

Telehealth in the UK: A critical perspective

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Abstract: This paper reports on the multi-layered research into telehealth in the UK conducted through a critical theory perspective. Telehealth is an umbrella term for health services delivered at a distance and, more specifically, over various telecommunication networks. The paper aims to offer an alternative perspective on telehealth, focusing on rationalities, knowledge claims and ways of legitimising telehealth. The paper concludes that there are competing and difficult to reconcile rationalities influencing telehealth, conflicting knowledge claims and no commonly agreed ways of legitimising telehealth.

Keywords: Telehealth, Information systems, Critical theory

1. Introduction

In healthcare, information systems are now expected to support goals of increased efficiency, effectiveness and quality of care. This is to be achieved by, for example, facilitating the move towards evidence-based medicine, monitoring performance, improving communication and co-operation between different organisations and professionals, and empowering patients (DOH 2000, DOH 2002, NHS Executive 1998).

New technologies and services – broadly defined as telehealth - are being implemented to support this vision. Telehealth is an umbrella term for health services delivered at a distance and, more specifically, over various telecommunication networks. This paper uses the term telehealth, rather than telemedicine, to highlight the diversity of services that can be offered (e.g. from remote surgery to monitoring systems or health information on the Internet), and the variety of settings in which such services are produced and delivered - in hospitals, doctors' surgeries, community settings and homes.

Since telehealth appeared at least 40 years ago, the majority of early projects did not survive the end of grant funding or trial financing (Darkins and Cary 2000, Perednia and Allen 1995). In the late 1980s and early 1990s there was a renewed interest in telehealth. Today, services offered include teleradiology, teleneurosurgery, telepsychiatry, transmission of echocardiographic images, electronic referrals, and video conferencing between primary and secondary healthcare providers. In the UK, the majority of services are provided by pilot, small scale projects (Klecun-Dabrowska and Cornford 2002).

The research into telehealth has been primarily concerned with technology and its performance, technical and to a lesser extent economic and organisational feasibility of

telehealth services, legal considerations and ways of evaluating telehealth. The majority of literature on telehealth reports on individual projects and often on this (limited) basis makes claims regarding benefits of telehealth. Alternatively, 'visionary' works make sweeping statements about telehealth and its potential for solving (all) shortcomings of current healthcare systems, particularly in terms of (immediate) access to specialists and medical knowledge. The proponents of telehealth point out its potential to contribute to more equitable healthcare reaching for example, geographically and socially excluded populations, to develop enhanced modes of service delivery for health, and to reduce or at least contain the escalating costs of healthcare provision. However, many claims regarding benefits of telehealth to healthcare professionals and, importantly, to their patients, are not well documented. The literature review suggests that research on telehealth suffers from methodological shortcomings and weaknesses in data, making it difficult to substantiate claims of its proponents (Hakansson and Gavelin 2000, Whitten *et al.* 2000).

The research reported here was undertaken by the author between 1996 and 2001. Although sharing many of the concerns voiced in the telehealth literature, this research sought to go beyond immediate and operational concerns and attempted to address fundamental assumptions about the nature and the role of telehealth, highlighting different rationalities underpinning telehealth. With this goal in mind a critical perspective was adopted, based primarily on the Frankfurt School but also enriched with more recent insights of post-structuralism, post-modernism and information society theories. The research also aimed to combine a local, situated study with a wider societal perspective. To this end a three-layer approach, spanning policy and strategy issues (macro layer), local strategies (community

perspective – mezzo layer) and individual projects (micro layer) was adopted.

The aim of this paper is to present critical analysis of telehealth in the UK, complementing the existing literature on the subject, and to provide an example of a critical study, still a rare occurrence in the information systems (IS) discipline. The focus is on different rationalities and knowledge claims underpinning telehealth and on legitimisation practices.

The paper's structure is as follows. It starts by outlining critical theory and its position on technology. It then presents an overview of the main findings, discussing concepts of telehealth constructed at national, local and project levels and relating them to wider, societal trends. This is followed by a discussion of the contributions of the approach chosen to developing a greater understanding of telehealth.

