Understandings of Technology in Community-Based Organisations: A Structurational Analysis

Larry Jeffrey Hirsh Stillman

Bachelor of Arts (Honours) (University of Melbourne)
Master of Arts (Hebrew University of Jerusalem)
Artium Magister (Harvard University)
Certificate of Advanced Graduate Studies in Higher Education Administration
(Northeastern University)
Graduate Diploma in Evaluation (University of Melbourne)

**Thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy**

**Faculty of Information Technology
Monash University**

October 2006

Contents

iii

Abstract

This thesis is a study of the understandings of technology in the lives of community workers in Neighbourhood Houses, a type of small community-based organisation. Through the examination of structuration theory and various theories of technology, it demonstrates the significance of particular normative frameworks to workers in forming attitudes about how common personal computer technologies and the Internet are utilised. Interviews were analysed via a Grounded Theory methodology to generate new conceptual frameworks.

The thesis also studies the transmission of personal and institutional values and frameworks across time and space as a means of understanding the significance of such cultures in the life of local communities, particularly when the focus of activity is closely linked to women's home-based responsibilities.

Information and communication technologies (ICTs) in community settings can be reconceived as an agent embedded in complex sets of support, teaching, community development and home-based relationships. This basket of processes and skills can be conceived of as 'technologies of care'. While the artifactual technologies and their genres such as email that were investigated for this study are commonplace and relatively simple systems (personal computers, Internet), they are part of complex, and extended systems of action, knowledge, information and support that reach into local communities and the home. The human dimension is invariably raised as a key factor in the use of ICTs. ICTs are only one (but important) element in the networked process which brings about better lives for people.

ICTs are therefore regarded as useful tools with an attractive agency, for the pragmatic communication possibilities they offer, rather than a discomforting adjunct to work or home life. ICTs by and large have been 'domesticated' by women uses, nor are ICTs to be conceived of as controlling human agency. The spectre of domination by Foucault's capillaries of panoptical power is not has not been achieved. Such a socially-networked or embedded, yet relatively autonomous communicative artifact can be distinguished from the administrative use of technology that is also an adjunct to more formal systems of governance. By and large, if technology is trusted and reliable, then it can be incorporated into everyday life. While ICTs, particularly in relationship to administrative responsibilities can appear to have strong agency, this is a controllable, and is rationalised as an essential, and ordinary, part of the process of work activity. This explains the interviewees' lack of apparent concern about power imbalances in technologically-constructed relationships at home or work.

It is important to recognise such localised and situated understandings if there is to be stronger theoretical and productive policy response to the effective use of ICTs by community-based agencies as they increasingly use ICTs for work with clients, internal management, and communication with other agencies, businesses, and government.

Statement of Originality

I hereby certify that this thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution. I further certify that to the best of my knowledge, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

The thesis does not exceed 100,000 words in length, exclusive of tables, maps, bibliographies, appendices and footnotes.

Larry Stillman
28 September 2006

Acknowledgements

The genesis of this thesis lies in experiences I had nearly 15 years ago with Mark Samuel-King in a Neighbourhood House, and many long discussions with him since then. We were concerned about the relationship between ideology and action, and to paraphrase Samuel Johnston when he spoke of lexicographers, that research would not just be 'a harmless drudge' but something resulting in social good.

My experiences in community work also inspired me to go back to university and obtain a qualification that dealt with the real world instead of antiquity. Many thanks to the Centre for Program Evaluation at Melbourne University for helping me to begin to think in a theoretically rigorous fashion about the nature of action, inaction, and knowledge in institutional environments.

Other formative experiences significantly contributed to the development of this thesis, including the friendship I formed a decade ago with Randy Stoecker (then in Toledo, Ohio, now in Madison, Wisconsin), when he found me on line because of a rather inflammatory neighbourhood webpage I had put up on VICNET. Randy was coming to Melbourne for meetings of the Community Development Society, and was looking for 'activists'. Well, he met me, since then, Randy has been a colleague and friend to many, enlightening us about

what can be done through engaged social research that talks *with* and not *at* people.

