

Creating and Maintaining Obligations with Emerging Technologies: An Empirical Study of Mediated and Face-to-Face Communication

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This paper describes a study that was undertaken with a small sample of staff at the London School of Economics and Political Science in order to consider the kinds of communication that are performed throughout the School and to investigate how the obligation established between two or more parties is influenced when communication is mediated as opposed to being face-to-face.

By addressing current literature on media selection and by applying the validity claims of Habermas to the concept of speech acts in communication, this study indicates that electronic communication does incite a sense of obligation between speaker and hearer that is lower than that of face-to-face interaction, but stronger than that of traditional written media. In the new 'virtual organisation' the importance of the creation of obligation is manifest if the traditional social infrastructure of trust is to be maintained.

Keywords: Obligation, mediation, media selection

1. Introduction

Human communication has always been central to organisational action and today's electronic methods of communicating such as multimedia systems and the information superhighway are dramatically influencing the development of this communication. As Yates and Orlikowski (1992) note "(t)hese pressures are giving rise to . . . poorly understood changes in what, how, when, why, and with what effect organisational communication occurs" (p. 299). But despite the lack of understanding surrounding its consequences, electronic communication is rapidly increasing; by 1994 there were an estimated 20

to 30 million electronic mail addresses worldwide (Negroponte 1995) and it is currently estimated that up to 50 million people are using the internet.

One aspect of research seemingly ignored on the role of computer-mediated communication in the changing organisation is the social effects of this technology on interactions and relationships. Introna and Whitley (1996) consider one such effect, namely the sense of obligation to respond to various messages, and propose that obligations are weaker when interactions take place electronically than when they are undertaken face-to-face. They suggest that mediation may have the effect of 'transforming' communication from its in the worldness to a more general abstract form. When communicating face-to-face we are dealing with specific historical individuals, whereas mediated communication involves speaking to a 'someone' and this abstraction affects the obligation that we have to our communicative partners.

Their paper explores this type of transformation, to discover the 'stuff' that makes obligations emerge and to determine if there is something inherent in mediated communication that changes the dynamics for obligations to come into existence, which clearly has implications for the wider development and use of multimedia computer-based systems.

The analytical approach to this problem proposed by Introna and Whitley (1996) draws on

speech act theory and, in particular, the work of Jürgen Habermas (Habermas 1987). They state that when communication is no longer conducted in a face-to-face context, Habermas's four validity claims that are assumed by speaker and hearer in performing speech acts (Austin 1962), can no longer be vindicated and therefore the obligation is not (as strongly) created. Thus they suggest that an uncomprehensible e-mail message sent to a large number of people will generate a lower sense of obligation than a similar request issued face-to-face to one person.

Obviously, the hypothesis that the formation of obligation is affected purely by the form of communication and choice of communication media is overly deterministic. Consequently, this paper describes a study of obligations which explores the factors that are assumed to relate to the establishment of obligation. These factors were investigated in a series of semi-structured interviews with various members of staff at the London School of Economics and Political Science (LSE).

The results indicate that it is not simply the difference between face-to-face and electronically mediated communication that needs to be analysed but also the various attributes of the different media: synchronous versus asynchronous, oral versus written and face-to-face versus non face-to-face. An increase in the use of computer-mediated communication implies that communication previously conducted synchronously (via the telephone) is now being conducted asynchronously (via e-mail), and thus oral interaction is frequently replaced by written communication. The advent of the telephone previously led to an increase in synchronous communication as oral communication over long distance became possible. However, this situation now appears to have been reversed as electronic mail is becoming increasingly used in place of the telephone, and the development of voice-mail indicates that the telephone is no longer simply a tool for communicating synchronously. The subsequent effects of this shift on the maintenance of obligation in the newly established electronic world is an issue of great importance if the traditional role of obligation and, therefore, trust is to be preserved in the infrastructure of organisations.

The study was undertaken during the summer of 1996 and, as result, has a number of differences

to many existing studies. In particular, as is described below, all members of the school have access to a desktop personal computer (IBM or Macintosh) and an e-mail package (cc:Mail) which is integrated across hardware platforms. cc:Mail is available for a number of interfaces, and within the LSE it is used under Windows, DOS and the Macintosh environment. Further, all staff members are able to attend training courses on the electronic mail package and there is therefore a 'critical' mass of active e-mail users within the School. Indeed, all members of the School's central administration are now regular e-mail users. Such widespread adoption of a relatively easy-to-use e-mail package is in contrast to many earlier studies where the electronic mail package was often difficult to use or the coverage of e-mail usage was limited.

