11]

The implications of these changes are brought out when one looks outside of anthropology at areas of study, like sociology and information system development, that have seen an increasing number of ethnographic studies in these same years. (For a European "state of the art," see KNOBLAUCH, FLICK & MAEDER, 2005.) This work redefines the practice of and labels for ethnography. For example, HUGHES, KING, RODDEN and ANDERSEN (1994), describe four ways in which ethnography is used and conceptualized in information system development: as a support for design, as "quick and dirty," as an evaluation instrument, and as a follow-up. What is relevant here is that as the ethnographic gaze moves outside anthropology, it is re-constructed according to the different research questions and problems faced by practitioners. Another example comes from the Organization Studies field: BRUNI (2005), for example, discusses what he calls "the ethnography of non–humans." According to him, including non-humans in organizational ethnography redefines the concepts of place, action and subject, another example of how ethnography and the field are re-shaped by particular research questions and points of attention. In both these fields, the ethnographic gaze is discussed and re-labeled according to different aims and means. So, a new label when talking about Internet-mediated groups is needed. (We will argue that ethnography of cyborgs, or cyberethnography, are among the most suitable and flexible labels.) [12]

The ethnography of online groups is not a new thing, and is rooted in at least two main classical books: Howard RHEINGOLD's *Virtual Communities* (1993), and Christine HINE's *Virtual Ethnography* (2000). So why are we discouraging the use of the already established "virtual," and arguing for a new label? Our argument is strictly connected with the deep meaning of the word shared by these two books' titles: *virtual*. [13]

3. Exploring the Concept of the Virtual in (so called) Virtual Groups

AITs are by now so deeply internalized into modern culture that defining groups as "virtual teams" was easy. When one looks at the *mare magnum* of theoretical and empirical literature on Computer Mediated Communication (i.e., SPEARS & LEA, 1992; SPROULL & KIESLER, 1991), one finds often the same definition with the same structural dimensions. For example, a virtual team is a "collection of four to 12 individuals collaboratively working on a common and interdependent task or goal […] distinguished by one additional factor: the dimension of virtuality" (GODAR & PIXI FERRIS, 2004, p.6). However, while we may already know what the team is, problems start when we try to merge the word "virtual" with it. TOWNSEND, DEMARIE and HENDRICKSON (1998) state that a virtual team is a group of organizationally or geographically dispersed workers brought together to work on a common project through communication and information technologies. GROSSE (2002), more briefly, describe them as teams conducting all or most of their interactions via electronic tools. JENNINGS (1997) defines them as groups of people who collaborate closely even though they may or may not be separated by space, time, and organizational barriers. PAPE (1997) tries to be more precise in terms of distance: every team that needs to work together and whose members are more than 50 feet apart is a virtual team. The list could be extended and made more precise, but we can already underline some important issues, following the influential summary developed by GODAR and PIXI FERRIS (2004). First, traditional barriers of time and space are broken down by new communication dimensions introduced by technology. Second, traditional group processes are modified in a variety of ways. Discussion of these usually features positive changes rather than negative concerns (the egalitarian role of AITs inside groups, for example, is one of the most analyzed, but not so frequently found, phenomena). Third, AITs are a big opportunity for virtual teams to enhance their own capacity to access, share, manipulate, retrieve, and store information. [14]

Despite three decades of research in very diverse fields, from Information Systems to Psychoanalysis, the empirical correlates of virtuality remain poorly understood. Time, space and infrastructure are the main facets that have been explored, each with consistent influence on methods used to study virtual teams. Virtual teams remain an obscure phenomenon, hanging in the clouds (or the fog) of cyberspace. The "virtual" side remains a more philosophical than empirical concern. We have many reflections *about* the term in much literature (SHIELDS, 2003; STYHRE, 2006), but empirical evidence is still missing. The term enjoyed popularity inside a big debate about "virtual communities" in the early 1990s (RHEINGOLD, 1993), evoking a utopian pioneering spirit, with slogans like "homesteading on the electronic frontier"; "unbounded sociability was the promise" (CASTELLS, 2001). This story is seldom told now, the utopian approaches vacating in favor of others more focused on complexity and hybrid concepts. [15]

From our point of view, the virtual is not the opposite of the real. "Virtually" is one of multiple ways of living in a context. We do not live only virtually. The late twentieth century French philosopher Pierre LEVY argued this on his books *Les*

technologies de l'intelligence (1990), *Cyberculture* (1997), and *Qu'est-ce que le virtuel?* (1998). Following DELEUZE (1968) and SERRES (1980, 1987, 1994), he fights against the conception of reality as a tangible presence, and the virtuality, in contrast, as missing the real, a sort of postponed presence of "what is happening right now." [16]

LEVY looks at the origins of the word itself. "Virtual" is derived from a series of Medieval Latin words, such as *virtualis* and *virtus*. In the tradition of scholastic philosophy, "virtual" is everything which exists potentially but is not (yet) in action. The virtual tends toward actualizing itself but without a formal and concrete realization. In LEVY's words "the tree is virtually present inside the seed" (LEVY, 1998, p.5) and the "virtual is not opposed to the real, it is an opponent of the actual instead: virtuality and actuality are just two different ways of being" (p.5). He still citing DELEUZE when he says "the possible is already constituted but it still remains in the limbo […] the possible is exactly like the real: just the existence is still missing in it" (p.6). [17]

