

FROM UTOPIA TO DYSTOPIA: THE TWIN FACES OF THE INTERNET

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Abstract

The literature contains many examples of utopian predictions stemming from the widespread adoption of Internet technology, including extended democracy, personal liberation, enhanced powers of organization and coordination, and renewal of community. These are briefly described in this paper. However, more recently, researchers have begun to provide more critical, dystopian predictions for this technology, and these accounts are also summarised in the paper. Interestingly, researchers have tended to consider the utopian and dystopian outcomes as mutually exclusive, i.e., there is a tendency to present extreme accounts which are entirely utopian or dystopian. It is suggested that both the utopian and dystopian visions are fundamentally flawed, in so far as they are founded on a predominantly technologically-deterministic view. The paper draws on a comprehensive field study of the phenomenon in practice to illustrate that the Internet has the propensity to result in both utopian and dystopian outcomes. Thus, a central argument presented is that both utopian and dystopian outcomes can occur simultaneously, albeit in relation to different factors. The paper proposes a framework which illustrates the factors which influence the manner in which utopian and dystopian outcomes result.

Keywords: Information and Communications Technology (ICT), Internet, Utopia, Dystopia, Technological Determinism

1. Introduction

The whole history of the Internet¹ may be encapsulated into what amounts to a period of just about three decades. Nevertheless, despite its comparative 'youth', it has experienced a phenomenal expansion of interest, particularly in recent times, to become a topic of extreme interest to the population at large. As a consequence, a great deal has been written about the Internet. Despite both the quantity and the diversity of the research in this area, there is a dearth of theoretical integration or cross-study comparisons (December, 1996) and indeed, some of the research has been contradictory. In examining the literature, one can discern two diametrically-opposed strands. Firstly, there is a stream of literature, both scholarly and journalistic, coinciding with the emergence to popular prominence of the Internet, which presents a utopian vision of the benefits which can be anticipated through the widespread adoption of the Internet (cf. e.g., Kelly, 1996; Stewart, 1996; Rheingold, 1993). However, whilst many enthuse about the rise of the Internet, there are also the critics who have tended to present dystopian accounts of the implications of the extensive use of the Internet (cf. e.g., Birkerts, 1996; Heims, 1992; Stoll, 1995; Talbott, 1995; Winner, 1996a).

The paper is structured as follows: In the next section, the utopian and dystopian visions for the Internet are presented. It is argued that both utopian and dystopian visions are flawed in so far as they are both underpinned by a technological deterministic view. Following this, the findings of a comprehensive field study are presented. Based on these findings, the paper argues that the Internet has the capacity for both utopian and dystopian outcomes simultaneously on a range of factors, and that which are realised depends on the contingencies of any particular situation. A framework is proposed which serves to illustrate those mediating factors which predispose towards each outcome. Finally, the implications of the research findings are discussed.

2. The Internet: Utopian and Dystopian Visions

There is a stream of popular and academic literature that comments on the meaning and consequence of information technologies on people, organizations and society. These visions of computerization and social change are presented within the context of utopian and dystopian writings. Kling describes how each of these opposing camps form a "*genre of discourse*" (Kling, 1996a, p.42), whereby each genre is shaped by a set of conventions,

¹ As with many technological concepts, arriving at precise and universally accepted definitions of terms is especially difficult, since researchers tend to use the same terms to denote different concepts, and different terms to denote the same concept. This is even more problematic in the case of technologies such as the Internet which have become a topic of everyday conversation. In this paper, we have chosen to use the term Internet as an umbrella one to embrace related information and communication technology (ICT) phenomena and terms such as the World-Wide Web and cyberspace.

limited by the kind of themes they are willing to examine. In fact, when examining many of the descriptions of the use of current technologies, it is evident that they are framed by specific genre conventions, which as a consequence limit the range of ideas to be examined and included (Kling, 1996a). These genre conventions are presented as “*epistemological envelopes*” (Kling, 1996b) that encapsulate all that is ‘true’ about computerization and wider society. Many of these writings, which claim profound effects arising from computerization, shy away from the more difficult question of what is happening in reality (George and King, 1991), preferring to opt for speculation about future possibilities.

The genres of technological utopianism and dystopianism are particularly prevalent in relation to the hype and predictions surrounding the Internet. Whilst many enthuse about the rise of the Internet, proclaiming the radical expansion of democracy in a uniquely libertarian cyberspace, there are also the critics—although in much smaller numbers—who decry the enslavement of whole populations via a perfected technology of deception and surveillance (Ess, 1996). These differing ‘genres of discourse’ are summarised next.

2.1. The Internet: The Utopian Vision

Many would agree that the convergence of computing and telecommunications signals the start of a new ‘information age’ or ‘information revolution’ (cf. Toffler, 1980; Webster, 1995). Yet, despite all the hype surrounding this ‘information revolution’ we are rarely told precisely what this means (Kling & Iacono, 1990). Undeniably, there has been an enormous increase in information technologies and information networks, with a corresponding abundance of literature which describes the endless possibilities they bring. High-speed networks can connect thousands of systems, providing communication links that no one dreamed possible a decade ago, and so there are many visions of how technology will transform contemporary society. Not surprisingly, this increase in technological capabilities excites researchers, developers and journalists, all of whom are eager to document these advances. Most commentators are impressed by the ‘information revolution’ or the prospect of the ‘information superhighway’ and thus reel off social and economic consequences that they assume will inevitably follow (Webster, 1995). In the rhetoric of these discourses, work and organizations will be transformed, education upturned, democracies revitalised, and community life resurrected.