Through working at VICNET, I saw how complex a middle-sized organisation can be, and particularly, just how difficult it is to integrate principles of social action and change which use technology, based in a major, and extremely conservative cultural institution. Yet many of us there were privileged enough to be allowed by people such as Gary Hardy to innovate and implement our ideas. To him, and other colleagues there, thank you.

It was another privilege to be invited with Gary to spend time at Monash to establish the Centre for Community Networking Research. Both he and particularly Don Schauder share the credit for having the wisdom, foresight and gall to get the funding to underwrite such activity at Monash University. And even more so, I thank Don and for making it possible

study. You may not be aware what a new and special experience it has been to enter into your own spaces, question you, and be allowed to use that for academic purposes. If only more institutions, and particularly government, with its duty of care, had the same concerns about people like you do, and listened to such a knowledgeable and skilled group, Australia at least, might be an ever better place. I feel that I know you, and treasure that confidence. So in Neighbourhood House terms, a warm and fuzzy hug!

To friends in Melbourne, and family here and in the USA, more thanks. To Viv Burstein in Jerusalem—just for being a friend and supporter for nearly 30 years, a special word of thanks!

To Les Rosenblatt, comrade and cousin, your volunteer editorial comments and heroic proofreading earn you extra status in our interesting familial network, itself a study in trans-generational structuration. To Cathie Pilbeam, a million thanks for expert work with formatting and abstruse aspects of Microsoft Word.

Finally, and especially, to partner Nancy, son Alexander, and of course feline Jake, how any of you could bear being around me during these obsessive years, I do not know. So all my love!

Figures

Tables

Abbreviations

ANHLC   Association of Neighbourhood Houses and Learning Centres

ACFE   Adult, Community and Further Education programs

CBO   Community-based Organisation/s

DHS   Department of Human Services

ICT   Information and Communications Technology or Technologies

IT   Information Technology or Information Technologies

TAFE   Technical and Further Education Sector

References to interviews are to be interpreted as referring to Interview Number and line references [Interview: line reference/s]. Particular person names or other identifiers such as place names are usually substituted by an em dash (—), and breaks or the removal of irrelevant or unclear data are indicated by …

Part I: Research Review and Methodology

This part of the thesis provides a justification for the study of ICTs in small community organisations and in particular, the study of Neighbourhood Houses. It provides a review of current policy and research about the role of community organisations in community and social development, as well as their adoption of ICTs. The Grounded Research methodology is discussed and its relationship to the Monash Information Continuum. The characteristics of community-based organisations are reviewed, and various perspectives from the field of community development and welfare are discussed, in order to contextualise a broader understanding of the concept of technology in the community setting. In particular, technology is to be understood as a process which incorporates knowledgeable human practices and skills in conjunction with artifacts (such as ICTs). Structuration theory as developed by Anthony Giddens and modified by a number of other scholars is reviewed, in order to present a means to analyse and present the process of organisational reproduction in community-based organisations across time and space, as reflective of the ongoing agency of humans and artifacts in the era of electronic communication. The problem of order in sociological thinking is also reviewed in order to develop a more sensitised approach to understanding human agency and interactions with technology. All this is used to present a view of community-based agency in which ICTs can be considered to be a part of a whole cycle of reproductive activity in Neighbourhood Houses, summarised as 'technologies of care'.

1   Introduction

Communities and technical life

How do people in small community-based organisations (CBOs) use the Internet[1] and common PC-based technologies such as those used for word processing and spreadsheets or other technology such as mobile phones? How do they understand the place of such technology in work and other aspects of their lives? Why is it important to know these things? This thesis looks at workers in Neighbourhood Houses, a type of community-based organisation, to solve some of these questions[2].

Community-based organisations are just that: organisations based in, and serving their communities, and thus, at the micro-level of individuals, families, networks, and communities, they contribute to basic social fabric and infrastructure. Many of these organisations work entirely from a voluntary base or a mix of paid and non-paid labour to delivery a range of social and informal educational support programs and are an essential part of the support network in many communities. They provide a linkage between both the private and public spheres of life (see also p. 71). Governments see them as a means to connect locally as instruments of social policy, including activities involving the Internet (Meredyth, Ewing et al. 2004).

