Título

Learning about Social Psychology by Researching on Computer Mediated Communication

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Autor

Paulo Xavier

Rosa Cabecinhas

Departamento de Ciências da Comunicação – Instituto de Ciências Sociais – Universidade do Minho, Campus Gualtar, 4710 BRAGA, PORTUGAL

Abstract

The teaching of social psychology for Social Communication students can be an excellent opportunity to engage them in field research work. This is a way of providing the knowledge and the experience about how investigation is made in social sciences as well as developing the interest and the competencies for the scientific inquiry.

The domain of Computer Mediated Communication (CMC) can be the stage for the study of diverse social cognitive phenomena like social representations, social categorisation or prejudice and discrimination.

Data generated through interactions on CMC environments come in textual and digitised form, making unnecessary any kind transcription and helping significantly on the making of simple but interesting research projects within a limited time.

Social research in CMC environments can also take multiple forms in method, combining quantitative and qualitative approaches.

These qualities make CMC a powerful pedagogical tool for those that teach on social sciences. The present communication is about a set of small research projects developed under the scope of the Social Psychology issue on a Social Communication course. Students were asked to formulate a social psychological question considering the way people interact in text based CMC environments like IRC or ICQ. The questions were diverse and so were the research designs proposed. This diversity enriched the

pedagogical process, making possible for them to get in contact with a wide range of constructs, several theoretical paradigms as well as the integrated and articulated use of multiple research methods and data analysis techniques. This project also engaged the participants on the passionate discussion of ethical questions on the study of human behaviour.

Our goal is not to present the empirical results of the students' projects. Most of those projects faced so many constraints and difficulties that hardly could be considered conclusive. For us, this experience represents a challenging and innovative pedagogical practice and in scientific terms it constitutes a case study about the ways CMC can be used for the for the learning of Social Psychology concepts and methods and for the debate on the research in Social Sciences.

The problem we have to face every school year

One of the most challenging assignments involved on the teaching of social sciences is to provide students with the awareness and the skills about methodology of research. Any professional on the social area has, in some degree, to make research about the object of her/his intervention. Social practice requires the gathering of information, the reconstruction of some kind of social reality that will frame and orient the decisions and interventions and the continuous or final assessment of results. This is applicable to the specific case of Social Communication Professionals like those working on journalism, publicity, public relations or audio-visual mass media[1].

The authors of this paper are the lecturers of a Social Psychology issue that is integrated on the first year of a Sociology grade and on the second year of a Social Communication grade.

Year after year we look for ways of improving the students' knowledge and training on research practices. We believe that this stress on methodological issues is important not only for the understanding of the dynamics of science that underlies the corps of knowledge that are academically transmitted but also creates the awareness for the needs of accuracy and ethics of researching and intervening on Human subjects and social groups.

This paper presents our most recent attempt to get our students into social research work.

We wanted to let them go through the experience of empirical research and not only of literature reviews. With that goal in mind we had to consider some constraints.

Lack of the resources – engaging approximately 230 students on traditional laboratory or field work requires structures and resources that we surely don't have.

Lack of time – empirical research is always very demanding on time and effort. Research design, data collection, data processing and taking insight from results are tasks too demanding and time consuming to be done within a scholar year and to be compatible with the assignments that students have to do for other issues.

Lack of experience - joining the previous limitations we have to consider the inexperience of our students and their lack of scientific background. Although we put a

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[1] These are the four areas of specialisation of the 5 year grade course of Social Communication on the Universidade do Minho.

constant pressure on their quest for accuracy we are aware that this kind of work is the starting point of a learning process about science making.

Quality requirements – on social research quality is a matter of responsibility not only towards the scientific community but also towards the individuals and groups being studied. The more our research interfere on the life of its subjects, the more obliged we are to make sure that the research brings some kind of benefit to them. Stimulate students to do empirical research on social phenomena is not synonym of encouraging them to interfere in peoples' lives for sterile voyeuristic purposes. It's important that the students understand the responsibility and ethical issues involved on social research, so we don't think it would be a good practice to push them for such a job, knowing in advance that they don't have the conditions to do it properly.