2. Critical theory

This section introduces the main tenants of critical theory relevant to this study. This introduction is necessarily brief as the paper's focus is on applied critical research rather than on theoretical discussion.

Critical theory is not homogenous and those who are classified as critical theorists did not present a unified front. Immediately, we can distinguish two different traditions concentrated around the Frankfurt School and more recent work of Jurgen Habermas. Also, Foucault's works are often seen as belonging to both post-structuralist and critical schools (Olssen 1996).

Critical theory rejects the tenet of traditional science that the researcher needs to take a role of an uninvolved observer and his or her work should be free of value judgement. Meaning, in the critical tradition, defies the positivist imperative of reducing it to structural variables. At the same time, by referring to normative values, it goes beyond relativist interpretations. The central idea in the critical perspective is that all social phenomena are historically created and conditioned. Social conditions, often constraining emancipation and limiting one's potential, are created and recreated by man. They cannot be easily changed because they are related to structures, which are historically constituted. Nevertheless, critical theorists aim to support people in the realisation of their potential and, through altering dialectic relations, influence

structures that limit them (Horkheimer 1972a [1944], Horkheimer 1972b).

Critical theory comes under criticism from two corners, those who in principle agree with the main tenets of the theory but dispute some of its aspects or omissions and point out difficulties in its application, and those who dismiss critical theory altogether. The most fundamental criticism – and something we would not even consider refuting here – denies the notions of subjectivity and values in social investigations and instead considers social sciences to be (or at least should be) objective and neutral.

Others accuse critical theory of elitism, departing from its Marxists roots, overplaying the notion of human autonomy and consciousness, or point out difficulties in translating its principles into actions. We discuss these points and their refutations in Klecun-Dabrowska (2002a). Here we only highlight what we consider the most substantial criticism of critical theory, that is questioning of fundamental assumptions behind critical theory's claim to provide a rational grounding for its normative standards. This is because these standards are based on knowledge, and knowledge is interlaced with power (Foucault 1980, Lyotard 1984). This implies that the concept of emancipation cannot be unified and made coherent, or may itself become oppressive (Bauman 1993, Kincheloe and McLaren 1994).

Although acknowledging these problems, we argue that critical theory rejects totalities and dogmas and encourages reflexivity, even if it does make an appeal to some 'intuitive' normative values. Undermining those would lead to absolute relativity, when there is no good or bad – just different interpretations. Furthermore, the break with meta-narratives, proposed by post-modernists and post-structuralists, should lead to more, not less, critically aware works. When we accept that the old meta-narrative of class or economic emancipation no longer serves as the master narrative we can complement it by emancipation narratives of feminism, eco-warriors, human rights groups and other movements. Furthermore, the post-structuralist focus on localities does not make invalid grand critical projects, but rather illustrates the need for researching contextual specificity of the local, as well as larger organisations and structures.

Thus we believe that critical theory offers genuine insights into human condition and that it can be enriched by more recent theories. When considering what it means to be 'critical' in IS research, the researcher agrees with Brooke (2002) that it is the emancipatory interest rather than the detailed following of any one particular theorist that is important, providing that the underlying theoretical values and assumptions are explicated and, we would add, providing they are not incommensurable.

3. Critical theory and technology

Our assumptions with regard to technology, including ICT are rooted in critical theory position that sees technology not as autonomous but as an instrument of social control placed in the hands of the 'vested interests' which control society (Feenberg 1991, Marcuse 1970).

Critical theory argues that technology is not a thing in the ordinary sense of the term, but an "ambivalent" process of development suspended between different possibilities. This "ambivalence" of technology is distinguished from neutrality by the role it attributes to social values in the design, and not merely the use, of technical systems. On this view, technology is not a destiny but a scene of struggles. It is a social battlefield, or perhaps a better metaphor would be a *parliament of things* on which civilization's alternatives are debated and decided. (Feenberg 1991 p 14)

Elaborating on this statement we suggest that technology embodies values and norms of its designers and sponsors (as, for example, illustrated by social constructivists) but these do not come into play until they are drawn upon in use, and then they (and the technology) can be re-interpreted (Woolgar 1996, Orlikowski 2000). Yet, we are not free to assign any interpretations to technologies, as we are bounded (to a greater or lesser extent) by their characteristics, by organisational context, by wider economic and political interests, and as critical theorists would argue, by our own consciousness. Often technology appears if not autonomous then at least self-augmenting (Ellul 1964, Winner 1977). Yet, critical theory contests the notion of inevitability and leads us to realise that we are conditioned to accept a techno-economic regime.