The next section introduces various theories of communication and philosophies of language which helped sensitize the research, followed by a similar section summarising the key studies in areas of mediated communication. The following section describes the basis of the study before discussing the various results that were found. The paper finishes with a discussion of the implications of the research presented within the paper.

2. Theories of Communication and Philosophies of Language

Defining the concept of communication is relatively simple, but explaining the actual process of communication has proved to be more complex. Many models have been developed to facilitate explanation, one of the earliest being that of the mathematical theory of Shannon and Weaver (1949), but later theories shun this as being too simplistic as communication is not a one way street but a shared social system (Deaux and Wrightman 1988) (Collins 1990). For communication to be effective, participants must share a common 'Lifeworld' (Habermas 1987) otherwise communication will be meaningless. Habermas uses the concept of 'Lifeworld' to mean the background and context against which the utterance is made, and it is the notion that electronic communication media now permit people from different lifeworlds to communicate that lead Introna and Whitley

(1996) to suggest that obligation is weaker in the electronic world.

Speech Act theory (Austin 1962) states that when somebody issues an utterance they are actually performing an act, i.e. it is not just idle language describing something, it will actually cause something to happen. By promising, we are not just making a hollow statement but are actually performing the act of promising. Habermas (1987) states that the use of language is oriented towards reaching a shared understanding and that, in the public space, such language requires the exchange of criticisable validity claims (Brand 1990). Consequently, it can be illustrated that a lower sense of obligation occurs when the validity claims of an utterance are not met and a shared understanding is not reached. Habermas proposes four validity claims that refer to three worlds (the objective, the social and the subjective) and states that the speaker assumes all the claims when performing the speech act:

- *comprehensibility* the request is understandable by both speaker and hearer.
- *truth* the request concerns a true situation (the sharing of knowledge of the objective world).
- *sincerity* the request made is an honest one (the establishment of trust in the subjective world).
- *normative* the request is socially acceptable (the social lifeworld).

In mediated communication the validation of these claims is much harder to ensure. With face-to-face communication, or even telephone, there are additional cues (visual and oral) and immediate feedback that can clarify and verify the meaning of the utterance according to the claims. Electronic media are widely assumed not to be as rich and the ways of meeting the claims are not as clear and this may therefore affect the choice of media. In order to understand this perception about electronic media the next section examines the most important research to date.

3. Theories of Mediated Communication

Computer-mediated communication or electronic communication refers to person-to-person

communication over computer networks (Pickering and King 1995). Computer mediated communication began, in primitive form, in the 1960s (Hiltz and Turoff 1993 [1978]) and has been steadily employed in an organisational context since the early 1970s (Rice 1987). It has developed through the convergence of computer and telecommunication technology and now includes electronic mail, voice-mail, intra organisational video, and audio text, see D'Ambra (1995).

Although many of the theories surrounding the application of computer-mediated communication media are associated with media choice (e.g. (Caldwell, et al. 1995) (Walther 1995)), a full range of topics has been addressed in the literature:

- Media choice (Trevino, et al. 1987) (Daft, et al. 1987) (Caldwell, et al. 1995) (Haerem and Sgholt 1995) incorporating theories of social presence (Short, et al. 1976); information richness / media richness (Daft and Lengel 1984) and information processing (Daft and Lengel 1986) and social information processing / social influence (Fulk, et al. 1990).
- Consequences of media choice on group communication and decision making (Kiesler, et al. 1984) (Hiltz, et al. 1986) (Siegel, et al. 1986)
- The impacts on organisational structure (Sproull and Kiesler 1986) (Hinds and Kiesler 1995)
- More generally, the potential costs and benefits in terms of organisational efficiency and effectiveness (Sproull and Kiesler 1991) (Hiltz and Turoff 1993 [1978]) (Lind and Zmud 1995).