On previous years we asked students to limit themselves to the research design, but that frequently resulted in a frustrating experience for them since they got highly interested on putting their plans into practice. In some cases it was possible to make it, but those cases usually consisted on very simple surveys about questions that mostly fell in the Sociology area and not on Social Psychology.

How we tried to solve the problem this year

One of the authors of this paper is interested on social cognitive phenomena that occur while using computers. The interest began with the study of Human-Computer Interaction but more recently expanded to the field of Computer-Mediated Communication (CMC).

The communication processes taking place over the internet have been getting the interest of a growing number of psychologists and social psychologists (Suler, 1996; Turkle, 1995; Voiskounsky, 1997) as well as other social scientists. The comparison between electronic and face-to-face communication (Hiltz & Turoff, 1994; Adrianson & Hjelmquist, 1999; Barkhi, Jacob & Pirkul, 1999; Ocker & Yaverbaum, 1999; Ziegler, Diehl & Zijlstra, 2000), the study of the way interpersonal relationships are established and evolve on the net (Parks, 1996; Rafaeli & Sudweeks, 1997; Utz, 2000), the study of structure and power issues in on-line group dynamics (Danet, Ruedenberg-Wright & Rosenbaum-Tamari, 1997; Denzin, 1999; Garton, Haythornwaite & Wellman, 1999; Herring, 1994; Puterman, 1994; Rodino, 1997; Savicki, Lingenfelter & Kelley, 1996)

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and also the epistemological and methodological issues that emerge from the study of social phenomena on the net (Garton, Haythornwaite, & Wellman, 1999; Jones, 1999; Kendall, 1999; Newhagen & Rafaeli, 1996; Paccagnella, 1997; Smith, 1997; Sharf, 1999; Sudweeks & Simoff, 1999; Witmer, Colman & Katzman, 1999) are some of the most explored and discussed areas that emerge from the social dimension of cyberspace. Internet is playing a more and more important role in our society and cyberspace is the stage where more and more social activity takes place. This means that CMC gets a very significant place among the ways people interact nowadays and the teaching of Social Psychology must reflect it.

Several authors refer the aspects where the study of on-line human behaviour is easier than the study of off-line behaviour (also referred as Real Life[2]). Sharf (1999, p. 244) points that electronic messages can be easily collected, stored and recalled at any time. Internet discourse is viewed as a naturalistic interpersonal communication suitable for several analytic and ethnomethodological approaches. Naturalistic non-obtrusive observation of on-line communication is also described as accessible and inexpensive by Paccagnella (1997). Denzin (1999, p. 114) also refers how easily screen interactions are transformed into printed text that are actual transcriptions of on-screen text. Garton, Haythornwaite & Wellman (1999, p. 92) underline that issues of accuracy and reliability are replaced with issues of data management, interpretation and privacy when data are gathered electronically.

Nevertheless, CMC seems to be unequally suitable for other kinds of research. There is some discussion about the making of surveys through the internet (email or web based) (Witmer, Colman & Katzman, 1999, p. 147; Smith, 1997; Paccagnella, 1997) and about external validity and replicability of experimental CMC studies (Sudweeks & Simoff, 1999, p. 38; Kendall, 1999, pp. 70-71; Paccagnella, 1997).

We considered those advantages and disadvantages and we concluded that CMC environments would be a good source of data about social interaction to be researched under the scope of the Social Psychology issue.

The goal was to provide opportunity for students to get involved on empirical research so they could:

 a) formulate a scientific problem on Social Psychology
 b) formulate testable hypothesis

c) operationalize variables and design a research procedures

d) gathering the data, process them and interpret them

e) reflect about methodological and ethical issues on social research

We had no predetermined preference on the kind of research to be made, as long as it focused on psycho-social phenomena. The validity (and other) problems that could eventually result from the fact of using CMC processes would be useful for discussion, so they were considered a pedagogical benefit. The main constraints to our goal were solved:

a) we had a quick and affordable way for students to gather data about social interaction (there are computer labs with internet access available for the students)

b) data could be collected in a great variety of ways, offering great methodological flexibility and inviting for creative research designs

c) data wouldn't need any kind of transcription (which is an extremely labour consuming task, not suitable to out time constraints)

d) some CMC environments offered us public and natural on-line "talks" that could be studied in a non-obtrusive way, thus raising much less ethical problems than RL (Real Life) research.