Critical theory is not specifically concerned with ICT and many, even contemporary works remain vague on this subject. In the field of information systems the call to follow emancipatory principles of critical theory have

been explicitly voiced by a growing (although still somewhat limited) number of researchers (Doolin and Lowe 2002, Hirschheim and Klein 1989, Hirschheim and Klein 1994, Jonsson 1991, Lyytinen 1992, Lyytinen and Klein 1985, Myers and Young 1997, Ngwenyama 1991, Saravanamuthu and Wood-Harper 2001, Wilson 1997) and others. The majority of papers draw on Habermas theories, although there are calls for broadening this interest (Brooke 2002). Lyytinen (1992, p 171-172) presents general requirements for critical IS research:

In order to move from fragmentary critical IS research to systemic 'praxis'-oriented research, future studies should change their goals and research content. The inquiry needs to shift from critique into more concrete and problem-focused studies of the implications of Critical Theory for IS. The studies should incorporate several dimensions into the analysis of computing in organizations: totality/concrete situations; lifeworld/system structure; current status and evolution/history etc., associated with an understanding of, and focus on, ideology criticism (for example detailed description of instrumental reason) and emancipation. [...] In this research model, critical inquiry is concerned with the improvement of the human condition through IS, criticism of alienated and distorted practices, development of alternative IS forms and organizations, and with finding and enclaving an arena for emancipatory IS activity.

Yet, despite this call and an increasing interest in critical theory in the IS community, there are very few papers describing actual applications of critically led projects, with exceptions including papers by Waring (1999), Howcroft and Wilson (1999), Myers and Young (1997), Oliver and Romm (2002), Cecez-Kecmanovic et al. (2002) and McAulay et al. (2002).

4. Research approach

Critical theory is eclectic with respect to the use of techniques of investigation (Morrow and Brown 1994). However, somehow the gap between philosophical foundations and practical research must be bridged. In this study, the research methodology was based on hermeneutic inquiry within a normative framework. Hermeneutics was treated as a research method rather than a theoretical approach (it can serve as both). The researcher followed the hermeneutic circle of understanding (Gadamer 1976) when conducting the analysis of UK policy and

strategies documents and empirical research. The hermeneutic circle expresses the need to understand the parts of a text through the understanding of the whole, while the understanding of the whole is determined by our understanding of its parts. The process of reading and interpreting is not finite; there is no definite point at which our understanding becomes complete. Thus, a number of readings were conducted within different circles. Each document or interview transcript was considered as a whole and its sections as parts. However, the 'whole' was also understood as something much bigger. The policies, local initiatives and projects themselves were considered in the light of the health and medicine debate, other national and international policies, political discourse, and general trends in the society.

The empirical study was based on critically-interpretative and exploratory case study of interrelated strategies, initiatives and telehealth projects in South London. Qualitative research methods were used, including largely unstructured interviews and when possible direct observation. A number of public forums (discussing issues around health, ICT and the local population's needs), local and national workshops and project specific meetings were attended. In total 43 people were interviewed, mainly healthcare professionals and researchers, those involved in telehealth projects, representatives of local government and the Telemedicine Policy Team.

5. Telehealth in the UK: Competing rationalities and legitimisation claims

Having described the research process, this section briefly outlines some of the research findings. These are necessarily very general and a more detailed description can be found in (Klecun-Dabrowska 2002a). Our aim here is to highlight main themes and controversies.