LEVY offers good reasons for changing our stereotyped ideas about "virtual vs. real." A good example of what is a "real" virtual attitude is contained in *Les technologies de l'intelligence* (LEVY, 1990). This book has a brief summary of what groupware was like during the mid eighties of the last century. While it is possible to relate the purely logical out of software into the domain of the possible/real, the human-computer interaction is inside the virtual/actual. At the beginning, a software concept needs very original ways of treating problems. Each software programming team defines and solves the problems in different ways. In the end, the software actualization between users, such as in group work, disqualifies some competences, allows new mechanisms to emerge, provokes conflicts, transforms some situations, and introduces new dynamics in collaboration. [18]

The real looks like the possible. The actual is not similar to the virtual; instead, it replies to it (LEVY, 1998). Actualization and virtualization are both powerful concepts we can use to explain what usually happens during the life of (so called) virtual teams. Following the theoretical path traced by LEVY, it is possible to state that virtual teams are constantly engaged in two kinds of dynamics, actualizing (that is, trying to solve problems), and virtualizing (that is, looking at new problems and issues). Then they, and actualize and virtualize again, with different network reconfigurations. [19]

So, paradoxically, virtuality is one of the most important devices involved in reality creation. In the words of LEVY, "if virtualization was just a transfer from reality to a set of possible realities, then it will be de-realizing" (1998, p.9). Virtuality appears, in this sense, as one of the *effects* of online groups' practices, rather than being constitutive ontologically. [20]

Even though he characterized LEVY's work as "enthusiastic popularization," Steve WOOLGAR (2002) is fully in this path. In the opening chapter of the book *Virtual Society?*, he reconsiders the rationale behind all the hyperbole-based

narratives on the virtual and virtuality. The world of AITs is full of "epithetized phenomena" (WOOLGAR, 2000); that is, descriptions used to conjure a future consequent to electronic technologies. Terms such as virtual, interactive, information, global, and remote are all epithets. They are applied to various existing activities and institutions to give them more sustainability and positive appeal in this brand new world. In these descriptions, technologies are always good or "good feelings creation devices." Education (with a small "e" in front) is going to be more efficient than the previous "no electronic" version. Recent empirical evidence indicated instead that when attempts are made to make the virtual the unique context of social practice, no attention being paid to broader contexts (even outside the famous information highways), the practice starts, paradoxically, to loose its weight (CROOK & LIGHT, 2002). Again, the virtual is not the counterpoint of the real but one of the possible dimensions of it. [21]

To manage all the concerns about "virtual and real" in a better way, WOOLGAR (2002) proposes "five rules of virtuality." We want to underline the three which we consider more representative and useful for empirical and theoretical aims. The first of these rules stresses the connection between technologies and the broad social contexts of design and use: "The uptake and use of the new technologies depend crucially on local social context." This means that virtual technologies are not a context by themselves, but they are an, often small, part of large dynamic texture of actors, objects, connections, social practices, and meanings (GHERARDI, 2005). [22]

The second one is the simplest but at the same time quite powerful: "Virtual technologies supplement rather than substitute for real activities." The previous example of e-education is very appropriate, in that it describes virtual activities as open systems, standing on the same side as "real" ones. As CROOK and LIGHT (2002) state, the main mistake of many virtual learning projects, for example, is to decouple learning from its broader cultural context, underestimating the role of "culture paraphernalia" (WOOLGAR, 2002), such as artefacts, technologies, symbolic systems, institutional structures, etc. [23]

WOOLGAR's third rule summarizes the previous two: "The more virtual, the more real." Previously we described LEVY's point of view on virtualization and actualization. This third rule actualizes this relationship, mostly though the "problem creation" aspect of virtualization. As WOOLGAR says, the introduction and the use of new "virtual" technologies can actually stimulate more of the corresponding "real" activity. Some researches confirm this tendency (NETTLETON, PLEACE, BURROWS, MUNCER & LOADER, 2002) with evidence that a person's use of CMC leads to further or increased use of more communications media. [24]

These rules, rather than being a rigid schema for researchers, can serve as difficult but suggestive paths and trajectories for cyberethnographic field work. It could be helpful, as we will show later in the paper, for managing the continuous online/off-line stress attending the following daily interactions of computer mediated groups. In this sense, cyberethnography itself is hybrid. [25]