At a macro-level, community-based organisations can be considered to be part of the matrix of non-government and non-business organisations that make up what is increasingly called 'civil society'. Civil society is seen to be characterised by 'shared democratic values and resources' which intersect with, but are distinct from business and government interests (Australian Roundtable on the Civil Society 2005: 15). The relevance of ICTs to the development of civil society is of interest at the highest levels of international policy—the

---

[1] For the sake of consistency Internet (upper-case I) is used, even though increasingly, lower-case internet is used. Historically, the Internet is the network of computers linked by TCP/IP protocols and networks, which allows the graphical interface World Wide Web (WWW) and other applications such as email to work. A lower-case internet is in technical terms, any two connected computers.
[2] Monash University Standing Committee on Ethics in Research Involving Humans Ethics Approval 2004/174 and 2004/638.

United Nation's World Summit for an Information Society, for which a number of Australian civil society contributions have been developed by the Centre for Community Networking Research, based upon national 'Roundtable' consultation processes. Community-based organisations, at least in Australia, are showing strong patterns of uptake of Internet technology, in common with many other small businesses, though cost and lack of access to broadband inhibits the uptake of fast connections (Centre for Community Networking Research 2003; Australian Bureau of Statistics 2006).

However, while statistics paint a broad picture of uptake and patterns of use, what technology means and contributes to the life of a community though its organisations is not well-documented in research literature. Indeed, the meaning of 'community' is one the most difficult questions in sociology, reflecting the difficulty of defining and understanding the relationship between the private and public spheres of life, such as those found between individuals, their families, extended social networks, and the local physical community, as well as broader community and societal connections and relationships, the stuff of long-standing debates over *Gemeinschaft* and *Gesellschaft* (Tonnies 1970). The difficulty of agreeing just what constitutes a community impacts upon any study of human action, including the study of deeply embedded technology in communities.

Traditionally, community has referred to some form of formal or informal association between people in discrete geographic areas such as neighbourhoods, villages and towns, even though the social transformation brought about by industrialisation and new forms of communication in industrialised countries over the past century or more has been extraordinary (Warren 1972; Abercrombie, Turner et al. 2000: 65). Furthermore, community-based organisations, such as Neighbourhood Houses, the focus of this study, are located in geographic communities and their staff and participants work at improving the lives of people in their communities. Yet increasingly, the concept of community has taken on a virtual tone because of the impact of Information and Communication Technologies (ICTs), and the potential they offer for communication and action in new ways in the context of larger, institutional, and extended relationships. Local community, in the interests of efficiency, at least notionally, can be 'skipped', in preference for other

forms of interactivity and social connection. The accuracy of that assertion needs both empirical study and theoretical development.

Stoecker suggests that one useful definition of the concept of 'community' is that community is self-defining: it can be 'the people with the problem' (Stoecker 2005b: 45-46). If we accept that organisations such as Neighbourhood House are dealing with a problem—the building of community strength and capacity— then this study has emerged out of a concern about how common technologies such as PCs and the Internet are used in community-based organisations to help those organisations with their localised 'problems', such as supporting clients with accessing information, education, or community development.

However, how to even study a local (and virtual) 'community'—primarily through the window of the knowledge held by its people and institutions—has long been a controversial issue in sociology, 'because there is no way to disentangle the research method from the investigator himself (sic)' (Vidich, Bensman et al. 1970: 345). The classic participant observation studies of communities in their natural setting such as *Middletown* or *Street Corner Society* relied upon the skills of the researcher as research instrument, in contrast to the positivist development in social science which put an emphasis upon quantitative methodologies, administered at a remove from community engagement and participation (Lynd and Lynd 1956; Whyte 1966). More recently, the use of Grounded Theory in the study of a new housing estate in a growth corridor of Melbourne—a region with many similar characteristics to those described in my interviews—has demonstrated the potential for using people's own words to generate important new understandings of everyday life (Richards 1990). Thus, even while a quantitative study can statistically demonstrate evidence about a particular issue, the human quality of what it is to be alive, the rich picture that emerges in engaged research, can be entirely lacking. Social research with an ethnographic edge has a touch of typifying fiction[3] tempered by the historian's attachment to facts.