A "squadron" of students exploring cyberspace

Synchronous on-line conference environments like MUDs and IRC channels or ICQ (http://www.icq.com) are only textual but very interactive. MUDs and IRC channels can play the role of public rooms where a variable number of participants meet. The motives for participating on those rooms are very diverse as well as what happens there. Some of those spaces work as virtual classrooms, others work like small clubs where friends meet to chat, others are dedicated to the discussion of specific topics. There are rooms that are the stages of engaging role-playing games, rooms that congregate people willing to make cybersex and some generalist IRC rooms reach several hundreds of simultaneous participants at a given time. Those rooms are the space for a public "talk"

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[2] We neither intend to discuss here the epistemological implications of this concept nor to imply that behaviour taken while using the internet is not part of an individual's real life. Many literature about

but also allow users to establish person-to-person private messaging. ICQ is primarily a person-to-person private means of communication but also allows to join several participants in a shared chat.

Because of user interface differences IRC and ICQ are much easier to use than MUDs and many students didn't had any previous contact with CMC applications. So, we proposed students to make their research on IRC public channels or to contact ICQ users for interviewing.

We started the school year with an overview of the main topics to be developed under the issue of Social Psychology. On the practical classes we discussed and exercised basic methodological steps like formulating research problems and hypothesis. Then we presented the idea we had in mind. We talked about CMC, about how the phenomena studied by Social Psychology also occur on-line and about the pertinence of making research on that area. We discussed the pedagogical benefits of conducting a small research project through all it's stages and how CMC environments would help to make it feasible. To make clear the importance of such a project on their learning we stressed that this would be an assignment which result would mean 50% of the final mark on the issue (same weight as the theoretical exam).

The following steps were:

    a) the constitution of working groups,

    b) to explain where to find literature about specific Social Psychology topics and where to find literature about CMC,

    c) have a general discussion about the IRC channels and what usually happen there,

    d) to formulate questions of research and select them based on their pertinence for Social Psychology as well as their testability,

    e) to formulate hypothesis and justify them,

    f) to design a feasible research plan,

    g) processing and interpreting data,

    h) to present the final report.

Working groups were free to chose the topic and the methods, nevertheless they had our constant support and supervision.

CMC uses this expression to represent everything that happens off-line, i.e. out of the cyberspace.

During a few months, Portuguese cyberspace was invaded by novice researchers on their quest to learn more about "On-line Social Psychology".

What they chose to research and how

One of the initial obstacles faced was the testability of the questions that most of the groups placed first. Many groups wanted to test assumptions like:

a) relation between gender (or other social-demographic features) and specific kinds of on-line behaviour,

b) relation between the predisposition to use CMC environments and certain personality traits.

Soon we showed our researchers that it would be impossible to rely on any kind of information about users' "Real Life" based on their on-line self-presentations. Unless they could find a way of confirming those data beyond doubt, they should take all self-descriptions as potentially deceiving. The reduced number of communication channels gives users the opportunity for anonymity and building of alternate identities (Turkle, 1995; Suler, 1996) and the entertaining features of IRC channels invite users to playful behaviour and to perform the most diverse roles (Danet, Ruedenberg-Wright & Rosenbaum-Tamari, 1997). Even on ICQ, where users are invited to give personal information about their identity, people omit or give fake information.

Once confronted with this constraint groups formulated much realistic problems. Here we summarise the topics they chose.