Little research has acknowledged the *reciprocal* context behaviour relationship that exists (Fulk, et al. 1992) and the subsequent effects of changing communication patterns on the social infrastructure of organisations (although see Lee (1994)). Agreement is now being reached that "the nature of the medium matters—that the mechanisms of the mind are not indifferent to the means by which most information is received. The tools of thought alter the processes of thought" (Biocca 1992, p. 14). Consequently, the need to compare electronic and face-to-face communication within a social context is becoming more acute.

Trevino et al. (1987) acknowledge the difference with which managers treat requests dealt with electronically and those dealt with face-to-face, but the explanation for this was sought out using media richness theory rather than a socially based approach. Lea (1991) also notes this deterministic research theme which concentrates primarily on efficiency and productivity: "This restricted view that has formed so much research increases the difficulty in fully understanding the role of computer-mediated communication in the various social and organisational contexts in which it is used" (p. 153) and it "fails to examine reciprocal and recursive relationships between media and communication in organisations over time" (Yates and Orlikowski 1992, p. 310).

The existing literature, therefore, raises a number of important factors about mediated communication but does not directly address issues of obligation as proposed by Introna and Whitley (1996). The study described in this paper was sensitized by many of the concepts raised by the existing literature and they were used in generating and phrasing the questions used in the semi-structured interviews described in the next section.

4. Research Methodology

A series of semi-structured interviews were performed over a six week period with 15 members of staff at the LSE, from a variety of areas and positions, both academic and administrative. Participants ranged in age from twenty three to fifty-six and the proportion of males to females was approximately 1:2.

Unfortunately, this selection of subjects was not wholly representative of the distribution of staff at the School due to the time of year (July /

August) and individual circumstances, as there is a distinct bias towards female administrators and away from academics. Details of the breakdown of interviewees is given in Table 1 below. A sample interview plan is available from the authors.

The interviewees were led through a series of individually tailored questions designed to investigate the different factors thought to affect communication and use of different communication media. With the different factors that affect communication in this particular environment established, one can begin to investigate how obligations are formed in communication and how electronic media affect them. The questions consisted of:

- simple yes / no answers regarding how they initiate / respond towards certain communication media in various situations,
- the setting of hypothetical scenarios to try and discover how they would initiate / respond to a communication in differing circumstances
- simple questions that required descriptive answers of current, or past, situations regarding the communication media employed.

The electronic media employed within the School (e-mail, voice-mail and the internet) are available as daily work tools *for all members of the school*, but their use is voluntary and varied between the subjects; regulated mandatory use has not yet been established. Other media used throughout the school are face-to-face, telephone, letter, memo, standard report, notes, faxes and secretary.

5. Results

Three sets of results were produced; those of the interviews themselves, those of trying to secure

Role in the School	Male	Female	Total
Departmental Manager	2	4	6
Departmental Administrator	1	4	5
Support (Secretary / IT support)	1	1	2
Academic	1	1	2
Total	5	10	15

Table 1. Role and sex of interviewees, identified by profile number.

the interviews and those of further contact with the interviewees following the interviews.

5.1. The Interviews

All administrative staff of the School are active users of electronic mail but 70% of those interviewed spoke of the problem concerning a number of academics who do not use it. All those interviewed are fully computer literate, active users of this technology (thirteen have received in-house training) and favour employing computers in their working environment, therefore the results from the interviews are biased towards the use of technology.

Regarding the media most employed, few interviewees (three) differentiated between quantifying in terms of time and number of interactions. For inter departmental communication, face-to-face and electronic mail are used by all subjects, but often the telephone is employed for communicating with academics who did not use electronic media or for very urgent communication. Memos / circulars and notes are also used frequently for communicating with academics.

For standard communication between administrative staff, the telephone is rarely used, and memos are practically non-existent having been superseded by e-mail. However, the academics interviewed stated that they often send memos, instead of e-mails, to administrative staff even though both facilities are available. If face-to-face communication with students is not possible, then a letter is sent to their home address.

For communication within the whole of the School, face-to-face is said to be employed much less as a medium although some subjects (four) still consciously try and use it whenever possible. Otherwise, electronic mail and the telephone are used by all subjects, again often with written correspondence to academics who either don't use electronic mail, or if the initiators of the communication were unsure whether the academics are active e-mail users. Four respondents quoted the complex physical layout of the School as being one of the main reasons why face-to-face interaction is not used as much as they would prefer. Amongst administrative staff of the School, and within respective departments, electronic mail is used

by approximately 85% of respondents regularly for everyday standard communication purposes.