---

[3] See the remarks on Dickens, p. 233.

In the spirit of engaged research, a Grounded Theory approach has been used to bring forth something of the richness of the knowledge held by community workers to researchers in the field of technology. In addition, an adaptation of structuration theory as developed by Anthony Giddens has been used to bring to bring community understandings of ICTs into a broader theoretical framework. The great challenge has been to bring this method into a theoretically equivalent dialogue with discourse about both the meaning and purpose of Information and Communication Technologies (ICTs) in local communities.

A more complete understanding of what has been called the 'user' (and associated 'user needs') as a 'social actor', influenced by, and participant in complex social structures is a recognised desideratum in Information Science (Lamb and Kling 2003). ICT research has had a generally 'thin' capacity to incorporate the effects of human agency and autonomy and social complexity, including the effects of disadvantage, gender, and very different values on people's capacities to work with technology. Salvador and Sherry, on the basis of their ethnographic work for Intel Corporation, speak of the need:

> To attend to the details and to attempt to enliven the lived experience in such a way that it can be "felt" by engineers who are inventing and designing technologies; and it is increasingly important as employees are further removed from the locales for which they may be designing. The vast majority of engineers, marketers and management in multinational corporations simply do not have an intuitive understanding of these locales. They are far from each other – in physical, social, cultural, symbolic and emotional distance. If there must be a "digital divide", it might make more sense and be far more useful for everyone if we were to redefine the divide as a lack of corporate intuition, understanding and empathy for the majority of the planet, than a characterization of haves and have-nots. (Salvador and Sherry 2004: 83)

Of course, it is not just a matter of enlivening the experience of reality for engineers, but for managers, decision-makers and the workers themselves, about what technology is and does in everyday working life. This study is consequently intended to provide insight in at least one case, via the exploration of the 'lived experience' community workers.

The thesis also contains in Appendix B, the text of a paper written with Barbara Craig of Victoria University, Wellington NZ. This paper is the outcome of a field trip to New Zealand in early 2006, funded as part of the PhD research. I had intended to conduct a

series of comparative interviews with community workers with the intention of seeing if the frameworks I had been developing in Australia were comparable to New Zealand. In fact, the trip raised a series of different and provocative issues about a very different understanding of the world—an ontology—that exists for some New Zealanders, and how this affects, in turn, their interpretation of technology. While elements of structuration theory underlie the paper, it focuses more on outlining practical and theoretical challenges for Community Informatics and Information Systems in engaging with cultural and social diversity.

Background

The background to this thesis lies in many years of personal engagement with community-based organisations, including their encounter with the Internet and the opportunities and constraints that it offers, particularly during periods of employment in the previous decade in research and community development positions at the Victorian Association of Community Information Centres (Citizens Advice Bureaux) and at VICNET, the community Internet provider, at the State Library of Victoria. Excitement over the possibilities for community technology synergies also bubbled over at community networking conferences, in which I played a key role, held between 1997 and 2002.

Over the years, I assumed that it was just a simple matter of influencing people and their organisations, to go down the 'correct' technological path as part of their community and social development activity. However, technological enthusiasts (including myself at times), seemed to be far ahead of the capacity of community workers and volunteers to take advantage of what seemed to be the 'obvious'. I failed to acknowledge the salience and complexity of personal beliefs and skills, as well as organisational culture and politics, and how that reacted to what appeared to be logical and simple technological solutions.