Type 1 problems: Measuring the effect of different dimensions of self-presentation on IRC/ICQ on social categorisation and schema activation. The dimensions explored were:

a) description of physical traits

b) description of psychological traits

c) description of social status

d) nickname

e) use of emoticons

f) ostensive anonymity

g) role-playing

This kind of problem resulted in research designs that always involved participant observation. In many cases students had to perform carefully pre-established roles in order to manipulate the independent variable. As a matter of fact, many of these studies took the form of quasi-experimental designs where different reactions were measured. For example, one of the groups wanted to test the hypothesis that widow and divorced women receive much more attention than married women on generalist chat rooms like *#Portugal*. They played three characters that only differed on the *marital status* dimension. They measured the number of conversational messages received and the time dedicated by the interlocutors to each character after the announcement of the marital status. Those quantitative measures had to be also interpreted on the context of each specific conversation, since many conversations were interrupted by external or technical factors. Their hypothesis was based on theoretical assumptions of causal attribution. Interestingly, the married character was the one to receive more attention, so the initial hypothesis wasn't supported by data. The group got very surprised, but from our perspective it was an exceptional opportunity for them to enrich their discussion about the results.

Type 2 Problems: Identifying the existence of prejudice and discrimination over specific stereotyped groups on IRC channels. The groups focused were:

a) Transsexual
b) Racial/Black
c) AIDS patient
d) Handicapped Person
e) Drug Addicted
f) Sex/Pornography related professional

The groups that formulated this kind of problem also chose research designs that involved mainly participant observation. They performed characters that belonged explicitly to the stereotyped group as well as characters with positive or negative attitudes towards the target group. Responses gathered were diverse, from quantitative measures of time of conversation and number of messages received to qualitative

interpretations of interlocutors' discourse as a way of evaluating attitudes or discriminatory behaviour.

One of the groups chose to study manifestations of inter-group conflict between adepts of different football teams entering team specific chat rooms and wearing "the wrong shirt".

Type 3 Problems: Describing how IRC users engage into different interpersonal relationships as well as their expressed predisposition for the establishment of different kinds of interpersonal relationships through the net. Relationships explored were:

a) friendship

b) seduction and play

c) romance

d) cybersex

This kind of problem resulted on research strategies different from the previous ones mentioned. Groups chose to make on-line and off-line interviews and questionnaires. One of the groups also analysed discourse used on several cybersex interactions that they found publicly available on the web.

Type 4 Problems: Describing specific social representations as they appear on IRC conversations.

a) Death

b) IRC users (motivators, addiction)

c) Shyness

d) Creativity

The groups that chose to study social representations used combined methods, like surveys, interviews (on-line and/or off-line) and role-playing. Contents of discourse and interaction were analysed for characterisation of those representations.

Students' feedback about the experience

During the whole process we encouraged students to report every step, every surprise, every difficulty. So, their final reports gave us useful feedback about the experience.

One of the main complaints expressed is the long time they spent without understanding exactly what they were meant to do. At start we got surprised with this critic to the way we introduced the aims for this work. Then we recalled the effective progresses that students made throughout the year and we realised that the first big qualitative leap on their projects happened at the beginning of the second semester, which means after the first set of exams. We realised very clearly then that they didn't read any of the suggested literature for the project. They only made their first readings at the end of the first semester with the purpose of getting prepared for the exams. Naturally, they couldn't understand what was expected from them because they lacked an integrative perspective about the phenomena studied by Social Psychology and about how research is made on that discipline. To correct this and other problems we will present a few solutions to be discussed further on this text.

The second most generalised complaint is related to technical aspects. Although students have access to the internet through computer laboratories, that access was extremely constrained. First problem comes from the limited time of computer usage. Computer labs are open to all the students to be used for many purposes (from internet access, to text editing or statistical processing of data). Such a big number of users imposes strict management of usage time that result on the need to register with big advance, long waits and sometimes the interruption of data gathering sessions. This problem was amplified because students started collecting data in a period of intense labour for all the students on the campus.