We have seen how, according to LEVY and WOOLGAR, the virtual is potentially here. This is related to what HAKKEN (2003) labeled "proto-cyberspace," a space that *may* be constructed, landscaped. However, as we argued, this "virtual everything" must be understood as a space of possibility, as inscribing a discourse of presence in absence in the "real life." A different conception is that of one of the most famous books on online ethnography, *Virtual Ethnography*, by Christine HINE (2000). Listing the "principles of virtual ethnography" (pp.63-65), HINE points out that virtual ethnography is not virtual only in the sense of "disembodied." At the same time, cyberspace is not to be thought as something detached from real life, so a potential contradiction emerges: Cyberspace is not a realm detached from real life yet, they are rhetorically contrasted, so cyberspace can be considered primarily as a disembodied space. We really appreciate HINE's work, including her effort to propose a methodology and epistemology of Cyber-Scientific-Knowledge (HINE, 2005). Nonetheless, the use she makes of the term "virtual" poses more challenges to ethnographer than it brings solutions. Are the virtual and the real separated but potentially linked, as described by LEVY, or do they follow the "the more virtual, the more real" motto of WOOLGAR? Is the virtual disembodied? A "virtual" lexicon forces us to set up starting points that constrain the entire inquiry, whatever the answers to these questions. Instead, a lexicon reducing the a priori assumptions about cyberspace, while still able to account for them when they become empirically founded, is needed. We think that this lexicon is that of the cyborg. [26]

4. Cyborg Epistemology

What is a cyborg? According to CLYNES and KLINE (1960, reprinted 1995), the first entities described by the term "cyborgs" were "artifact-organism systems which would extend man's unconscious, self-regulatory controls" (p.29). As we can see in this statement, which comes from two scientists involved in rethinking space trips, cyborgs have three characteristics: they are hybrid of human and non–human components; they are systems, so they can be conceived as having interdependent elements, upgradeable and removable, but relationally dependent on each other; and their aim is to extend human unconscious capabilities (in these case to help with space trips). From this starting point, the cyborg lexicon passed through science fiction novels (GIBSON, 1986), allowing HARAWAY (1991, p.149) to state: "A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction." [27]

Thus, the cyborg is today a figure able to stay in the undetermined locus between the modern essentialist dichotomies of human/non-human, mind/body, and nature/culture. Are people with a pace-maker "purely" human? Is our knowledge only in our mind? Is our culture possible without our technologies? These questions don't find always a direct and immediate answer, thanks to the cyborg, yet the cyborg concept makes it possible to ask these questions and put them on the research agenda for ethnographers. To cite John LAW (1992): "If you took away my computer, my colleagues, my office, my books, my desk, my telephone, I wouldn't be a sociologist writing papers, delivering lectures, and producing knowledge" (p.381). If LAW subjectivity relies on objects around him, is he a

cyborg? We propose that a cyborg be conceptualized as "every entity carrying culture" (HAKKEN, 1999); that is, the actor-network of entities speaking and producing meanings. It is in this sense that John LAW is a cyborg. [28]

At the core of the cyborg there is what can be called non-modern epistemology. By this term, we refer to the LATOUR's (1993) point of view: Modernity, represented by BOYLE and HOBBES, separated nature and culture, things and society. This happened both by translating human and non-human entities into permanently unstable hybrids and by producing stable and distinct ontologies between the elements forming these hybrids. The cyborg figure is non-modern because it makes explicit the collapsing of boundaries between the different ontologies, as well as making questionable the origin of these ontologies and the political meanings they have acquired, which give form to the different meanings of reality, in an "ontological politics" (MOL, 2002) manner. Non-modern epistemology is not only a contribution of the study of science and technology. It also calls on researchers to reconstruct their categories and language in a way less dependent on *a priori* assumptions, to search for an infra-language (LATOUR, 2005), A cyborg lexicon is able to show both that humans and non–humans (nature/culture, mind/body, virtual/real) are inextricably connected but, at the same time, how such dichotomies take shape and spread. It can show how realities are constructed, considering that the better they are constructed, the more they are real (LATOUR, 1999). From this point of view, the cyborg lexicon is anti-reductionist; it doesn't allow the predominance of only one translation, but it calls for a space of multiplicity of knowledges and voices (HARAWAY, 1991). This also holds true in organizations, which should be considered unfinished, unstable, and formed by processes of organizing (COOPER & LAW, 1995). It's not difficult to find overlap between the non-modern epistemology and the post-structuralist one represented by FOUCAULT or DELEUZE and GUATTARI. The overlap consists in attention to relationships between entities. We refer to non-modernity to stress how this epistemology is not an evolution of the modern project, symbolized by DESCARTES. This latter is something that needs to be overcome, its roots and practices recognized, along with the dichotomies it produces. [29]

Summarizing, we have argued that the "virtual" lexicon brings with itself assumptions about potentialities and differences between itself and the real. These assumptions can't be accepted because of the conceptual confusion connected with doing so. We have argued in favor of an epistemology and lexicon, that of the cyborg, that avoid these assumptions because of its ability to grasp the unfinished and undetermined. With the cyborg lexicon, new questions arise: if "cyborg" is a wide and powerful concept, what is cyberspace? What is the relationship between the Internet and cyberspace? How does one study online groups from a "cyborgic" point-of-view? The next section answers these questions. [30]