For external communication, faxes and letters are used by all respondents that communicate internationally with the use of electronic mail gradually increasing as the system improves technically. The telephone is rarely employed internationally because of the cost, but is used frequently for national communication, as are electronic mail, letters and fax. Some of the respondents also try and maintain occasional face-to-face contact with people that they deal with regularly outside of the School and find this invaluable to their work. The academic subjects spoke of conferences and seminars that they attend which enables face-to-face interaction with colleagues all around the world with whom contact is then maintained mainly by e-mail or letter.

Thirteen respondents are large users of electronic mail and claim that they use it for the majority of their interactions. The remaining two use it regularly, but it is not a form of communication that they rely upon. With this increasing use of electronic mail it appears not that face-to-face interaction has decreased in use, but rather the use of hard copy communication and telephone has decreased; illustrative examples cited by the interviewees are as follows:

- if an item of communication does not warrant a strictly formal reply then an e-mail is sent in place of a letter,
- for internal memorandum, an e-mail is a much quicker form of communication than typing a hard copy, especially if it is to many people,
- instead of sending a fax or making a telephone call, an e-mail again can be quicker and less expensive, especially if it is for a foreign destination,
- many people find the telephone intrusive and disruptive to their time management, but an e-mail can be read and answered in a person's own time.
- the telephone can also be restrictive for many purposes and does not possess an automatic log facility.
- much effort is required to engage in face-to-face interaction. The advent of the telephone encouraged easy communication and, therefore, much 'unnecessary' communication. Subsequently it is more likely to be superseded by e-mail.

When asked if they use the receipt facility (a facility whereby cc:Mail sends a message back to the sender informing them that their message has been 'opened'. The receiver is aware that the receipt has been sent) available on electronic mail, the responses were as follows:

- seven said they find it rude and offensive, only employing it if they have had problems with someone 'receiving' an e-mail in the past, if they are unsure that the receiver is an active user, or if it is an extremely important / sensitive matter, or formal request, and it is crucial that the receiver read it by a certain time.
- three declared that they sometimes use it for international destinations (due to technical difficulties and failures that they have experienced in the past) or alternatively for communicating with an academic.
- two stated that they often use it to check that the receiver has received the information on time, to make the e-mail appear urgent and hence be treated more quickly / seriously, or as a self protection measure.
- one claimed that they use it as a measure of the seriousness of the issue by the speed of reply.
- two were unfamiliar with the facility.

In terms of preference, three respondents said they have no preference regarding the media employed in contacting them. However, seven indicated that they preferred being contacted by electronic mail because of its asynchronicity and non-intrusive nature. Three respondents stated preference for the telephone because of its synchronicity and the ability to resolve issues immediately. Only one respondent stated the preference as being face-to-face interaction. Fulk et al. (1987) suggest that people tend to respond using the same medium as the initiator and nine respondents did admit being influenced by this.

For initiating communication, eight respondents stated that they prefer using the telephone, six prefer e-mail, while one prefers face-to-face interaction. Again this lack of support for the use of face-to-face communication may be because it is regarded primarily as a social medium, not a communication medium. All respondents appeared to compare their use of e-mail with that of traditional written media or the telephone rather than with face-to-face communication, despite being told at the beginning of

the interview that it was the comparison between face-to-face and electronic communication that was being investigated.

However, for negotiation five respondents said that the communication they would employ would be face-to-face, two said the telephone, seven said either face-to-face or the telephone (depending on the context), while one said a formal letter; no one indicated that they would use an e-mail, although it is likely that e-mails would be used for clarifying 'fine print' issues. For chasing up a request, nine stated that they would either telephone or use face-to-face, one replied that they would send an e-mail if it was to many people, otherwise they would use face-to-face, three replied the telephone or e-mail, and two replied the telephone or hard copy memo.

Thirteen of the respondents admitted prioritising according to media, with a feeling of immediacy often being associated with e-mail because of the ability to respond quickly. The telephone, voice-mail, e-mail, fax and then letter was the order of prioritisation given by twelve respondents with the remaining one not giving priority to voice-mail because he has chosen not to have it.