Tales of utopia are created in order to stimulate hope about possibilities for the future. Technological utopianism does not refer to the actual technologies *per se*, rather it refers to

"analyses in which the use of specific technologies plays a key role in shaping a utopian social vision, in which their use easily makes life enchanting and liberating for nearly everyone" (Kling, 1996a, p.42).

With the rapid development of new communication technologies there is a recurrent tendency to view them as the gateway to a new era of democracy, equity, plenitude and knowledge. Most authors who wish to talk about the benefits of technology focus upon the expanding information-processing capabilities of computer systems, equating technological progress with social progress. The information superhighway is often presented as the universal cure-all for the social ills that have plagued humanity and many seem convinced that it will somehow transform society into a better place. In this context, Internet messages from Tianamen Square and during an abortive coup attempt in Russia have been proposed as evidence of the irresistible democratisation potential of the Internet (cf. Talbott, 1995).

Researchers have also indentified the capacity of the Internet to liberate interpersonal relationships from the confines of physical locality and create opportunities for new personal relationships and communities (Rheingold, 1993). Indeed, there are even examples of cyberlove, cybersex, as well as cyberweddings (Adams, 1996).

In the historical loop which predicts revolutionary consequences with each new communications technology, there are some specific things which emerge (Surman, 1996). Firstly, is the notion that positive social change on an unprecedented scale will emerge from the introduction of a new communication technology. Secondly, these changes will be driven by the technology, attributable to the inherent technical properties of the hardware. Finally, this social revolution is of a scale not witnessed for hundreds of years. A typical example of such technological utopianism is provided by Stewart (1996):

"The future of information technology descends upon us in a swarm of buzzwords: global village, electronic superhighway, information age, electronic frontier. Someday soon, cyberspace - the vast, intangible territory where computers meet and exchange information - will be populated with electronic communities and businesses. In your home, a protean box will hook you into a wealth of goods and services. It will receive and send mail, let you make a phone or video call or send a fax or watch a movie or buy shoes or diagnose a rash or pay bills or get cash (a new digital kind) or write your mother. That will be just the living-room manifestation of what promises to be a radical - and rapid - transformation of commerce and society, the greatest since the invention of the automobile."

His optimism continues with regard to the growth of 'electronic commerce':

"During the next few years, electronic markets will grow and begin operating over cheap, accessible public networks - the so-called electronic highway. Just as railroads opened up the West, the highway will open wide the electronic frontier. Whole industries will be destroyed and new ones born; productivity will leap and competitive advantage shift in the direction of small business."

This technological utopianism is not just signalled by his optimism about the growth of Internet services, but also by his failure to critically engage in the possible downside of computer networking. This article builds on the increasing public interest in the internet, which was ignited by President Clinton and Vice-President Al Gore's promotion of the National Information Infrastructure (NII), popularised by the "information superhighway". The utopian account provided by Stewart focuses primarily on one area, viz., electronic commerce. Of greater concern are the more expansive articles which predict sweeping changes to society. The "Electronic Hive" by Kelly (1996) is an illustration of this as he analogises the development of emerging computer networks with biological collectivities of beehives:

"Just as a beehive functions as if it were a single sentient organism, so does an electronic hive, made up of millions of buzzing, dim-witted personal computers, behaving like a single organism. Out of networked parts - whether of insects, neurons or chips - come learning, evolution, and life. Out of a planet-wide swarm of silicon calculators comes an emergent self-governing intelligence: the Internet." (Kelly, 1996, p.76).

As with Stewart's article, Kelly's technological utopianism is evident not only from the buoyant images he provides, but also from the stark absence of troubling questions which he chooses to ignore. Kelly writes about the epochal changes to society in much the same vein as Alvin Toffler, in that whilst they both address important issues, such as how information technologies alter the way people perceive information or how technology affects the social life we develop, they choose to frame their responses with positive illustrations which support their generally buoyant predictions.

However, not all researchers have concurred with the utopian vision. The opposing view - the dystopian one - is presented next.

2.2. The Internet: The Dystopian Vision

Much less frequently, authors highlight the more negative vision whereby technology exacerbates human misery as individuals become increasingly controlled by what they fail to understand. In his detailed account of the history of systems development, Friedman (1989) points out that the dystopian account of technological domination actually existed from the 1960s, albeit the preserve of film-makers (e.g. *Fail-Safe*, 1964; *Fahrenheit 451*, 1967; *Clockwork Orange*, 1971). Some, more academically oriented, accounts may also be found, notably Boguslaw (1965), Ellul (1964) and Maynaud (1968). However, more recently there has been increased interest in such research. Thus, at the opposite end of the spectrum from the utopian vision lies what Kling (1996a) describes as the "*comparably dark*" dystopianism

which views technology as a vehicle to exacerbate human suffering. Technological dystopianism examines how certain technologies "*facilitate a social order that is relentlessly harsh, destructive and miserable*" (Kling, 1996a, p.42). An example of this is Sven Birkerts' essay "The Electronic Hive - Refuse it" which serves as a vivid counter-argument to Kelly's essay. Whereas Kelly sees computer networks as deepening humanity, Birkerts views them as alienating. Whilst acknowledging the seduction of communicating across computer networks, Birkerts views them as further removing people from their natural world:

"Immersed in an environment of invisible signals and operations, we find it as unthinkable to walk five miles to visit a friend as it was once unthinkable to speak across that distance through a wire" (Birkerts, 1996, p.81).