The opportunity arose, through working at the Centre for Community Networking Research, Monash University, to more fully engage in researching the nature of community-based organisations' interactions with technology. While the study could have taken a broader approach and sampled a more diverse range of community-based organisations, through professional connections I was able to relatively easily set in place

connections with a particular type and network of community and neighbourhood organisation, Neighbourhood Houses. This provided the opportunity for working with a known quantity and using that as the basis for an in-depth study. I knew that many of their workers were deeply involved with Information and Communication Technology from a work and community education perspective, and this of itself appeared worthy of study. The study also appeared worthy because Neighbourhood Houses were also the subject of government aspirations and investment in public Information and Communication Technologies, and they were thus also interesting from a public policy perspective. A test case for such focussed work came during the literature review stage of this thesis, with a small scale research project known as *Empowerment for the West*, conducted with Randy Stoecker of the University of Wisconsin (see p. 30). The study involved an assessment of immediate technology needs of Neighbourhood Houses in the western suburbs of Melbourne. The report, while still unpublished, has been circulated and has been influential at a policy level, and in addition, has been used by Neighbourhood Houses in various advocacy and funding submissions. The report established some very useful recommendations about infrastructure support, based upon a small-scale survey and focus group work with Neighbourhood House coordinators. The recommendations included:

- The need for professional development programs and training in computer troubleshooting.

- The need for jargon-free, accessible and timely IT support in person or by phone, possibly through resource pooling by Neighbourhood Houses.

- Neighbourhood Houses need access to a variety of resource directories. This includes directories of local resources, city-wide resources, and even client resources.

- A reassessment of web-based presences. Few Neighbourhood Houses have the time and resources to maintain their own web sites, and indeed, the need for websites for all is questionable.

- Neighbourhood Houses are concerned about the 'downloading' of communication costs from government and other funders. Houses needed to be appropriately resourced, or other forms of communication made available.

- Communication channels with different levels of government need to be improved.

Such desiderata are probably familiar to many who work with community-based organisations, particularly because skills and resources are always at a premium. It appears, at first glance, that a solution to such infrastructure needs would solve the 'problem'.

However, the recommendations also hinted at a number of themes raised by the thesis, though this was not apparent to me at the time. Our interviews with the Neighbourhood House coordinators did indicate a frustration with the lack of understanding by outsiders, particularly funders and policy makers in government about what Neighbourhood Houses actually *do* and what their work *means*. The research conducted for this thesis explored this issue in much more depth, taking the point of view of community workers as active, skilled, and very knowledgeable people.

Thus, what community workers—and particularly women workers— 'actually do', in relatively small organisations, at least from the perspective of how they view and use ICTs, is closely explored in this thesis.

Research aims

This thesis seeks to develop some theories about the nature of community-technology interaction, based upon a study of community development, education, and associated workers in group of community-based organisations in small-scale settings in Victoria, Australia. It seeks also to critique the existing literature in both the community and technology fields, and to identify the strengths and weaknesses in that literature. Considine notes that serious academic study of community organisations is lacking, to the point of not taking it seriously, despite its significant role in the economy as a form of government-at-arms-length in the delivery of social, educational, and other support services (Considine 2003). The research herein is a contribution to studying the sector seriously.

In government, there is a concern about the problematic nature of the adoption of technology in some community organisations. Thus, one recent Australian study speaks of the need for a 'supportive organisational culture, complemented by an understanding of the organisation's business needs as well as those of major stakeholders', based upon case-study research (Department of Communications Information Technology and the Arts 2005a). Another study of ICTs and the third sector (the larger non-profit and independent services sector, of which community-based organisation are part), also observes how little grounded empirical evidence there is about the impact of ICTs on third sector organisations in Australia, despite their importance for improvements to service delivery, overall organisation performance, capacity building, and citizen participation and engagement (Stewart-Weeks and Barraket 2002). Furthermore, while still in its early stages, the Commonwealth Government has engaged a number of organisations, including the Centre for Community Networking Research, where I work, to develop a feasibility study for a National Nonprofit Technology Council, reflecting the recognition of the need for better advice about ICTs and community-based organisations (Australian Government 2005).