Some students had to perform one or more characters. They had to act in a deceiving way toward subjects in order to get their spontaneous reactions to certain stimuli. Some of those students felt uncomfortable doing that. Most of the students that could make a final debriefing reports very good reaction from subjects. Although, many students couldn't make the debriefing. Some, because of sudden cut on the conversation, others because they couldn't find the courage to do it. These last are the ones that express more discomfort and the ones that question more the ethical implications and the legitimacy of this kind of procedures. This was one of the anticipated problems, so we suggested from the start to get subjects' email addresses (when possible) for further debriefing

after the data collection. Nevertheless, a significant number of students told that even when role-playing they didn't make anything particularly different of what they would do or usually do as users. They assert that all users assume that deceiving is a common behaviour at IRC rooms. Evidently not all the groups played similar kinds of roles. Those who played roles that evoked pity or sympathy from subjects were the ones to experiment feelings of guilt and those who expressed more concern for moral responsibility.

Due to inexperience, some students connected to the local IRC server, making their location knowledgeable. In several occasions they were physically identified by subjects that also were students on the Minho University and were using another computer on the very same lab. Also embarrassing were those situations in which the character was supposed to have a different location and subjects detected the true one.

A few students report that they were identified as "researchers" by some subjects. That happened because after a couple of weeks of intense data gathering and debriefing, there were several IRC users aware of what was going on and some could successfully identify common features among researchers.

Despite all the difficulties, students expressed very positively about the experience. Those that were familiar with chat rooms revealed great interest on studying in a systematic and accurate way phenomena they usually experience as participants. The students that had their first contact with CMC environments considered this initiative as an excellent opportunity and a very good way of getting in touch with this social reality. All students considered this assignment a very demanding and challenging one and some express positively about the feeling of responsibility they lived.

There were groups constituted of students experienced on IRC and groups of novice IRC users although most groups had mixed composition. We can't say that the degree of familiarity with CMC environments made a big difference on the final results. It was evident that inexperienced users had much more difficulty on formulating the initial questions and hypothesis. They had heard about it from friends but they never went through it before. On the other side, experienced users were much more fertile on ideas for research questions but they were also much more biased. Their questions reflected more their personal interrogations than pertinent social-psychological issues and they were much more resistant to find theoretical support for their hypothesis, mainly based on experience.

Our conclusions and plans for future experiences

We consider the overall experience as fairly positive. Many difficulties were found but they can't be attributed to drawbacks intrinsic to CMC research. Most problems were technical, logistic and of planning but, of course, they are part of our own learning process.

The data collection period started too late, colliding with the time of more intense labour and bigger computer occupation rate in the university labs. If data gathering could be anticipated a lot of problems would be avoided and students could also make a more efficient time management, dedicating more time to data analysis and interpretation as well as to the elaboration of the final report. A lot more could be done to improve data presentation but students didn't have much remaining time to invest on it.

As referred before, although we started working on this project since the beginning of the scholar year, we only had good questions and good hypothesis for test after approximately three months of discussion. Now we know that this delay was caused by the students' lack of readings on fundamental areas. By that time students tried to make us believe that they were reading the suggested literature when the fact is that they weren't. At the end of the project we asked them why they didn't follow our instructions and what could be done to prevent it. They told that by that time it was hard to realise the importance of those readings and also that they perceived the deadline for handing over the final reports as very distant. They agreed that we should have been much more directive and should not rely on their ability for efficient and responsible time management. This statement certainly sounds weird to people of other cultures, but it is easy to contextualize in Portuguese culture where living the present moment is often privileged over systematised planning. Although that's not the accepted rule and people live this tendency with a private feeling of guilt, the fact is that Portuguese end up working under the pressure of "the last minute" very often. Even though we got very surprised with this open and clear statement of lack of responsibility as well as the general agreement that they shouldn't be given so much autonomy. We necessarily got the message and now we are sure that next year we have to be much more directive and ask for progress reports at determined deadlines. By assigning specific tasks to the students we ensure that they will make the necessary readings in time and the whole project will evolve continuously at a regular speed. Then the data gathering will happen

much earlier (maybe two months earlier) and many of the logistic problems will be avoided.