We start by situating telehealth in the context of recent trends in healthcare. In the field of medicine scientific rationality has become dominant in the last century (although never totally eradicating other rationalities). The focus has shifted from caring for the person to curing the disease. Nevertheless, at least in the last two decades, the scientific rationality has been challenged by changing understanding of health and illness. The debates about new models of care based on notions of health, wellness and holistic model

of care have permeated societal and policy discourse.

However, these developments do not necessarily constitute a major shift in practice. Moreover, the implementation of ICT-based systems and services, including telehealth could be perceived as a continuation of the process of managerialist rationalisation that has permeated healthcare provision in the western world in the past half century. This process can be seen, for example, in the long history of reorganisation of the UK's National Health Service (NHS) and in the recent trend towards evidence-based medicine (DOH 1997). Critics see this process as going further, as a medicalisation of peoples' problems, people themselves, and the services that they are offered (Hillier 1987). For example, Cribb & Barber (1997, p 298), discussing drug-prescribing practices, suggest that "The biomedical paradigm does not only dominate in research, but is also employed to frame policies and guidelines."

In the UK's policy ICTs are often given a transformative role and telehealth is increasingly understood and projected as being able to re-shape the way health care is delivered; remotely instead of person-to-person, in home rather than in hospital, to groups rather than to individuals, and across traditional institutional boundaries (DOH 1997 1999, DOH, 2000). Yet this transformative role is perceived firmly within boundaries of long-established goals, particularly of providing care regardless of people's social class or geographical location. Understood in this way, this role fits in well within the overall discourse of social responsibility and community values present in the policy documents.

Such a discourse then implies that telehealth can develop within a framework of actions aimed at combating social exclusion, increasing social cohesion and bringing better health care to the worst off. In policy documents ICTs are explicitly depicted as means of (positive) social control. Telehealth is then not only seen as medicine or a medical technology or even as a clinical practice but as a societal and community service.

Yet, the policy documents give rise to other expectations too. The intertwined managerial discourse directs attention to efficiency and effectiveness. This means that the role of telehealth is seen additionally, or perhaps most importantly, as helping to contain costs of healthcare.

The policy papers imply that these different roles can be reconciled and that telehealth can provide better and at the same time more cost efficient services. Yet, this may not be so easily achievable and one of the discourses, probably the managerial, may exert a dominant influence on the developments in telehealth.

Furthermore, a number of authors note that information systems not only acquire meanings within a managerialist discourse, but may also in turn reinforce the trend towards managerialisation (Bloomfield 1991, Doolin 1999a, Doolin 1999b, Ferns and Mowshowitz 1995). In this vein, telehealth too is expected to subtly alter medical practice, e.g. by facilitating the practice of evidence based medicine (through access to on-line information resources and introduction of protocols). Such changes are promoted by the government as positive, as setting standards, increasing (and equalising) levels of performance and identifying poor performance. Yet, as critical theory invites us to consider, technologies and technological systems may have less welcomed effects. Thus they may lead to increased rationalisation of healthcare,

stifling innovation, artificially standardising treatments and assessments of performance (without taking into account local conditions and situated rationalities) and thus limiting professional freedom. We could imagine rationalisation of healthcare expanding towards rationalisation of our *lifeworld* (to use Habermas' expression), for example in the way the elderly and fragile are being cared for. To the degree that this is the case or becomes the case, telehealth would then serve a health service dominated by techno-economic rationality.

However, in addition to the managerialist discourse there are other potentially counter-active powers, e.g. of healthcare professionals. Thus, managerialist-driven applications of IS are resisted by the medical profession and often fail or are re-interpreted (Doolin 1998, Doolin 1999a). Thus different discourses and interests (uncomfortably) co-exists, without achieving total dominance.

The figure 1 below summarises, in very simple terms, different meanings of telehealth that arise from different trends.