Given the importance of community-based organisations as instruments of social policy and community development in Australia and many other countries, key questions which underlie this thesis include:

1. What is the place of technology in facilitating information and knowledge flows at the most local level, in community-based organisations, as extensions (through funding and policy) of government social policy?
2. How do people on the ground themselves understand those technological relationships?
3. What bodies of theory can help us to better understand the process of 'governance' as it affects people and technology artifacts, as an 'instrumental ensemble' of processes and behaviours embedded in particular organisational environments?
4. What new theories and processes can help to inform CBOs, government, and other theorists of community and technology?

Significance of the study

The answers found here provide new insights into the understanding and use of common technologies by people not employed in commercial business or government, but rather, CBOs and in particular, small, locally-managed organisations. Many CBOs are 'inhabited' by paid staff engaged in community or social work, who are intimately connected to their own communities as they move between work and the private sphere. Many workers in community-based organisations are also unpaid volunteers, though this study focussed on paid workers, in particular, the mostly female coordinators of Neighbourhood Houses.

A focus upon material solutions (training, hardware, help desks), ignores the nature of the particular and significantly personal relationships and presences that constitute the particular culture of Neighbourhood Houses in their interaction with workers and with the communities that they serve. While the workers may not see themselves as *primarily* having to do much with ICTs, an increasing part of their work and home life is engaged by interactions with computers. However, because ICTs are not primary in their work, other activities are their focus, but they interact with ICTs. The nature of this activity—initially characterised by Webb as governing 'technologies of care', but modified in this thesis (see p. 87)—has not been outlined in detail before, at least in the Australian setting. Certainly, the decentring of ICTs as the focus of work activity, in contrast to the centrality of such technology assumed in much Information Systems research (Lamb and Kling 2003: 200), should not be seen as negative, but rather, an empirical and theoretical correction and re-orientation that can be productively investigated.

The findings of the thesis are of particular importance in several distinct ways.

First, the method by which they were obtained (Grounded Theory) has been fruitfully adopted for obtaining rich data from community workers. Because the findings are based upon community workers' own knowledge, the findings in the thesis are therefore also of interest to policy makers and others who work with similar CBOs in supporting their community development, teaching, and social activities. The findings are also directly relevant to workers in Neighbourhood Houses and similar organisations who wish to gain practical insight into both how to research the views of people in community organisations,

as well as the place of technology in their working lives, in their communities, and in their families.

Second, the qualitative empirical data, while it cannot be used as a quantitative or predictive tool, could also be considered as a guide for the development of new research, practical studies and conceptual frameworks for working on socio-technical projects with community-based organisations.

Third, while of less interest to students of organisation, for researchers in information theory and related disciplines, the Grounded Theory model has also been compared to others' models of qualitative research and integrated into what is known as the Monash Information Continuum, an analytic and teaching tool used in studying information processes.

Fourth, the thesis has adapted the structuration theory of Anthony Giddens and others to the study of technology in organisations, and in particular, ICTs in small organisations. Previously, research of this sort has focussed upon large, corporate bodies, to the neglect of an important sector that is a cross over between business and community. The theory used and adapted has been integrated with other theories of technology and organisation. Thus, the establishment of a theoretical and conceptual base around 'technologies of care' allows for the integration of much more fine-grained and responsive understandings of human activity in particular settings. The research initiates a vocabulary and paradigm that can set in place a more effective dialogue between government departments concerned with social care and community development, and those with a much more 'technical' interest.

These findings are consequently of interest at not just a local or micro-level, but at a broader level of policy, particularly where policy intersects with front-line or smaller neighbourhood service agencies such as Neighbourhood Houses. Thus, in recommendations made by the Centre for Community Networking Research for a draft national information strategy in Australia, shortcomings in policy and research were highlighted, including the dangers of 'one size fits all' programs, as well as a much better understanding of the 'people' side of ICT by government (Australian Roundtable on the

Civil Society 2005: 18-21). The thesis thus provides insight about at least one type of small CBO.