5. From Cyborg to Cyberspace: Is Cyberspace Everywhere?

We have argued that a cyborg is a figure that can help researchers to avoid, at the start of their research, the inscription of *a priori* assumptions about ontologies, realities, and potentialities. The unique but powerful assumption of a cyborg lexicon is that everything—humans, organizations, and social formations—are unfinished and hybrid. This standing point fosters another question: If cyborgs are everywhere, due to the wide meaning of the word, what is cyberspace? Is cyberspace everywhere, undermining the usefulness of the category? This would be the case if at least one of the following conditions were realized: That cyborgs have always been here in essentially the same way that they are here today, so a new label is useless; that cyborgs are literally everywhere; or that cyberspace is a social formation which isn't novel when compared to previous social formations. We now show why these statements are conceptually wrong, so the need for a definition of what cyberspace is, or can be, is legitimated. [31]

According to HAKKEN (1999), we have always been cyborgs, so we can think that cyborgs have always been here, in a hybrid and unfinished form. But have cyborgs been here always in the same way? According to MOL and LAW (1994), we can distinguish three different kinds of spatiality in social topology: regions, networks and fluids[1]; the first one is more stable, the last one is more flowing. We argue that cyborgs have not been here in the same way as in the past, because social topologies are changing or, at least, their new forms open up spaces for changes. For example, is the cyborg body the same? This would not be true if it were no longer the case that, as in the past, prostheses, one of the cyborg figure characteristics, were attached only to the outside the human body (think about clothes, glasses, and so on, which certainly have an extended cyborgic character). Indeed, CLYNES and KLINE (1960) argue that the cyborg points to ways to change bodies from the inside. The mixture between humans and non-humans has become more intimate and indistinguishable. Bodies now are changing the regions, networks and fluids around them, the point that GRAY and MENTOR (1995) wrote about as the new "Cyborg Body Politic." [32]

Certainly these new cyborgic forms' development is connected to the diffusion of AITs. Cyborgs, as a concept, emerged contemporaneously with the diffusion of the first computers and their historical co-evolution found a mixture with biotechnology. This is true at least in discourses of science, science fiction and social perspectives (ESCOBAR, 1994), as in the idea of a more integrated space between human and machines, a space which can be actually labeled proto-cyberspace, a cyberspace which is not completely here but can still be cyb-orgically landscaped (HAKKEN, 2003). As the debate on the digital divide suggests, contemporary cyborgs are connected with the diffusion of computers and biotechnology, so cyborgs of this kind are not everywhere. The emergence of things like the Open Access movement, the FLOSS movement, and a Declaration

1 The argument by MOL and LAW is a theoretical one, related to the performativity of spatiality by the social. Our suggestion, following the ethnomethodological influence, is that every human being develops sufficient social theory while cyberspace changes the spatiality of this social theory, as our examples shown.

of the Independence of Cyberspace (BARLOW, 1996) make it possible to think about cyberspace as a space where social formations' elements, like the concepts of individual and property, are problematized in discussions, which points toward deep changes in contemporary and future societies. FISCHER (1999) points out that cyberspace is a complex phenomenon, involving finance and corporate interests; the undoing of property rights and moral codes; an hardware technology; a space for self-organizing models; a space of confusion between libertarian ethics and market and political mechanisms; an arena productive of metaphors; an historical phase. [33]

In sum, cyberspace is complex and reshapes the different elements of the regions and networks of the topology of contemporary societies. This makes it possible to think of cyberspace as an arena of inquiry substantially different from previous ones. In this case, the questions become: Which domains are appropriate for ethnographic inquiry into cyberspace? How should one investigate them? In the famous article, "Welcome to Cyberia," ESCOBAR (1994) listed five possible domains: the production and use of new technologies; the appearance of computer-mediated communities; studies of popular culture on science and technology; the growth and qualitative development of human computer mediated communication; the political economy of cyberculture. Our work, as indicated above, started with questions about the study of online groups, the focus of the next section. [34]

6. The Internet as a Library-of-People: Doing the Cyberethnography of Online Groups

We have questioned the appropriateness of the label "virtual ethnography" for inquiries into cyberspace. We argued that in the 21st century, ethnography is changing in relation to spaces, positioning and objects of study. Going further, we suggested that the term "virtual" implies something about the relationship between the real and the virtual that, if taken as the starting point of inquiry, will distort research. Instead, we argued in favor of an epistemology and ontology of research that stresses the hybrid and unfinished character of cyberspace and of cyborgs. At the same time, we faced the issue of whether the diffusion of cyborgs made cyberspace different from other social formations. We showed that the constructions of cyberspace, and the debates taking place around it, question the established regions of the social. Consequently, if we think of a new social formation as a social formation with new relations between regions, networks and fluids, cyberspace is potentially new, and we can participate in its landscaping, as something with a possibly substantial degree of novelty. [35]

Yet another question arises in operationalizing such approaches. How can we define online groups in a way that does not incur the problems of the "virtual" lexicon? How do we bind our methodological concepts? According to WARD (1999, p.96), "Cyber-ethnography differs from regular ethnography as it avoids holding any preconceived ideas concerning the existence of community." So, how to define a group as an online group (community, if this is the focus of an empirical inquiry)? Any group has a spokesperson according to LATOUR (2005),

an entity that traces a continuously re-defined boundary between who is inside and who is outside. So we have to identify spokespersons in cyberspace. In a technological mediated environment, we have cyberspace spokespersons: technological places—websites, online forums, mailing lists servers, etc. Some kind of textual and technology mediated artifact is acting as the spokesperson of an online group, talking for them, defining, at least partially and in an unfinished way, who they are and what they do. Our cyborgs are humans and texts. This poses another question: Are online groups reducible to the texts representing them, or are the texts mirrors of the humans who have been considered as the classical informants and subjects in ethnography? Again, we have to stress that we can't answer this question before starting an inquiry. To deal with this problem, we propose a metaphor as evocative as it can be for a researcher at the beginning of an inquiry: the metaphor of the Internet as a library-of-people. [36]