Concordist	Antagonist
<p>Trends Discourse of social responsibility & community values; health prevention, primary care-based & patient-centred services; patient empowerment</p>	<p>Trends Managerialist discourse; 'reform' agenda with focus on efficiency & effectiveness; limited resources</p>
<p>Meanings (roles) of telehealth Improving healthcare & making it more equitable (fighting geographical & social exclusion); Empowering patients & professionals; Supporting communication & co-operation between different groups & organisations</p>	<p>Meanings (roles) of telehealth Enabling financial control (e.g. monitoring budgets); Enabling clinical governance (e.g. enforcing standardisation); Shifting power relations and responsibilities; Technical solutions to save money</p>

Figure 1 Meanings of telehealth

In our study of projects in South London we wanted to see if local rationalities reflected these trends. We investigated a number of different projects in the area; four at a greater depth: (1) a telepsychiatry service allowing consultations to take place in a family doctor's practice linked to a hospital-based consultant via teleconferencing equipment, (2) an early pregnancy assessment unit with a telemedicine link for ultrasound scans and teleconferencing to hospital consultants, (3) web-based information and limited interactive

services for people with mental health problems, (4) SeaHorse project utilising the potential of ICT (e.g. the Internet, CD-ROM) for supporting people with HIV/AIDS and facilitating collaboration between carers. We noted that these projects did not seem to follow exclusively or narrowly techno-economic or managerialist rationality. They did not focus on cost-efficiency, managerial control or even techno-medical solutions. Rather they seemed to support models of care based on a holistic understanding of 'wellness', framed in social

rather than purely medical terms, and are often aimed at serving socially excluded groups. The first reading of the projects indicated that the overall aim to which telehealth was employed was to improve the health of the population. However, as in national policy papers, in local strategies and project reports telehealth was conceptualised as largely unproblematic.

Our subsequent interpretations or 'readings' of the projects gave hints of sometimes conflicting interests or approaches adopted by different stakeholders, their struggle to find common meanings, constraining structures (e.g. the organisational culture, legal matters or lack of funds and skills), and different ways in which the notions of empowerment and social exclusion are perceived and acted upon.

The projects studied alleviated some of aspects of social exclusion (of individuals, patients groups or healthcare workers) in terms of access to information or services, and to a lesser extent, opening new communication channels, and forming self-support groups. However, not always the processes of exclusion were adequately addressed. Furthermore, the interpretation of the projects in the context of financial pressures faced by the NHS and the social services implies that eventually such services may be seen in terms of 'saving costs' and that this can only be achieved if traditional services are reduced.

Similarly, we must be wary of the empowering claims attributed to different technologies. The projects discussed suggest that telehealth can be used towards empowering patients, citizens and healthcare workers but also that technologies can only play a small part in the process of self-empowerment or self-emancipation. The projects' claims regarding empowerment of patients/citizen seemed to be overstated. Also, sometimes 'empowerment' can mean unwelcome shifts in responsibility and workloads and privileging one group over another. Thus, empowerment (and emancipation) cannot be seen in absolute terms and there are many competing, situated rationalities.

What is interesting from the critical perspective, is that the projects were bottom-up, reflecting aspirations of critical theorists of post-modernist era (Bauman 1993) promoting emancipation as a local and situated concept. The projects' evaluation practices revealed how difficult it is to evaluate telehealth projects and that an assessment of societal aspects, as well as in terms of social exclusion and

empowerment, is particularly challenging, and often left undone. Evaluation, if done, is often limited to patient satisfaction studies and technical performance of the system.

Evaluation of telehealth is a hotly debated subject. Often, seeing telehealth as a 'drug' or medical technology means that legitimisation is sought through the strongest medical approaches, including randomised-controlled trials (RCT). One of our interviewees saw RCT as a way of protecting the public against techno-managerialist rationality and vested interests of commercial suppliers. While another suggested that in some cases RCT seem more motivated by a desire to achieve credibility in the medical community than belief in the value of findings.

Although in the contemporary context the medical dimension of telehealth is perhaps the strongest, telehealth may also be conceptualised as an information system in the context of organisational transformation, and this implies a need for different a type of evaluation (and legitimisation). In the information systems discipline the dominant scientific / engineering rationality has been challenged by interpretive (and to lesser extent) critical perspectives. Much of the discussion about evaluation has evolved around the appropriateness of 'scientific' methods, e.g. cost-benefits analysis, return on management or return on investment. It is increasingly acknowledged that information systems are socio-technical ensembles that need to be evaluated in their organisational (and situated) context and that the process of evaluation itself is political.