Langdon Winner (1996) echoes Birkerts' concern that people will experience increased alienation through the use of computer networks. In his article about the electronic office he claims that low-status, primarily clerical workers are highly regimented and their work is tightly monitored and controlled through computerized control systems:

"As they enter an electronic office or factory, they become the objects of top-down managerial control, required to take orders, complete finite tasks, and perform according to a set of standard productivity measures. Facing them is a structure that incorporates the authoritarianism of the industrial workplace and augments its power in ingenious ways. No longer are the Taylorist time-and-motion measurements limited by an awkward stopwatch carried from place to place by a wandering manager. Now workers' motions can be ubiquitously monitored in units calculable to the near microsecond." (Winner, 1996, p.83).

Just as there are those who predict that the Internet will liberate relationships and engender community, there are those who view online relationships as shallow, impersonal, and often hostile. These researchers argue that only the illusion of community can be created in cyberspace (e.g. Beninger, 1987; Heim, 1992; Stoll, 1995).

2.3 Internet Utopia and Dystopia: Technological Deterministic Underpinnings

Whilst the technological dystopians provide a useful counterbalance to the romantic visions of the utopians, both camps view technology and social change in a rather elementary and constricted way. Both perspectives embody simplistic assumptions about technology and human behaviour (Kling, 1996a) and are thus limited in what they can offer in terms of social realities about information systems.

Both the utopian and dystopian visions of an information age are driven by technological deterministic explanations. Whether depicting a positive or negative image, technological determinism portrays technology as an exogenous and autonomous development which coerces and determines social relationships and organizations (Williams and Edge, 1996).

Technology is treated as given, and it is assumed will provide an effective and reliable vehicle for social and organizational change. Technology is seen to imply a known direction, determined solely by the properties of the technology (for example, Negroponte, 1995). The ideas of technological determinism are particularly prevalent in the public rhetoric of government and industry, which assumes that paths of technological change are inevitable and by their very nature, necessitate particular social changes (Edge, 1994). The lack of complication offered by such a perspective fails to acknowledge the difficulties in implementation and frequent failure to deliver predicted and desired outcomes (Peltu *et al.*, 1996).

The causal simplicity of technological determinism provides great clarity and so provides immense appeal when discussing the social realities of computerization. However, the lack of realism which typifies such an approach is problematic. Firstly, it assumes that technology is "the *primum mobile* of change" (Webster, 1995, p.219), whilst simultaneously assuming that technology is beyond the realm of values and beliefs. This perception is misleading, since it desocialises key elements of social change by separating technology from the social world within which it resides, whilst at the same time arguing this autonomous force is the mechanism for bringing about social change. Secondly, quantitative increases in technology, as represented by certain indicators such as increases in computer networks, the development of web browsers, the growth of online service providers and so on, are seen to herald the emergence of a qualitatively different kind of society (Lyon, 1988; Webster, 1995). But as Webster observes: "*The blunt point is that quantitative measures - simply more information - cannot of themselves identify a break with previous systems.*" (Webster, 1995, p.25).

Emerging through a critique of the technological determinism tradition and in recognition that technology comprises more than just machines, are the studies of the social shaping of technology. Rather than assume that technological change develops according to an 'inner technical logic', researchers argued that it is patterned by the conditions surrounding its creation and use. The social shaping approach is a generic label for approaches which are committed to opening the black box of technology for sociological analysis (MacKenzie and Wacjman, 1985; Bijker and Law, 1992). It suggests that the capabilities of the technology are equivalent to the political circumstances of its production, their resulting material form reflects the circumstances of their development.

However, the social shaping approach has been criticised as being partial (Bijker, 1995), in that there is little room to consider the obvious effects of technology on society. Recent work by Bijker integrates both social shaping and the 'impacts' themes into what he terms

“sociotechnical ensembles”. A further concern is with the need to go beyond the circumstances of how the technology is produced and understand how people conceive the technology - their knowledge of it, their attitude towards it, and how they choose to use it. As Dalbohm and Mathiassen point out: "*Technology is what its users perceive it to be*" (Dalbohm and Mathiassen, 1996: 904). Rather than having a pre-determined course of direction, it is in the realities of organizational and social settings that technologies are diffused and implemented; these realities defy predictions based on the capabilities of technologies (Dutton, 1996).

Thus, it becomes apparent that the relationship between social and technical elements are intermingled as opposed to a set of independent variables. It was the implicit intention of this study to avoid viewing either the social or the technical as having a discrete impact. This research study sought to investigate a variety of actors and their interpretations of usage of the Internet in a number of organizational settings. The research approach and research findings are presented next.