This metaphor is deployed to avoid the human/texts dichotomy that cyberspace brings, Others like Amy BRUCKMAN (2002), also suggest solutions. Hers was to consider people posting material on the Internet as being like amateur artists, their post being in the category of semi–published material, that between the unpublished and the published. Another effort facing the same problem is BAKARDJIEVA's and FEENBERG's (2001) concept of alienation, that researchers have to understand if people, using the Internet for publishing their material, have the intention of renouncing their control of it. Both these contributions, and our metaphor, are grounded in the idea of research as a situated practice, involving the development by the researchers of the ability to speak with the other (GEERTZ, 1973). [37]

Our metaphor starts with the perception that, in "classic" research, we have two main sources for data: the libraries, for literature or archived research data, and the field, for new empirical data. In the library we take a "pick-up approach"—reading, extracting information and giving back results in forms that can be stored in libraries again, like books, articles or conferences proceedings. There is no negotiation; the data to be collected are simply there. Since, we only need access to the library, we can be unobtrusive researchers. [38]

In the field, whether doing quantitative or qualitative research, we need to negotiate in order to start. That is, we need to explain the aim of the research, and we give back data not only in forms like research reports but also in discussion with the people involved. The Internet can be seen as something like a middle point between a library and a fieldsite. Technicians like Mitch KAPOR or Ed KROL also stress the parallelism between the Internet and a library[2], but social researchers have instead adopted the "human subject model," considering the Internet as built up only by people. (In this ironic sense, our metaphor has a socio-technical flavor!) [39]

2 "What we had was a library where all the books were dumped on the floor and there was no card catalogue," Ed KROL in "Getting up to speed on the computer highway," by Joshua QUITTNER, Newsday, November 3, 1992.

However, if we think of the Internet as a library-of-people, we can enter it as a situational field and develop situational skills that enable us to give more coordinates, which in turn enables us to develop more aware methodological behavior. Let us explain the origin of this metaphor. The world of the novel *Fahrenheit 451*, by Ray BRADBURY (1953) is characterized by a refusal of books. The firemen aim to burn the books themselves. As we discover at the end of the novel, people loving literature leave the cities and memorize books, in order to keep a trace of them. The people involved in this project recognize each other with the name of the book that they have memorized. [40]

The Internet can be seen, from the point of view of a researcher, as like a library where the books represent people. In the shelves we will have people, not only text. Approaching the shelves, we need to interact in a skilled fashion in order to understand. When we look for data in a CMC context, we are in front of people using the web like a stage, people who are more aware of their privacy. So, unless we are studying explicitly published material—e.g., an online newspaper—we probably need to start an interaction with the web page maintainer and with the group involved. Whether to do so or not is a very situated choice. The analogy of the library-of-people should make us remember that the situatedness of research means it cannot be faced with a "recipe" or rigid model. The potential for hybridization and unfinished discourse of the cyborg is fully deployed in this metaphor. [41]

The Internet as library-of-people metaphor has, then, a double aim: to affirm the situatedness of research practices and to give researchers an image with which to confront methodological difficulties without resorting to "black-boxed" solutions. [42]

We shortly describe some methodological choices we made in our PhD thesis work. We analyze two different kind of online groups: the first one a software development group inside the Free/Libre and Open Source Software movement, the second an interdisciplinary European work psychology association engaged in studying and promoting entrepreneurship inside and outside academic places. [43]

7. Cyberethnography: Two Empirical Cases

We focus now on issues of ethnographic practice in cyberspace, like the process of actualization and virtualization we introduced above in analyzing the work of LEVY (1990, 1997, 1998) and WOOLGAR (2002). On our analysis, computer mediated groups are not absorbed in a strange kind of virtual reality; their participants simply experience another way to live their own world. They are not in a technology bubble, but their interactions often do actualize online but then become "virtual," problematically creating new concerns for the group, like the need to move from online to off-line. As explained by HINE (2000), this particular issue is about more than which site of interaction matters, because it is a boundaries matter. Accordingly to HINE, boundaries "are not assumed *a priori* but explored through the course of the ethnography. The challenge of virtual ethnography is to explore the making of boundaries and the making of connections, especially between the virtual and the real" (HINE, 2000, p.64). The

HINE argument is convincing except for the use of the term "virtual," which undermines the statement quoted. [44]

We now turn to our empirical cases. In the FLOSS software case, we focus on negotiation of access to the "field and moving into practice the suggestions about the Internet-as-a-library-of-people." In the second case, we show how "cyborg" and our approach to the virtual can fruitfully follow the construction of boundaries in an online group. [45]