One department within the School issues service level agreements that guarantee responses to telephone calls within two days and to e-mails and letters within five days. Initially e-mails had a two day limit imposed upon them, but this was felt to be too ambitious. Thirteen respondents admitted that they will open an e-mail as soon as it arrives and will deal with it as quickly as possible, two respondents stated that they try and deal with e-mails within the day. Non-personalised messages are given very low priority.

Ten subjects readily admitted that if they are one of many recipients of an e-mail they will treat it with less priority, and one respondent admitted that she might ignore it altogether. Many also stated that if they receive hard copy questionnaires from market research, students or 'bodies' attempting to compile statistics, then these are never answered. One respondent was the exception and said that he always responds to these things if they are well written and he can understand them; often, he said, they are not and they are ignored. There were four main explanations given for this prioritisation:

- the difference between perceived and actual behaviour of the respondents.
- unwillingness / inability of respondents to be completely honest in their answers for fear of being viewed as unprofessional etc.
- the number of subjects contacted in requesting interviews formed a wider and more representative sample of people.
- those interviewed had similar personalities and views on technology

5.2. Requesting Interviews

Of the four validity claims the most important for the creation of obligation is the comprehensibility claim, especially where no institutional obligation already exists and when the communication is asynchronous. Introna and Whitley (1996) argue that the normative claim is the most difficult issue in electronic communication since the speaker and hearer are removed and therefore anonymous. This was illustrated when only two respondents stated that they would have agreed to the interview if approached via e-mail by members of another University. The results from requesting interviews illustrate that when the sincerity claim is not met the obligation is low. Using e-mail all other claims were met (the purpose of the interview was clear, the e-mail address would illustrate membership to the School and the nature of the study meant it was acceptable to contact them requesting an interview) but using an electronic medium meant that the sincerity of the request was not adequately transmitted, therefore resulting in a low success rate. This rate further decreased when voice-mail was employed as the communication medium and the truth claim could not be validated (there is no immediate evidence of School membership). The results of different attempts to find participants for the study are summarised below:

- face-to-face contact with interviewee, using a contact name — 90% success rate.
- face-to-face contact not with interviewee, using a contact name — 50% success rate.
- individual electronic mail messages, using a contact name — approximately a 40% success rate.
- broadcast electronic mail, no contact name — 20% success rate.
- telephone / voice-mail, no contact name — approximately a 17% success rate.

5.3. Following up the Interviews

Obtaining further contact after the interviews resulted in a 100% success rate. Following the interviews, further questions were e-mailed to twelve of the interviewees within two weeks of the interview requiring a response. Responses were received within a week from all subjects, supporting the findings of Rocco (1996) who states that after mutual trust has been formed through face-to-face interaction a relationship can be supported by electronic means.

5.4. Discussion

The main theories surrounding the use of electronic communication as already mentioned imply that obligation will be stronger when:

- the medium has high social presence,
- the medium is high in richness (actual and / or perceived),
- the social influence for obligation is strong

and the results of this study do conform with these assumptions. Face-to-face communication has the highest social presence and is viewed as being the richest medium, whereas hard copy written correspondence is the lowest according to both of these theories. Concerning the social influence theory, pre existing attitudes dominate. Therefore institutional obligations are strong, as are obligations felt towards 'colleagues' from similar fields or positions, or with people or institutions with whom prior contact and relationships have been established.

The position of electronic media on the richness scale is still one of controversy due both to the continuing development of the technology and to the uncertainty and contention surrounding the qualities that it does have to offer. Daft et al. (1987) propose that "e-mail is considered inappropriate for exchanging confidential information, resolving disagreements, getting to know someone and negotiating" (p. 363). But many of the respondents in this survey stated that they do use it for confidential or sensitive information, or for resolving disagreements; a minority declared that they will even use it with people that they do not know and build a relationship up on this. Negotiation, however, is still the one task that nobody in the survey conducts via e-mail.