After this experience we believe that we can easily negotiate a convenient timetable for the exclusive use of a computer laboratory. That way students will have much less restrictions on the time and resources for their preliminary investigations, pre-test of procedures and effective data collection. By doing that we also ensure that we can be present when they are on-line, helping them when they face the biggest difficulties.

We feel that despite the minor contrarieties we accomplished our goals. We successfully engaged students on Social Psychology field research. They discussed and learned about methodology and got in contact both with quantitative and qualitative approaches combining them to create adequate designs for specific purposes. The ethical questions raised are of major importance and will be never forgot. They surely learned a lot about Social Psychology and they got new conceptual tools to analyse CMC phenomena.

This project was always regarded as a research exercise. We never expected to produce conclusive results. Nevertheless we cannot say that we didn't learn from them. We learned about communication on computer constructed environments by participating on them, so we all are now more sensitive to the pertinent questions that can be made about it. We learned about methodology by testing research designs in the field. Many results suggest numerous new hypothesis. Many of the data already collected can be used for further analyses. We all learned and, most important, we feel encouraged to carry on this kind of project for the next year.

Acknowledgements

References

Adrianson, L. and Hjelmquist, E. (1999). Group processes in solving two problems: face-to-face and computer-mediated communication [On-line]. In *Behaviour and*

Information Technology, 18(3) (pp.179-198). Online Publication at http://www.taylorandfrancis.com/JNLS/bit.htm : Taylor & Francis.

Barkhi, R., Jacob, V. S. and Pirkul, H. (1999). An Experimental Analysis of Face to Face versus Computer Mediated Communication Channels. In *Group Decision and Negotiation*, 8, (pp. 325-347). Netherlands: Kluwer Academic Publishers.

Danet, B., Ruedenberg-Wright, L. and Rosenbaum-Tamari, Y. (1997, March). "HMMM...WHERE'S THAT SMOKE COMING FROM?": Writing, Play and Performance on Internet Relay Chat [On-line]. *Journal of Computer-Mediated Communication*, 2(4). Available: http://www.ascusc.org/jcmc/vol2/issue4/danet.html

Denzin, N.K. (1999). Cybertalk and the Method of Instances. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 107-125). Thousand Oaks, CA: Sage.

Garton, L., Haythornwaite, C. and Wellman, B. (1999). Studying On-Line Social Networks. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 75-105). Thousand Oaks, CA: Sage. Also available On-line: http://www.ascusc.org/jcmc/vol3/issue1/garton.html

Herring, S. (1994, June). Gender Differences in Computer-Mediated Communication: Bringing Familiar Baggage to the New Frontier [On-line]. Available: http://www.cpsr.org/cpsr/gender/herring.txt

Herring, S. (1999, June). Interactional Coherence in CMC [On-line]. *Journal of Computer-Mediated Communication*, 4(4). Available: http://www.ascusc.org/jcmc/vol4/issue4/herring.html

Hiltz, S.R. and Turoff, M. (1994). *The Network Nation: Human Communication via Computer* (Revised Edition). Cambridge, MA: The MIT Press.

Jones, S. (1999). Studying the Net: Intricacies and Issues. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 1-27). Thousand Oaks, CA: Sage.

Kendall, L. (1999).Recontextualizing "Cyberspace": Methodological Considerations for On-line Research. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 57-74). Thousand Oaks, CA: Sage.

Morris, M. and Ogan, C. (1996, March). The Internet as Mass Medium [On-line]. *Journal of Computer-Mediated Communication*, 1(4). Available: http://www.ascusc.org/jcmc/vol1/issue4/morris.html

Newhagen, J.E. and Rafaeli, S. (1996, March). Why Communication Researchers Should Study the Internet: A Dialogue [On-line]. *Journal of Computer-Mediated Communication, 1*(4). Available: http://www.ascusc.org/jcmc/vol1/issue4/rafaeli.html

Ocker, R. J. and Yaverbaum, G.J. (1999). Asynchronous Computer-mediated Communication versus Face-to-face Collaboration: Results on Student Learning, Quality and Satisfaction. In *Group Decision and Negotiation*, 8, (pp. 427-440). Netherlands: Kluwer Academic Publishers.