7.1 Cyberethnography part one: Ethical choices and negotiating the access

During the field access negotiation process inside the software developers' community, several issues were present: the hybrid nature of cyberethnography, the consideration of the group via the library-of-people metaphor, and the cyborgic stress on reducing the *a priori* assumptions. This group was strictly connected to the release of the source code of a proprietary operating system (Solaris, later OpenSolaris[3]). This followed from the choice by a corporation, Sun Microsystems, Inc., to embrace an Open Source license. Free Software, Open Source, or briefly FLOSS (Free/Libre and Open Source Software) is a way of developing software, and a social movement thus entailed, that involve a change in the copyright regime about software, one putting at the center the user of software instead of the producer. At the same time, a key feature of some FLOSS software licenses is what is known as copyleft, a legal mechanism that introduces a form of reciprocity between software developers. The operational starting point "is that an online group" already exists, as does a spokesperson for it. This is the OpenSolaris website, which states that "The OpenSolaris project is an open source community and a place for collaboration and conversation around OpenSolaris technology." [46]

At the project's starting point, a coordination board was appointed by the corporation. The board was composed of five people, all outside Italy, whose aim was to coordinate development work and carry out community building activities to preserve independence from the corporation. For the fieldworker (TELI), field access negotiation and starting point processes were contemporaneous, and both followed a mixed online/off-line trajectory. [47]

The first contact was an off-line meeting with one of the corporation's Italian manager (in spring 2005). TELI explained to him the research design. (He was not directly involved in the development project but was asked to be a linking node with the developers' community.) An e-mail interaction followed the first contact with board members, facilitated by the mediation of the Italian manager. TELI's first e-mail was posted on the project mailing list following a distinct request for it from a board member. After that, without any public comments by community members came an off-line meeting with two board members: This meeting achieved field access, including the opportunity to do e-mail interviews

3 Solaris and OpenSolaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

and a link to some laboratories in which the project was started before public release. [48]

In summer 2005, a web page was created to present the research (an action repeated after the renewal of the web page at the beginning of 2007), and a message was posted to the main project main mailing list. This posting was followed by a single public comment declaring interest and two private e-mails, one appreciative and the other disapproving. The disagreement was not about researching FLOSS developer communities but mostly about choosing to study this community and not other ones more interesting to the person who posted the message (an observer, he wrote, not an involved participant). [49]

This story illustrates the hybrid character of cyberethnography. Several relevant interactions occurred off-line, but not in particularly "virtual" way. The first website (see Figure 1), shows a couple of elements. Firstly, the title, as well as the subtitle, declares the aim of posting research activity at the same level as that of the community studied. This act discards an approach privileging the researcher's presumptions and point-of-view. Secondly, the academic aspect is shown on the right side with the personal information on the left. That choice was due to an analysis of some community participants' web-logs, which contained comments about FLOSS world, as well as information and pictures related to bloggers' private lives. The particular FLOSS reciprocity idea was thus featured, carrying out a library-of-people-influenced presentation of self. [50]

This analysis shows how a cyberethnographic approach crosses dichotomies and assumptions. Starting interactionally from a situated evaluation, we can ask questions like: how does a software license take part in a community of developers? This question is relevant not only as an example of the role played by non-human actors like licenses in FLOSS world. Debates about the license itself occurred on the project main mailing list, the first for over two months and then others followed, becoming something of a constant element in the group life. Our cyborgic approach to participant observation, the main ethnographic technique, lead us to focus attention on how non-human elements are active in the project. A document analysis about the origins of the license inside the project, as well as a grounded theory-based analysis about the mailing list debate, led us to underline the role of mediator taken by the license itself inside the developers' community. Inside that role we find the context of the FLOSS social world and software development in general. It's centrality to the organization of the project itself and the participant's behaviors (TELI & DE PAOLI, 2006), is shown in the following quotation:

> "No, *some* users and developers want their software to be GPL. And just as those users will be turned off by OpenSolaris because it is not, there will be many that will be turned off if it becomes GPL. [...] It would make it more attractive to those developers that actually care about the license, or are GPL zealots. The majority of users don't care what license a program is under. They just like good software." (SW, osol-discuss, discussion dated 20 August, 2005) [51]

Who are the participants? How do they define themselves? What is their positioning inside FLOSS social world? What kind of aims and interests do they have inside this world? What are the users' interests? The elements which are the answers to these questions are the main connections between cyborgs, their performances themselves defining the community. Thanks to the use of participant observation and document analysis, ethnography can go across different elements without a priori assumptions, showing FLOSS social world construction happening inside developers' daily practices. [52]

However, because one can't presume a solution before entering the field (e.g., they are a library, or they are people), cyborgic ethnographers face ethical problems related to use of mailing list postings. The conversation about field access reported above is relevant here. Mailing lists are public; one can access them freely. But how should we face the alienation problem identified shown by BAKARDJIEVA and FEENBERG (2001)? BERRY (2004) suggest that open source software developers permit the use of their main artifact (the software) under the conditions of the license they choose, so researchers can approach FLOSS community artifacts in the same way. That is, approach the mailing lists as if they were subjected to the same software copyright system, inspired by reciprocity. This is why TELI chose to publish texts about community on the web, and also to allow changes. This choice shows the power of the library-of-people metaphor: the understanding of the group studied determines the boundaries of mailing lists and not the application of a black-boxed solution. It is clearly a cyborg-inspired practice, boundaries between the group participants, goals, and actions, being followed in their deployment. The group is performed during the inquiry, it doesn't remain the same, and the relation between the researcher and the group is constructed so as to allow the group activities (the copyright practices, for example) to act relationally on research practice.