These results show that the use of e-mail is changing considerably, due probably to a change in social context as well as other factors such as ease of use and increased computer literacy. Consequently, this development and increase in the use of e-mail is resulting in the change of use of all other media within the School, except face-to-face. The use of hard copy correspondence is decreasing and the telephone is now mostly employed for communication of a more urgent nature, and rarely for international communication. It is this transformation that is becoming more significant; "in all likelihood, in the next millennium e-mail . . . will be the dominant interpersonal telecommunications medium, approaching if not overshadowing *voice* within the next fifteen years" (Negroponte 1995, p. 191, emphasis added). In order to understand the dynamics of these changes it is the attributes of the media that must be investigated and not merely the media themselves.

All communication media can be classified as having three attributes: synchronous or asynchronous, oral or written, face-to-face or not face-to-face. Applying media richness theory, synchronous communication is regarded as being richer than asynchronous and oral richer than written. Therefore, it could be assumed that obligation is stronger when communication is synchronous and oral and indeed the study has shown that face-to-face and telephone communication does provoke this. But e-mail appears to be causing a decrease in telephone and not face-to-face communication. E-mail possesses the same 'ease of use' qualities, unlike face-to-face, and consequently is encroaching more upon the traditional role of the telephone. But traditional boundaries are changing. Voice-mail now allows oral communication to be asynchronous which would imply that it would create a greater sense of obligation than written asynchronous media such as e-mail, and the order of prioritisation as stated by the respondents does conform to this (as long as the comprehensibility claim is met).

E-mail contains the attributes of traditional written media (asynchronous, written and not face-to-face), yet for the majority of respondents obligation is stronger with e-mails and faxes than with letters and memos. One reason for this is the 'potential' speed of response that the media are capable of, thus obliging the respondents

to reply more quickly or even to respond at all. This in turn has influenced the *type* of message that is communicated via e-mail. It has been noted (Lea 1991) that e-mails are more similar to note-writing than letter writing and indeed several subjects stated that lengthy and complex communication will warrant a telephone call instead of an e-mail. So obligation to deal with them quickly may be because the content of the message often warrants a quick and easy answer which brings us full circle to the rational media richness theory that believes it is the content of the message which drives the use of the medium. The fact that few people use the receipt facility suggests interestingly that the increased obligation felt with e-mail is *not* due to the fact that they can verify that the receiver has received the communication. The majority of respondents did state that, if possible, they view an e-mail as soon as it arrives and respond to it as quickly as possible, suggesting that the *capability* of being able to reply swiftly and easily obliges many to do this. Consequently, this study suggests that there are now two levels of asynchronicity in communication; that of electronic communication and that of hard copy correspondence. The technology of e-mail now allows matters of a semi-urgent nature to be communicated through a medium other than the telephone, hence the telephone is restricted to matters that are urgent and / or require discussion or lengthy explanations. Furthermore, the speed in composing replies on e-mail (no formalities are required, no printing out of hard copies etc.) and the additional 'richness' it has to offer (Markus 1994) also provides further explanation as to why it is being used in place of traditional written media.

6. Concluding Discussion

6.1. Summary

Although the use of electronic media within the School has increased, the use of traditional communication media has not *proportionately* decreased and as a result there has been a salient growth in total communication. The use of the telephone and hard copy correspondence (letters and memos) has notably declined as e-mail is increasingly used; face-to-face interaction is still considered an important medium and

conscious efforts are made to maintain this. The subjects of the study were inclined to compare e-mail with other written media and this is illustrative of its current role, both perceived and actual.

Applying Habermas's validity claims indicate that speech acts cannot be as fully validated electronically as they can face-to-face, but this is not due simply to the electronic nature of the requests. The asynchronous nature of both electronic and traditional written communication can result in the violation of one or more validity claims, but the additional speed of electronic communication in relation to traditional media implies that there are now two levels of asynchronicity attributed to communication. Subsequently, the potential speed of response of electronic media and the content of the message can often result in the level of obligation being higher than that felt with traditional written media. No theory is without context and this study has suggested many additional factors in the context of the LSE that also contribute to or oppose the formation and maintaining of obligations in the electronic community. The reciprocal relationship between context and behaviour cannot be ignored in future research.

The next two sections discuss possible limitations of the study. The first relates to the particular technology used in the study and considers the impact this may have on the results, the second deals with the utility of using Habermas's validity claims as a basis for the research.