In addition, in July 2006 the Outer Suburban/Interfaces Services and Development Committee of the Victorian State Parliament tabled its report into Building New Communities. The research for this thesis as well as prior research with Randy Stoecker helped inform my testimony which was quoted in the report, which also included a specific chapter on the importance of Neighbourhood Houses. The report emphasised the importance of Neighbourhood Houses from the point of view of community-building, as well as the importance of ICTs to Neighbourhood House activity. Specific recommendations were made by the bi-partisan committee for increased ICT support, including broadband to Neighbourhood Houses (Outer Suburban/Interface Services and Development Committee 2006).

Finally, some remarks about community understandings of ICTs in New Zealand are found in Appendix B, constituting an attempt, with Barbara Craig, to sensitise researchers and practitioners in Community Informatics and Information Systems to different theoretical and practical frameworks in culturally diverse societies.

In summary, the findings here are consequently somewhat different to, and add to, what is known in from empirical and theoretical research literature about technology in more conventional organisational settings. The study thus adds to the body of knowledge about the effects of technology in society, by providing additional concepts and theories that can be tested and subsequently refined at a micro level, as well as used for macro-level policy development.

Setting of the study

The Western suburbs cover about one-third of the metropolitan area of Melbourne, in the State of Victoria, Australia. The region includes six local government areas with a regional population of 650,000, spread across 1,330 square kilometres, approximately the same size as the more densely populated region of metropolitan London, UK. The region is more disadvantaged than the rest of Melbourne, and includes traditional working class suburbs,

pockets of entrenched poverty, and an old industrial heartland. The Western region is at the high end of every statistical index of social disadvantage (unemployment, failure to complete school, and poverty). The region is served by about 30 Neighbourhood Houses affiliated with the Association of Neighbourhood Houses and Learning Centres (ANHLC), the focus of this PhD[4]. The number of Neighbourhood Houses in the region is also comparatively fewer than in other parts of Melbourne, reflecting the lack of availability of volunteers (anecdotally, middle-class women), and historically, the lack of involvement by conservative local governments in supporting 'welfare'.

Overall, the region is less densely settled than other parts of Melbourne. Historically, this has affected public transport infrastructure, a vital link between communities. There are fewer train, tram, or bus lines than the rest of Melbourne and people are very dependent on private transport. Where public transport connections exist, time-tabling and routing is minimal, reinforcing spatial isolation for those without private transport and dependency on local connections and support networks. This gap particularly affects new and dispersed housing estates. The sight of 'young mums' pushing prams on the shoulders of major roads is not uncommon. More recently, pockets of middle-class affluence have developed, in both older gentrified inner suburbs, and in particular designated growth corridors. The region also includes market gardens, and on its fringes, is rural in character. The cities of Brimbank and Maribyrnong have large numbers of recent immigrants from Asia and Africa, as well as older European-communities, and Melton, a designated growth area on the metropolitan outskirts, is the fastest growing city in the state of Victoria (Department of Human Services (Victoria) 2002). Notwithstanding pockets of disadvantage, it was emphasised to me by a number of interviewees during follow-up discussions that there is strong community spirit and social capital in the region, evidenced through such things as Neighbourhood Houses, despite the lack of material resources.

The following table lists houses affiliated with ANHLC in the region by municipality. More detailed information is on page 33, where further information about interviews and Neighbourhood Houses is provided.

---

[4] The number is an estimate from ANHLC, due to the opening of new centres and the lack of affiliation of some centres.

Table 1. Affiliated Neighbourhood Houses in the Western Region of Melbourne[5]