3. The Research Approach

This research study may be characterised as exploratory in so far as the research wasn't driven by any *a priori* conceptual framework. The research strategy employed was primarily an interpretivist one which sought to investigate and describe in a rich fashion the nature of Internet usage in practice. To this end, a qualitative focus was adopted in the main. Marshall and Rossman (1989) provide a framework for matching research purpose and strategy with research methods and data capture techniques. They suggest that when the research study has a descriptive and exploratory focus—as was the case in this study, appropriate research strategies are field studies comprising in-depth interviews. Thus, this combination of research strategy and data capture technique was adopted.

In survey research, random sampling is often favoured for statistical analysis purposes (Kraemer and Dutton, 1981). However, with qualitative analysis, several researchers have stressed the importance of adopting purposive sampling (Eisenhardt, 1989; Pettigrew, 1990). The rationale behind this is that the selection of cases can then serve as a lens to magnify the research topic. Pettigrew (1990) argues that when selecting cases for consideration, it is useful to choose high experience levels of the phenomenon under study. In this study, this was addressed by the inclusion of interviewees with considerable experience of Internet usage, primarily at work, but also in the home. In order to include people with such levels of

experience, specific sectors were targeted which included people with a history of either searching for electronic information sources or communicating online. Hence, librarians, journalists, academics, and people working in the computer industry were approached. This provided a sufficient range of examples of the phenomenon under study. It was also deemed important to choose interviewees with a minimum of one year's experience, so that usage levels had stabilised following the initial exposure (which Hudson (1997) describes as the "wow factor").

The issue of how many cases to include to enable the generalization to occur is also problematic. An insufficient number of cases would be implausible for analytic generalizations; yet the inclusion of too many cases could result in the data becoming "thin", and more akin to a survey (Miles and Huberman, 1994). On this basis, thirty people were selected for interview, with backgrounds in both industry and academia (Table 1 provides summary details).

The interviews were semi-structured in nature. However, while not wishing to be bound by a rigid questionnaire that ensured the same questions were asked of all interviewees in the same way, an interview questionnaire was nevertheless used, both to act as an *aide memoire* and to give some structure and consistency to the interview process. The questions focused on two primary areas: the nature of communication and the nature of information provision. A copy of the interview guide is available from the authors on request.

All of the interviewees had regular access to Internet facilities at work—via their workstation on their desk. In some instances, interviewees had additional facilities available at home, this was either using a remote log-on facility to a server at their institution or by subscription to an Internet Service Provider (ISP). Therefore, all the interviewees had access to the Internet, but for some with additional home-based facilities, they may also have been able to access other global networks facilitated by commercial online service providers.

In terms of the frequency of time spent using the Internet this varied from three hours a week to being permanently linked up for the purpose of reading email or providing customer support. All the interviewees used the Web and email and the vast majority had experience of newsgroups. Given that the interviewees were fairly adept users of computers, most had experience of using *ftp*, *telnet*, and sophisticated search facilities.

All of the interviewees were English speakers, and for the majority English was their native language. If we consider the language of the Internet, this is specific to the Western world, and so had the interviewees been selected from non-English speaking countries, the results would probably have been quite different. Although foreign language groups may flourish,

there is no doubt that the logic of the Internet and its operating protocols are strongly anchored in an English-language and Western-experience-based idea of what constitutes common sense (Interrogate the Internet, 1996). Given the nature of communication on the Internet, with its interminable word play, irony, double meanings, insinuation (flaming), and notion of etiquette, a full set of communicative capacities in English are a pre-requisite for participation.

Organization/Department (no. interviewed in parentheses)	Position
Department of Computation, UMIST (7)	Lecturer Research Associate Computer Officer and Web Administrator 4 Postgraduate Research Students
Joule Library, UMIST (3)	Librarian for Foreign Languages Departments Librarian for Science and Engineering Departments Head of Reader Services
Registrars Department, UMIST (2)	Office Manager Undergrad. Admissions Officer for UMIST
Staff Development Unit, UMIST (1)	Project Development Officer (specialising in delivering technically-based courses)
Department of Chemistry, UMIST (1)	Network and Web Administrator
Dept. of Computer Science, University of Manchester (2)	Lecturer Postgraduate Research Student
Department of Geology, University of Manchester (1)	Postgraduate Research Student and Web Administrator
National Computing Centre (6)	Chief Design Engineer Management Consultant Systems Engineering Sales Manager 3 Computer Consultants
Large Multinational Computing Company (4)	2 Software Engineers 2 Systems Developers
Department of Information and Communications, Manchester Metropolitan University (1)	Lecturer
Mirror Group Newspapers (1)	Media Developer
Self-employed (1)	Freelance Journalist (specialising in computer-related topics)

Table 1 Background Details on Interviewees

4. Research Findings

This section presents the main findings of the research. The data from the field research was analysed using Grounded Theory methodology (Glaser and Strauss, 1967; Strauss and Corbin, 1994). A number of conceptual core categories evolved from the analysis process and these are presented as a means for considering a number of potentially utopian and dystopian dichotomies. The ones chosen include infinite repository of specialist information or overload of data of dubious quality; communities and relationships liberated or communication stifled

and inhibited; extended democracy or domination by the few; efficient conqueror of time/space constraints or productivity inhibitor.