Maurizio and OpenSolaris

An open source research with an open source community

Yes, it's me, Maurizio Teli.

I was born in the 1977 in Novara, a one hundred thousand inhabitants city in the north-west of Italy, between Milan and Turin. After some years between schools and university, living in Oleggio, a small town near Novara, I had my first degree in Political Sciences at the University of Milan, with a thesis about the relationship between supermarket workers and customers.

During the writing-thesis period, I came in contact with the FLOSS world, in particular with the web browser Mozilla Suite and the OpenOffice.org suite.

How is freedom working?

(My temporary research title)

Introduction

The Free/Libre and Open Source Software (FLOSS) has a strong political view, as shown by the essays by Richarc M. Stallman and Eric S. Raymond, strictly connected with the idea of freedom. In the academic literature this characteristic has been considered mainly in order to evaluate the motivations moving developers contributing to FLOSS projects, the consequences for the development organizational model, or for the business opportunities related. As far as I know, no one make the enactment of the concept of freedom the centre of a research. This is my aim: understanding how the idea of freedom is performed by the community members and how it plays a role in the development process and in the community life.

The field: OpenSolaris

Every ethnographer has to choose a field for her work. A particular part of the world, which is considered useful for the construction of an answer to the research question. Why did I choose

Figure 1: The researcher's presentation page [53]

7.2 Cyberethnography part two: Actualization and virtualization of virtual teams

The next case goes deeper in the boundary work involved in online groups, describing briefly the boundaries constructed by a (mainly) computer mediated team organizing a European work and organizational psychology association's activities regarding entrepreneurial issues. This group worked via e-mail and web-sites mostly, but sometimes face-to-face meetings happened, either as private meetings or as public events (conferences mainly). [54]

PISANU's methodological choice was to follow this group's interactions not only online but also off-line, tracing trajectories (both actualizing and virtualizing) of "being a group" processes. Unfortunately, he was not able to follow the group from the start but only from six months after their first "in presence meeting," which was their first meeting of any sort. [55]

The virtualization process we focus on here is related to a particularly strategic moment for them, their first public appearance during an international conference.

They were presenting their group to a wide scientific and professional community, finding a "place" of their own in it. [56]

Following the LEVY's actualization-virtualization schema, we analyze them as starting with a virtualization process, one in which the members summarize online what they have done and experienced during their third in presence meeting, while at the same time using it to plan future activities and engagements. The following quotation is from an extensive minute they collaboratively wrote and shared online immediately after an off-line meeting.

> 2nd INSPHERE Meeting, Verona, 15 April 2006
>
> Members present: Adalgisa, Kasia, Dominika, Paco, Juan Antonio, Francesca, Marjan, Martin, Evelina
>
> […]
>
> **ICAP Conference 16-21 July 06**
>
> **Marketing for INSPHERE**
>
> Use logo on presentations. According Adalgisa, the logo is in development and should be sent to all members 3 weeks prior to conference.
>
> Promote website. Add link to all slides.
>
> Create INSPHERE intro slide for the presentations and the poster session. (JA)
>
> Plan an INSPHERE cocktail party (funding may come from left over network funding from Erasmus) (Dominika & Kasia)
>
> Create INSPHERE business cards (Kasia and Adalgisa will work together on this)
>
> Send one page newsletter for our senior advisors (Ute).
>
> **INSPHERE Meeting in Athens**
>
> Dominika will start to plan the meeting and send everyone information as soon as the program is available.
>
> Tasks: send Dominika travel information (airline, arrival and departure date and times), hotel information, mobile number. [57]

This minute is not only a collective reminder of actual and future tasks for team members, but it is also a source of new concerns for them. They are not using the electronic messages as merely a sort of "organizational memory" (BROWN & LIGHTFOOT, 2002); but they are starting, or better continuing, a process of "leaving from here." With this document, they are no longer in real places, not in Verona (the past) nor in Athens (the future). They start, or continue, what LEVY calls an "exodus" (LEVY, 1998), adding new problems and controversies inside the text. "It is very hard to locate the virtual enterprise with some accuracy" (LEVI, 1998, p.9). Paradoxically, a document created to bound uncertainties becomes another source of unexpected information, an object continuously negotiated and a work in progress. We can see the outcomes of the continuing translation in the following quotation, in which one of the members asks for a translation of the minute from e-mail to website managing.