Similarly, within the area of telehealth some researchers suggest undertaking evaluation of telehealth projects in their normal settings (rather than under laboratory conditions), using qualitative methods, and focusing not only on the clinical or therapeutic outcomes but also on changes to work processes, institutional structures, and the doctor/patient relationship (Heathfield *et al.* 1998, May and Ellis 2001, McDonald *et al.* 1997).

Critically-led evaluation appears to be missing although a societal/community dimension of telehealth is often acknowledged. Yet, we cannot stop asking: what sort of health service and, more generally, society would telehealth encourage and re-enforce? Would it support the view that health care is a public good or alternatively a private commodity? Ultimately, will it support caring society, based on human

contact and social inclusion, as well as individual and community empowerment, or will it further extend the hold of instrumental reason, increasing alienation, and distorting the concept of individual choice and empowerment to mean commodification of health and information?

This study suggests that telehealth will always have not one but many ambiguous meanings and 'consequences', and the 'transformation within' of telehealth technologies will always be a difficult process of negotiating between conflicting aims and vested interests, and constrained by existing structures (e.g. organisational boundaries or budgets). Many of the issues concerning telehealth mirror wider debate about information society, e.g. centralisation versus decentralisation, devolution of power versus control and standardisation. Nevertheless, our findings suggest the need to contextualise telehealth and place it within people's and communities working practices and daily lives, as well as within wider reforms striving towards (some form of) emancipation.

6. Conclusions: Contributions of the critical approach to our understanding of telehealth

Having presented our findings, this section considers if and how critical theory contributed to a (better?) understanding of telehealth, or more generally: What does critical theory bring to the research of telehealth?

A critical approach, of course, requires emancipatory intent. This is what primarily differentiates it from an interpretive research. This is important, as although norms and values are not absolute and often controversial, this does not mean that we should adopt a totally relativist perspective and abdicate any social responsibility. However, the problem is that emancipatory intent does not always lead to emancipation. For example, this study cannot claim to have changed the world. Nevertheless, as critical theorists would argue, emancipation arises from enlightenment. This research, we suggest, leads to (some form of) enlightenment as it challenges common perceptions about telehealth, for example by revealing different rationalities underpinning telehealth, and conflicting legitimisation processes.

Critical theory contests the notion of inevitability and illustrates how we are conditioned to accept a techno-economic regime and believe alternatives to be

unrealistic. In depicting the existence of different rationalities we have hoped to show that alternatives do exist. Telehealth technologies are not simply autonomous but they are socially constructed (through often interrelated actions on macro and micro levels), and thus can be potentially directed (in their development and use) towards emancipatory aims.

In addition to emancipatory intent, a critical approach makes the critique of existing knowledge claims an explicit requirement and focuses the researcher on this task and thus it *may* lead to insightful results, i.e. insights that question taken for granted assumptions (held by others and the researcher himself/herself). For example, this research questions the simplistic notion of telehealth as a 'savour' (particularly in relation to claims about empowering and socially inclusive potentials of telehealth, and its ability to deliver better care at lesser or same costs). It also shows how evaluation was used as a way of legitimising telehealth (e.g. in some cases it was primarily done for legitimisation reasons) and how it can be used as an argument/weapon in a battle of different vested interests and rationalities (e.g. 'scientific' evaluation was seen by some as guarding the interests of patients and opposing decisions driven by managerialists rationality or commercial interests).

Furthermore, a critical approach encourages self-reflection and the researcher was spurred to question her own assumptions and reflect on the research process. The research suggests opportunities for future inquiries. For example, a more user (particularly patient/citizen) centred approach to telehealth-in-practice would deliver a more situated analysis. Further analysis of telehealth through the notion of power may lead to additional insights and complement this study. This is because, knowledge, as Foucault would argue, is interlaced with power. Similarly, different rationalities are built and sustained through power relations.

The field of telehealth and more generally health informatics is exciting, ever-changing and driven by many competing rationalities and thus, we would argue, particularly suitable to conducting critical, applied research.

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