4.1 Infinite Repository of Specialist Information or Overload of Data of Dubious Quality?

Media commentators pay increasing attention to the notion of information as a defining feature of the society we inhabit and undoubtedly, part of the attraction of the Internet is the ability to find a forum for virtually any topic of interest, no matter how obscure (Talbot, 1995). Many of the interviewees enthused about the fairly rapid access to specialist information, with one interviewee describing it as *"almost like having a super-duper encyclopaedia out there with instant access to anything you want"*. One computer consultant described the relative ease with which he was able to find either technical or commercial information, which was unavailable locally, but the Internet allowed him to *"cast a wider net"* which meant that retrieving the information became much easier, or indeed, access was provided to information which ordinarily would be unavailable:

"The very attractive thing about the Internet and newsgroup discussions is the underground aspects to it. Many things are discussed illegally and a lot of the information one can't get, or it would be very difficult to get, by conventional means".

However, it also became apparent that most of the information was computer-related, perhaps not surprising given the origins of the Internet. As mentioned previously, many of the interviewees were either interested in computing or worked in the field (to varying degrees), therefore there were many areas of relevance. One Network Manager remarked:

"If you're interested in computers and technology then there's tons of stuff, if you're interested in fly fishing then I doubt there's anything of interest"

Clearly, as an increasingly diverse range of groups gain an Internet presence, coverage of certain topics is undoubtedly improving. Yet, whilst there is an increasing presence on the Internet of non-computer related topics, unless the people interested in these topics have access to a networked computer along with the necessary levels of competency needed to access the information, the existence of this type of information is rendered irrelevant. As most of the interviewees were fairly experienced Internet users, they were clearly aware of how to access the information, and therefore felt able to differentiate between the less reliable and the more 'trustworthy' information sources in providing an overview of certain topic areas. Whilst, undeniably, access to expertise is a useful facility afforded by the Internet, it is nevertheless restricted to individuals with the ability to find the required information. This point was stressed by one project development officer who explained that:

"Your search strategy is the most important thing of all - do you know where to look, do you know how to look?"

Interestingly, whilst many interviewees enthused about the rapid availability of expertise in specialist areas, those same interviewees were negative about the excess of information, and spoke of being "*bombarded by information*" or "*suffering from information overload*". Most people had experience of subscribing to electronic discussion groups, but almost all of these people had since reduced the number of groups they subscribed to, citing as a reason either the vast quantity of information received or the dubious quality of the actual information. One software developer expressed his dissatisfaction about the proliferation of "*uninformed information*" which brought into question the validity of Internet-based information resources. This was reinforced by a computer consultant who described it as a "*time waster*", stating that:

"You can find yourself spending a lot of time on the Internet and never really getting what you want in any particular session. You can be distracted, frustrated, you can't find what you need. Even if you can retrieve the information you wanted, was it worth spending that amount of time trying to find it?"

Similarly, a librarian described a scenario whereby she spent the morning "*trawling the world*" looking for information, only to find that it was readily available in her own library. Concerns were also voiced that electronic communication served as a distraction from more important tasks. One systems developer was forthright in stating that:

"With email, people can spend all day reacting to emails and sending other emails which people then have to react to - it all snowballs, rather than just getting on and doing the work".

There were also instances of interviewees subscribing to groups and not even bothering to read the messages they received. As one interviewee put it:

"Some of the messages I receive I don't read. In fact 50 percent of mailing list messages, I just delete without reading them".

4.2 Communities and Relationships Liberated or Communication Stifled and Inhibited?

New social relations are at risk from being mythologised and incorporated into what Carey (1989) describes as the "rhetoric of the electrical sublime". As different types of electronic forums emerge covering a wide range of subjects, enthusiasts argue that electronic networks are predisposed to building new forms of community life (Rheingold, 1993). Much of the grandiloquence surrounding these electronic forums make the assumption that the electrical connections which constitute the network seem to necessarily imply a renewed sense of

community. This perspective presupposes that relationships will develop because of the technology itself, but whilst Internet connections may reach into many homes, this does not mean that people will necessarily relate to each other over the connections (Talbot, 1995).

When asked whether they had formed friendships with people over the Internet, many interviewees appeared awkward or uncomfortable when faced with the notion of forming electronic friendships. One software engineer was eager to illustrate the stereotype of cyber-friendships:

"The traditional computer whizz-kids, that sit at home, wearing their anoraks, live with their mum and dad, spend their time in an upstairs room with Internet access where they become suddenly very sociable, yet they wouldn't sit next to anyone on the bus".

Most interviewees were anxious to point out that they had never used the Internet to *intentionally* make friends. Rather, what had occurred was that they tended to communicate with people with shared common interests, regardless of where they were based. One design engineer made the point:

"You won't find many people interested in what we're doing, or caring even, in Manchester, you won't find many in the UK, but there are enough throughout the world to make it worth doing".

A more common occurrence was that people used the Internet to maintain communication with existing friends, friends with whom they had initially established a face-to-face relationship. One design engineer noted that email enabled him to maintain contact with old friends and without it that contact would most probably cease:

"Most of the people I knew at college are scattered around the world. The only way to keep in contact really is email. If we didn't occasionally email each other we'd never hear from each other. It's a good way of keeping in contact with people".

Interestingly, these friendships were maintained electronically with people that were geographically dispersed. Email provided a cheap, informal and quick method of communication. There were no similar examples provided of people living in the same locality using the Internet to maintain relationships.