Paccagnella, L. (1997, June). Getting the Seats of Your Pants Dirty: Strategies for Ethnographic Research on Virtual Communities [On-line]. *Journal of Computer-Mediated Communication*, 3(1). Available: http://www.ascusc.org/jcmc/vol3/issue1/paccagnella.html

Parks, M.R. (1996, March). Making Friends in Cyberspace [On-line]. *Journal of Computer-Mediated Communication*, 1(4). Available: http://www.ascusc.org/jcmc/vol1/issue4/parks.html

Puterman, S. (1994, October). Language and Power on IRC [On-line]. Available: http://www.rucus.ru.ac.za/~simone/lingirc.html

Rafaeli, S. and Sudweeks, F. (1997, June). Networked Interactivity [On-line]. *Journal of Computer-Mediated Communication*, 2(4). Available: http://www.ascusc.org/jcmc/vol2/issue4/rafaeli.sudweeks.html

Rodino, M. (1997, December). Breaking out of Binaries: Reconceptualizing Gender and its Relationship to Language in Computer-Mediated Communication [On-line]. *Journal of Computer-Mediated Communication*, 3(3). Available: http://www.ascusc.org/jcmc/vol3/issue3/rodino.html

Savicki, V., Lingenfelter, D. and Kelley, M. (1996, December). Gender Language Style and Group Composition in Internet Discussion Groups [On-line]. *Journal of Computer-Mediated Communication*, 2(3). Available: http://www.ascusc.org/jcmc/vol2/issue3/savicki.html

Smith, C.B. (1997, June). Casting the Net: Surveying an Internet Population [On-line]. *Journal of Computer-Mediated Communication*, 3(1). Available: http://www.ascusc.org/jcmc/vol3/issue1/smith.html

Sharf, B.F. (1999). Beyond Netiquette: The Ethics of Doing Naturalistic Discourse Research on the Internet. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 243-256). Thousand Oaks, CA: Sage.

Sudweeks, F. and Simoff, S.J. (1999).Complementary Explorative Data Analysis: The Reconciliation of Quantitative and Qualitative Principles. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 29-55). Thousand Oaks, CA: Sage.

Suler, J. (1996, January). *The Psychology of Cyberspace* [On-line]. Available: http://www.rider.edu/users/suler/psycyber/psycyber.html

Turkle, S. (1995). *Life on the Screen: Identity on the Age of the Internet*. New York: Simon & Schuster.

Utz, S. (2000). Social Information Processing in MUDs : The Development of Friendships in Virtual Worlds [On-line]. *Journal of Online Behavior*, 1(1). Available: http://www.behavior.net/JOB/v1n1/utz.html

Voiskounsky, A.E. (1997, March). Telelogue Conversations [On-line]. *Journal of Computer-Mediated Communication*, 2(4). Available: http://www.ascusc.org/jcmc/vol2/issue4/voiskounsky1.html

Witmer, D.F., Colman, R.W. and Katzman, S.L. (1999). From Paper-and-Pencil to Screen-and-Keyboard: Toward a Methodology for Survey Research on the Internet. In S. Jones (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net* (pp. 145-161). Thousand Oaks, CA: Sage.

Witmer, D.F. and Katzman, S.L. (1997, March). On-Line Smiles: Does Gender Make a Difference in the Use of Graphic Accents? [On-line]. *Journal of Computer-Mediated Communication*, 2(4). Available: http://www.ascusc.org/jcmc/vol2/issue4/witmer1.html

Ziegler, R., Diehl, M. and Zijlstra, G. (2000). Idea Production in Nominal and Virtual Groups: Does Computer-Mediated Communication Improve Group Brainstorming?. In *Group Processes and Intergroup Relations*, 3(2), (pp. 141-158). London: Sage.