> Original Message
>
> From: "Evelina"
>
> Sent: Monday, April 24, 2006 7:15 AM
>
> Subject: Re: Verona minutes
>
> hi Ute,
>
> thanks for your reply concerning the topics we had discussed during the meeting. i have it planned into my schedule to work through the minutes today (it's a holiday today in zürich), so i will keep in mind your feedback about unclarity and make proper accommodations. then i will send it to martin, who will send pass it on for feedback. maybe we will place it directly on the website so that each person can edit the latest version??? i was experimenting yesterday with it and managed to publish something. i still need to learn how to import our diagrams. [58]

An explicit request for "being more clear" in the collective text produces an "e-mail to website" drift, the continuing exodus of the object. It is not just to sustain more organized work on the minute in the website (in which the ultimate version is always the ultimate, unlike the uncertainties of e-mail interactions), but it is as such an institutionalization of the object. Being a part of the community mirror—that is, the website—the minute starts (apparently) to stabilize or, better yet, to actualize.

> Original Message
>
> From: "Evelina"
>
> Sent: Wednesday, April 26, 2006 7:06 PM
>
> Subject: Re: Verona minutes
>
> hi Martin,
>
> thanks for placing the minutes online. it probably took some time, but well worth it since it looks really great. the website is going to help us so much!!! [59]

It is a blunder. The object seems to be very hard to place. The virtualization poses more problems than team members have expected. So they decided to come back to the usual way of managing these issues, the e-mail.

> Original Message
>
> From: "Ute"
>
> Sent: Thursday, May 04, 2006 7:10 PM
>
> Subject: update Verona minutes
>
> Dear all,
>
> I tried to update the meeting minutes from Verona via the INSPHERE webpage. Unfortunately, it cuts off the documents half way through. (Basically everything that comes after the first model should be displayed.) I gave up after various attempts to fix the problem. (It looks like the document is simply too long to be displayed properly.) Thus, I copied it into a word file and attached it. [60]

It is hard to display the whole process here, but the issue most related to our aims concerns the ways to follow these paths with an ethnographic approach. Unfortunately, it has been impossible for us to observe their attempts to upload the minute file on the website. We can nonetheless say that, in the end, the minute found its actualization off-line. This happened three months later, during the conference and after a long period of negotiations, new problems, concerns, conflicts, and misunderstandings. So, it started its life as a simple electronic document aimed to help team people remember what they had done previously and what they were going to do next. It then became a matter of sense-making inside the group. Finally it found a new status in a "real" place, as we can see in the pictures below, from the "real meeting" they had during the Athens conference.

Figure 2: Actualizing the virtual to create new concerns [61]

From a methodological point of view, the translation between a "virtual" object, created following "real" interactions and aims, and subsequently modified because of other "virtual" ones, and re-conceptualized again in a "real" way, still carries a precise message. Moreover, the messages seem to epitomize one of WOOLGAR's rules of virtuality: "the more virtual the more real" (WOOLGAR, 2002). In this way, it is possible to draw up a new representation of computer mediated research. It is a strange representation, in that it does not consider only the online social features but instead includes the multiple "rhizomes" (DELEUZE & GUATTARI, 1987) created by members' interactions. Every face of a team's life, mediated and unmediated, is completely linked. [62]

8. Conclusions

From our point of view, a cyborg is not the stereotyped vision of a human with some technological attachments all over his or her body. There are no hi-tech robots in our case studies, but ordinary people engaged in daily life activities. [63]

What we have tried to show is how new theoretical and empirical developments in social sciences could help web-based researchers use ethnographic studies in cyberspace. Paradoxically, our approach is a bit counter intuitive: we don't suggest taking a point of view on the question, is it "virtual" or is it "real," before starting the inquiry. We wish to avoid a concept that is too connected with *a priori*

assumptions. We have accomplished this by showing how ethnographic research is itself in search of new labels, in all its different fields and disciplines, starting from anthropology, the "birthplace" of ethnography. We then argued that the virtual lexicon, because of its presumptions of irreality and disembodiment, is not an apt approach either. The cyborg lexicon, undermining classic dichotomies and translating new aptitudes in research, is more apt. We then drew on the work of HARAWAY, HAKKEN, HINE, WOOLGAR, and LEVY to redefine our ways of seeing complex systems, as computer mediated groups clearly seem to be. They suggest, most of all, to look outside virtual places and to complete trajectories between on and off-line. [64]

From these theoretical perspectives, we have applied a cyborg or cyber approach to our PhD thesis research, especially in the problematization stage. Rather than presuming the settings (that is, as we stated initially in reference to the perspective on virtual groups of GODAR & FERRIS (2004)), we presumed no parameters of time, space, and egalitarian mood among members. Our main concern is not about structures, even about processes; it is about practices and the whole network of actors (again, humans and non-humans) engaged in their construction. Recognizing that these practices are both texts and humans, we argued in favor of the library-of-people metaphor. To cite GRINT & WOOLGAR (1997), we want to look at "the machine at work." We asked, how do the participants negotiate what it means to be part of the machine? We found that sometimes their "machining" means rejecting the machine itself, overcoming technological mediation and entering into only apparently unmediated environments. As a result, the cyborgs are seen as both mediated and unmediated, unfinished and finished. They are, identities and artifacts, reconstructing themselves while being reconstructed through discourse, flows in the technology mediated world. These are the fundamental conditions with which ethnography has to deal. [65]

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