The evidence from the interviews suggests that the interviewees had fairly regular communication with people with shared common interests, but this was not perceived in the same way as 'friendship'. The only instances of friendship occurring with Internet communication were the maintenance of existing friendships, which were already established in a physical form. Therefore rather than adhere to visions of communities reborn, where relationships formed are somewhat removed and exotic, we must rethink our images of cyberspace. Ultimately any social consequences which do occur will not flow from its exotic

capabilities, but rather from the fact that people are putting it to ordinary, even mundane social uses.

The proponents of the reduced social cues model (e.g. Sproull and Kiesler, 1991) argue that the absence of social context cues in computer-mediated communication (such as status, gender, race, age, etc. which often regulate face-to-face interaction) result in distinctly different behaviour patterns. Based upon the interview evidence it appears that this element of status-free communication is highly questionable. One journalist commented on the stereotype of an Internet user which influenced the way in which he communicated:

"I tend to have a fairly clear image of what the person I'm communicating with is likely to look like or be, or how they're likely to behave, but it's a preconception, a stereotype. If I send an anonymous message to an anonymous group of people I will just assume there's a generic Internet user and they will be probably male, 35, white and middle class. That's who I'm sending it to".

The proponents of the reduced cues approach would also argue that one of the consequences of the absence of standard conventions, is disinhibited behaviour or 'flaming'. It has been suggested that the lack of social context cues reduces the social constraints that regulate the expression of uninhibited behaviour. The absence of these cues reduces perceptions of power and status within an organization and so consequently control of the communication is reduced. This is coupled with the norms and values associated with the computing subculture (such as hacking, breaking codes, stealing software) which are seen to promote flaming (Kiesler et al., 1984). However, despite the attention which has been centred around flaming behaviour, Lea et al. (1992) argue that flaming is context-dependent and is a comparatively rare occurrence, but that for various reasons, specific instances are remembered and contribute to an illusion of universal anti-normative behaviour.

The interviews provided evidence which confirmed the presence of flaming and hostile behaviour, but there was nothing to suggest that they attributed any significance to such behaviour:

"I read news groups where there was a lot of flaming going on, but most of us think it is fun, and not particularly offensive - the kind of thing people do from behind the anonymity of an account name".

This confirms Weedman's (1991) view of flaming which maintains that the presence of swearing and insults may suggest informality and humour as opposed to reduced sociability. Undeniably, there were far more instances provided of flaming within forums for hobby-related topics, whereas for the 'more serious' topic areas, people had little or no experience of this type of behaviour.

There was a noticeable difference in the levels of flaming experienced by interviewees from the academic community and those from industry, in that the former seemed to have far greater exposure to the phenomenon. Maybe one explanation for this difference could be in keeping with Adrianson and Hjelmquist's (1991) suggestion that 'free language' is much more prevalent in an academic community. Maybe people working in industry were justifiably concerned about the consequences of their involvement in behaviour that could be deemed inappropriate. Another interviewee attributed the existence of flaming to the fact that the Internet was largely dominated by Americans, who were generally much more vociferous than their European counterparts.

Also of interest are the views expressed regarding the acceptability of either sending erroneous information or requesting information without giving full consideration to the consequences: "*If you just put out an idea without any thought behind it, you will get it back as useless, people will tell you*". In sharp contrast to some of the claims that the Internet engendered feelings of social solidarity, several respondents expressed their concerns about appearing inexperienced ('newbies') and as a consequence were unwilling to make contributions. One research student glumly referred to his experiences with an alternative (gothic) newsgroup: "*There really seems to be an unfriendliness, they don't encourage new users*".

There was also evidence to suggest that for some people there was an increased willingness to contribute if they knew who the receivers of the message were and "*what position they were in*". Interestingly, for some respondents the fact that the communication was in a written format was an inhibiting factor, since there would always be a record of the communication which could be referred to. As one software developer said:

"I spend a long time composing email messages because it's written and people can save them forever and so I don't want to write down any old rubbish".

This reluctance was more evident amongst people working in industry as opposed to academia, possibly because the repercussions could be more serious. One systems developer pointed out:

"If it's anything to do with work then I'll spend a long time thinking about it and I think that stops me from using the Internet to put ideas out ".

From the above it appears that the reduced social cues approach holds validity for some respondents, yet for others this is not the case and in fact the Internet actually inhibits communication. There was also a further group of respondents who perceived no apparent difference between communicating face-to-face or electronically in terms of democracy and

equality. The only difference that they distinguished related to convenience and efficiency. This view was confirmed by a research student:

"For me, it doesn't make any difference with people in the department or in the area...if they are close then I would go and ask them face-to-face. It only helps when someone is distant".

4.3 Extended Democracy or Domination by the Few?

Much of the hype surrounding the Internet is predicated on the notion that participation in online communities will enhance democracy and lessen feelings of powerlessness and alienation, hence modifications to the present social systems can best be achieved by utilising this new technology. Such an assumption is fairly typical when any new technology is put to use (Marvin, 1988). With the advent of the Internet is the assumption that distance and space can be overcome and controlled, with "*almost unlimited access to data and people*" (Sproull and Kiesler, 1991). This issue of access to both information and people is based upon a couple of assumptions about computers and CMC (Jones, 1995): firstly, is the idea that computers cut across boundaries; and secondly, that computers break down hierarchies.