6.2. Technology Issues

Rob Kling (personal correspondence), commenting on the rapidly changing technological basis of studies in mediated communication such as this one, proposes a useful rule of thumb for seeing whether the results are grounded in any particular technological era. Would the study still be of relevance, he asks, if the e-mail system had full multimedia capabilities, with audio-clips replacing *all text*? Thus instead of typing an e-mail message, you 'say' it.

In the case of this study, the form of the technology is not critical. The main 'technological' effect is not the form of the technology (although the receipt facility did produce some

interesting responses) but rather the social result of widespread coverage of e-mail usage (which is a consequence of the advancing technology). To that extent, therefore, we expect that the results would still hold in Kling's future world.

6.3. Habermas and Organisational Life

A second concern about the research presented in this paper is the fact that all the respondents claimed that they would attempt to respond to almost all messages they received, regardless of which validity claims the messages did not comply with. Thus, e-mails sent to the wrong person would often be forwarded to the appropriate person or sent back with a brief explanation of the problem.

To some extent this may be a consequence of the choice of study site, as the LSE tends to encourage a sense of 'corporate pride' in its employees, who will then attempt to ensure that LSE's image (especially to outsiders) is consistently a high quality, friendly and responsive one.

It would be interesting, therefore, to replicate this study in a commercial organisation. In addition to offering different 'corporate identity' this would also permit the generation of genuinely invalid requests, that fail to support the various validity claims. There were significant ethical and practical concerns about sending colleagues within the School such messages only to have to explain afterwards that they were purely part of an academic study.

A final position would be to reevaluate the applicability of Habermas's work to organisational settings rather the 'abstract' and idealised public space. Habermas, almost certainly, would respond that he is dealing in theory and is not concerned about the minutia of everyday situations. Nevertheless, the complexities of pre existing institutional arrangements and friendships do seem to have an important role in maintaining obligations.

6.4. The Primacy of Face-to-Face Communication

The final part of this paper discusses an issue which emerged from the study have been reinforced by a number of different authors. This issue can perhaps best be described by

considering the work of Emmanuel Levinas, who argues that there is something primordial about dealing with a human face. When you look someone in the eye, you are looking into their core.

Such a reading of the importance of the face would seem to support the results presented here, whereby face-to-face requests for interviews were generally agreed to, and follow up questions after a face-to-face meeting were *all* answered. These results have also been confirmed by the experimental work of Rocco (1996) which found that mediated decision making in groups that had first met face-to-face was significantly more effective than for groups who had not met previously.

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References

- AUSTIN J. L., (1962) *How to do things with words: The William James lectures delivered at Harvard University in 1955*. (Second edition) Oxford University Press, Oxford.
- BIOCCA F., (1992) Communication within virtual reality: Creating a space for research, *Journal of communication* 42(4), 5–22.
- BRAND A., (1990) *The force of reason: An introduction to Habermas's theory of communicative action*, Allen & Unwin, Sydney.
- CALDWELL B., UANG S. AND TAHA L., (1995) Appropriateness of communications media use in organisations: Situation requirements and media characteristics, *Behaviour and information technology* 14(4), 199–207.
- COLLINS H. M., (1990) *Artificial experts: Social knowledge and intelligent machines*, The MIT press, Cambridge, MA.
- DAFT R., AND LENGEL R., (1984) Information richness: A new approach to managerial behaviour and organisational design, *Research in organisation behaviour* 6, 191–233.
- DAFT R., AND LENGEL R., (1986) Organisational information requirements, media richness and structural design, *Management science* 32(5), 554–571.
- DAFT R., LENGEL R. AND TREVINO L., (1987) Message equivocality, media selection and manager performance: Implications for manager performance, *MIS Quarterly* 11, 355–366.
- D'AMBRA J., (1995) Computer mediated communication and management communication: Transforming corporate communication, In *Proceedings of the Third European Conference on Information Systems* (Doukidis G., Galliers B., Jelassi T., Krmar H. and Land F. eds.) 577–590, Athens, Greece.
- DEAUX AND WRIGHTMAN, (1988) *Social psychology* Brook / Cole Publishing Co., California.
- FULK J., SCHMITZ J. AND SCHWARZ D., (1992) The dynamics of context behaviour interactions in computer-mediated communication, In *Contexts of computer-mediated communication* (Lea M. ed.) Harvester Wheatsheaf, New York.
- FULK J., SCHMITZ J. AND STEINFELD C., (1990) A social influence model of technology use, In *Organisations and communication technology* (Fulk J. and Steinfeld C. eds.) Sage, Newbury Park.
- FULK J., STEINFELD C., SCHMITZ J. AND POWER J., (1987) A social information processing model of media use in organisations, *Communication research* 14, 529–552.
- HABERMAS J., (1987) *The theory of communicative action: vol. 2, Lifeworld and system: A critique of functionalist reason*, (trans. T. McCarthy) Polity, Cambridge.
- HAEREM T. AND SGHOLT E., (1995) Knowledge transfer in networking organisations; enabled by information technology, In *Proceedings of the Third European Conference on Information Systems* (Doukidis G., Galliers B., Jelassi T., Krmar H. and Land F. eds.) 701–719, Athens, Greece.
- HILTZ S., JOHNSON K. AND TUROFF M., (1986) Experiments in group decision making: Communication process and outcome in face-to-face versus computerized conferences, *Human communications research* 13(2), 225–252.
- HILTZ S. AND TUROFF M., (1993 [1978]) *The Network Nation: Human Communication via Computer*, The MIT Press, Cambridge, MA.
- HINDS P. AND KIESLER S., (1995) Communication across boundaries: Work, structure, and use of communication technologies in a large organisation, *Organisation science* 6(4), 373–393.