Feelings of enhanced democracy received some support from the interviews, where there was a sense that "*everybody has a chance to say what they want to say*". As one research student explained: "*because you have equal standing, there's no hierarchy of conversation*". Some of the interviewees were of the belief that this was of particular relevance to people that lacked confidence in face-to-face meetings. As one librarian observed: "*Perhaps people would be shy speaking in front of people but using email they say what they want*". The fact that the communication took place electronically and thus was somewhat removed from the face-to-face context, provided an additional level of confidence for some people. As one computer officer explained:

"if you don't actually know the people you are conversing with, you've got no pre-conceived notions of what they're like and if they're going to scare you to death when you see them".

Likewise, a computer consultant stated:

"If you're in a meeting with someone very over-bearing, you may perhaps feel a bit intimidated, whereas you won't on the Internet".

For some people, the absence of physical presence was seen to result in a reduction of domination of the discourse, opening it up to other participants. One research student admitted that the use of email increased his willingness to communicate with people higher up the organizational hierarchy.

There were also statements about the apparent anonymity of the Internet in that it enabled people to ask questions without fear of appearing inadequate. As one network administrator explained:

"Most people refrain from asking questions to people's faces to avoid looking unprofessional, but from the anonymity of the list, you don't worry about having to appear the most knowledgeable network manager."

Similarly, another interviewee remarked on the fact that people in competing companies would sometimes provide a helpful response to questions:

"It overcomes company barriers as well. You can ask a question and perhaps somebody at IBM helps you".

Needless to say, responding to a newsgroup question does not in itself constitute collaboration or the removal of competition between organizations. However, individuals respond to individual requests whereas formal organizational cooperation would not necessarily be likely.

Although there was some support for increased democratisation, there was an equivalent amount of evidence to suggest domination by the few. Whilst most interviewees admitted to reading much more than they contributed, they also recognised that certain individuals made the majority of contributions. This core of people was described by one computer consultant as the "*main drivers*". He went on to explain:

"There are certain people that put out the majority of messages. You see the same names over and over again".

Further confirmation of domination by the few was provided by a journalist, who noted the following:

"You tend to find that discussions on a lot of newsgroups focus on a handful of people, sometimes even only two. You find you download all this stuff, say on information superhighway policy (which I was recently researching), you find that with all the debate going on there was only two people saying anything and they were just rehearsing old ideas. They just dragged out their old positions"

He went on to say that there are "*a limited number of opinions, a limited number of participants in any newsgroup*"; consequently there is a very narrow view of things, which contrasts with some of the claims for a multiplicity of perspectives.

This is an interesting point in relation to having a *choice* as to whether or not to listen. Some interviewees expressed the view that with electronic communication there was the option of either reading or simply ignoring the message. This was seen favourably when compared to traditional meetings, where it was presumed that participants would pay attention. This is an important aspect of sender-receiver asymmetry, since it is possible to receive an electronic

message without either reading or acknowledging it. While in face-to-face communication, messages are immediately processed, understood and accepted before the conversation continues, using the Internet, it is conceivable to speak without an audience, and even without knowing that there is no audience at all. Therefore, it is feasible that regular contributions are provided, but no-one actually listens. This obviously raises important questions regarding the democratising and equalising potential of the Internet. Notions of equality surely require that all participants have equal access to the audience and an equal time span for their communicative performance, regardless of status differences.

Whilst some interviewees felt emboldened to speak in an electronic forum, there were also respondents for whom the opposite was true. As once computer consultant said:

"I like speaking in meetings where I know the people. What I don't like doing is saying something on the Internet when I don't know who's listening".

A similar view was echoed by a systems developer:

"I think I'm too timid to put my ideas out to a large audience and have them savaged to bits by whole groups of people round the world who I don't know".

To summarise, it seems that it would be difficult to generalise about the so-called democratising effects of Internet. What is emerging from the study is that the contexts are highly specific and dependent upon the individual. Just as in face-to-face meetings there are people who dominate and control the discussion, the same appears to be true for the Internet. Alleviating barriers in communication and status differences is clearly more of a social issue rather than a technological issue. It is dependent upon the social context, the culture, and on the social actors' goals as opposed to the technology *per se*, therefore to search for a technological solution to social inequality seems somewhat naive.

4.4 Efficient Conqueror of Time/Space Constraints or Productivity Inhibitor?

Rudy (1996) points out that efficiency, in terms of the time spent composing and transmitting a message, has received little attention in the CMC literature, and when it has been considered, it was deemed unimportant in terms of media choice (Lea, 1991). In contrast, the interview evidence suggests that reducing some of the time constraints of traditional communication was "one of the big plusses" of Internet-based communication. Several interviewees expressed the opinion that the Internet had contributed significantly in reducing some of the limitations of communicating with people operating in different time zones. Basically, it allowed people to work in one time zone while their colleagues in another time-zone were asleep, and vice-versa. This effectively allowed the extension of the working day to what is in effect a shift system. As well as acknowledging the speed and efficiency of

communication, some interviewees mentioned the reduced cost of communicating with people abroad via the Internet. It enabled them to maintain communication which they might otherwise avoid.

However, this perceived advantage is only of relevance to people who communicate with others that are geographically dispersed to the extent that they operate within a different time zone. Since the majority of interviewees tended to communicate primarily and often exclusively with people in the UK, this benefit was only acknowledged by a minority of interviewees. In contrast, one interviewee highlighted the time zone difference as a *disadvantage* in terms of network speed:

"The other thing that time zones do to us is that Internet access to the States becomes unusably slow after lunch".

However, had the interviewee lived in the States, she would have experienced a consistently slow response time. Indeed, for part of the day, she had the *advantage* of using the Internet whilst most Americans are sleeping. Thus, the efficiency of asynchronous communication, while undoubtedly useful to some people, is not universally useful to all. Clearly, the technical infrastructure needs to be capable of processing the traffic of data generated.

5. Conclusions

5.1 A Framework for Assessing Propensity for Internet Utopia and Dystopia

As already mentioned, the Internet has the propensity to result in both utopian and dystopian outcomes on a range of factors. As can be seen from the interview evidence, the manner in which each are realised depends on the contingencies of the situation. A framework is presented in Table 2 which illustrates the mediating factors which predispose towards utopian and dystopian outcomes on a range of aspects.

Utopian Outcome	Mediating Factors (the <i>existence</i> of these factors will predispose towards utopian outcomes, while their <i>absence</i> will predispose towards dystopian ones)	Dystopian Outcome
Infinite repository of specialist information	Adequate level of technical literacy to enable efficient search strategy Sensible filtering strategy to avoid overload of data Limited knowledge and expertise on specific topic	Overload of trivia

Communities and relationships liberated	Academic tolerance of extreme outbursts Well-focused hobby-related topic of discussion rather than work-related	Communication stifled and inhibited
Extended democracy	Low need to dominate and control meetings (regardless of media) Inhibited in regular face-to-face communication Anonymity viewed as safe and comforting	Domination by the few
Efficient conqueror of time/space constraints	Existence of contacts in different time zones and geographical locations Satisfactory technical infrastructure to cater for Internet data traffic volumes	Productivity inhibitor

Table 2 A Framework for Assessing Propensity for Internet Utopia and Dystopia

5.2 Implications of the Findings

As the findings of this study illustrate, rather than having a pre-determined course of direction, it is in the realities of organizational and social settings that technologies are diffused and implemented; these realities defy predictions based on the capabilities of technologies. The results from this study highlight the rich interplay of a variety of factors; it would be overly simplistic to assume that any one of these factors has predictable consequences for all concerned.

One of the major implications from the findings is that the visions of utopia and dystopia are not represented as two opposite extremes, simply different ends of the spectrum. The existing literature tends to present these as a dualism of opposing categories which are mutually exclusive and completely in contrast to each other. This dualism is not just oppositional, the paring also represents inequalities, in that utopia is considered the basic, more dominant element, whereas dystopia is a much weaker representation. There is a recurring tendency to focus on the utopic element of the two categories. However, based on the interview findings, it appears that such visions are more accurately represented as a duality, in that both viewpoints express a partial truth. When the Internet is viewed as a whole, there are elements of both utopia and dystopia and it would be a mistake to assume that one is correct and the other wrong. The two perspectives are not incommensurable, but

complementary and mutually interdependent. Both utopia and dystopia are better represented along a continuum, the dominance of either end of the spectrum depends upon the individual perspective, and an awareness of both ends of the spectrum offers a richer representation.

Essentially, these utopic and dystopic visions are variable, dependent upon a complex interaction of mediating factors. These factors are also variable for individual Internet users. Thus, for any given individual at a certain period of time, Internet usage could prove to be quite fruitful, whereas at other periods of time it could prove to be of little use. However, the factors that comprise this instance differ greatly. To assume that Internet technology represents utopia for certain groups of people and dystopia for others is somewhat simplistic, the manifestations of these visions vacillate according to the rich interaction of many complex factors.

It appears that the gentle shift from discussing the technological advance of the Internet to pronouncing its positive social benefits, is simply unwarranted. Nevertheless, this is not to imply that the Internet has sinister or socially malign effects. Apocalyptic visions of technology and its associated revolutionary effects, are dependent upon versions of technological determinism which should be resisted. Technological determinism, which focuses on the material characteristics of the technology, represents the most common explanations of either the negative or positive social effects of the Internet. This position presumes social effects occur regardless of the particular context within which people utilise the technology. Undeniably, both the utopian and dystopian visions are simplistic and monochromatic, yet they offer a useful means of identifying a variety of social possibilities.

To re-emphasise the point, the Internet, as a technological development, does not have pre-set social consequences that are predictable or universal. Rather it is a social phenomenon, shaped by the society producing it. The findings from this research study confirm that the Internet as a particular example of a contemporary information and communication technological advancement, is not following a rational, goal-directed path, but instead, it is shaped by social factors. More often than not, the consequences of Internet usage are situated at some point along the continuum; it is useful for some people for some of the time, for some particular purpose.

In conclusion, it appears that the consequences of Internet usage depend upon the social context. Technology does not occur in a vacuum, but takes place within a social matrix which interacts with society. A key issue is how to understand and appreciate the social opportunities offered by computerization without being affected by the simplistic visions offered by technological determinists. Therefore it is important to understand the social issues surrounding the technology whilst avoiding the seduction of romantic utopianism or the converse, Orwellian dystopia, both of which over-simplify the relationship between technology and social change.

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