- INTRONA L. D. AND WHITLEY E. A., (1996) Thinking about obligations in electronically mediated communication, In *SISnet research workshop* (Krcmar H. and Schwarzer B. eds.) University of Hohenheim, Lisbon, Portugal.
- KIESLER S., SIEGEL J. AND MCGUIRE T., (1984) Social psychological aspects of computer-mediated communication, *American psychiatrist* 39(10), 1123–1134.
- LEA M., (1991) Rationalist assumptions in cross-media comparisons of computer-mediated communication. *Behaviour and information technology* 10(2), 153–172.
- LEE A., (1994) Electronic mail as a medium for rich communication, *MIS Quarterly* 18(2), 143–157.
- LIND M. AND ZMUD R., (1995) Improving interorganisational effectiveness through voice-mail facilitation of peer to peer relationships, *Organisation science* 6(4), 445–461.
- MARKUS M., (1994) Electronic mail as the medium of managerial choice, *Organisation science* 5(4), 502–507.
- NEGROPONTE N., (1995) *Being digital*, Hodder & Stoughton, London.
- PICKERING J. AND KING J., (1995) Hardwiring weak ties: Interorganisational computer-mediated communication, occupational communities, and organisational change, *Organisational science* 6(4), 479–486.
- RICE R., (1987) Computer mediated communication and organisational innovation, *Journal of communication* 37(4), 65–94.
- ROCCO E., (1996) Cooperative efforts in electronic contexts: The relevance of prior face-to-face interactions, In *Proceedings of the Americas Conference on Information Systems* (Carey J. ed.) University of Arizona, Phoenix.
- SHANNON C. AND WEAVER W., (1949) *The mathematical theory of communication*, The university of Illinois Press, Urbana.
- SHORT J., WILLIAMS E. AND CHRISTIE B., (1976) *Social psychology of telecommunications*, Wiley, New York.
- SIEGEL J., DUBROVSKY V., KIESLER S. AND MCGUIRE T., (1986) Group processes in computer-mediated communication. *Organisational Behaviour and Human Decision Processes* 37, 157–187.
- SPROULL L., AND KIESLER S., (1986) Reducing social context cues: Electronic mail in organisational communication, *Management science* 32(11), 1492–1513.
- SPROULL L. AND KIESLER S., (1991) *Connections: New ways of working in the networked organisation*, The MIT Press, Cambridge, MA.
- TREVINO L., LENGEL R. AND DAFT R., (1987) Media symbolism, media richness and media choice in organisations: A symbolic interactionist perspective, *Communication research* 14(5), 553–574.
- WALTHER J., (1995) Relational Aspects of Computer mediated communication: Experimental observations over time, *Organisation science* 6(2), 186–203.
- YATES J., AND ORLIKOWSKI W., (1992) Genres of organisation communication: A structural approach to studying communication and media, *Academy of management review* 17, 299–326.

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