Municipality	Number of Houses	Names of Houses
Brimbank	8	Community West - Formerly Brimbank Community Centre Copperfields Family Centre Duke Street Community House Hunt Club Community Arts Centre St Albans Community Youth Club Sydenham Community Centre West Sunshine Community Centre Westvale Community Centre
City of Hobsons Bay	8	Altona Green Neighbourhood House Altona Meadows Community Centre Laverton Community Centre Outlets Community Centre Seabrook Community Centre South Kingsville Community Centre Spotswood Neighbourhood House Williamstown Community and Education Centre
Maribyrnong	5	Angliss Neighbourhood House Braybrook Community Centre Maribyrnong Community Centre West Footscray Neighbourhood House Yarraville Community Centre
Melbourne	3	North & West Neighbourhood Centre Carlton Contact Neighbourhood House Chinese and Vietnamese Neighbourhood Centre
Moonee Valley	3	Flemington Neighbourhood House Inc Kensington Neighbourhood House Wingate Avenue Community Centre
Wyndham	4	Heathdale Community Centre Qantin Binnah Community Care Centre Werribee Community Centre Wyndhamvale Community Centre)

What does a typical Neighbourhood House do? In order to get a picture of 'typical' Neighbourhood House activity, I have drawn upon a number of Neighbourhood House newsletters to describe their activities. Such newsletters are widely distributed to their neighbourhoods, and alert residents of what is available. Class schedules are advertised

---

[5] The service region used for the study followed the Western geographic division of the Department of Human Services. The list is sourced from http://www.networkwest.net/directory_bylga.htm (29 June, 2005), though this region has been combined with the Northern Region. However, these administrative changes do not affect the substance of the research.

according to the term dates of the school year, and include a range of different sewing, knitting and dressmaking classes and social and educational activity for different immigrant women such as recent African arrivals or a Spanish-speaking parents group. Occasional childcare is also provided. English language classes are advertised, as well as health and personal development classes for new mums, Tae Kwan Do, Basic Literacy (including Internet training and access), a full range of introductory, mid-level and advanced classes in Microsoft and other application such as photo-editing, or a computer club based at a particular centre.   Some classes are particularly directed at 'Over 50s', people who may have low literacy including computer literacy skills. Once centre advertises a class called 'Finding the Job You Want'. Such classes, while providing direct skills, also provide social interaction and confidence-building for men and women. A community garden in one centre is used to get people to work outdoors and cooperatively socialise. After-school groups for kids are also advertised, as well as social programs for young people such as bowling, beach volley ball, internet cafes. Many classes are run by community volunteers, but some centres have programs with paid stuff (such as Adult literacy). The newsletters also contain ads from local councils, members of parliament and local small business. In one municipality, nearly 100 diverse classes in formal and informal learning are run through the eight community houses. In a small community house, only a dozen people might pass through in a particular day, but in large ones, hosting community groups, hundreds of people can use the facilities.

Additionally, the following extract from the Coordinator's Report for the Wingate Community Centre Annual Report 2002-2003 gives a not untypical word-picture of the local attachment to people and place-based activity:

> Let me take you on a walk through out community centre…
>
> The entrance welcomes you with a shimmering mosaic design created by Amanda Neville and students. The design incorporates an image of the globe reflecting the great mix of people who attend our centre from all over the world.
>
> Here is the reception area, where everything from course enrolments to appointments with social workers and tax help advice are made. The reception is staffed by volunteers and paid workers.

Our staff take on the complex role of dealing with enquiries and enrolments, and greet all who enter the building.

To the left the Over 50s Op Shop sell their wares and donate funds back to the centre.

The reception area offers two internet access points which are available to the public five days a week. A beautiful blue and purple 'Housing Week Wheel' was created by artist Frazer Wood and children living on the estate, as part of housing week 2003.

A little further down the corridor is our lovely Childcare room where the cries of babies are clamed, where our staff are always heard shouting a cheery welcome to their young charges. This is the place where anxious first-time parents drop off their children, their concerns diminishing as weeks go by. Students and families from around the area use the childcare are to learn new skills or just to have a break from the routine of child-rearing…

Down the corridor and past the small kitchen are the offices of the Consumer and Tenancy Advice Service, the Settlement Support Worker, the Essendon Community Legal Centre, the Ascot Vale Church of Christ, and Tax Help Volunteers. Their services contribute to making the Centre a diverse and rich place.

This continues for two more pages, and reports from many other centres tell similar stories of care.

Limitations and delimitations of the study

- The sample is biased towards the views of women workers in Neighbourhood Houses, in part through the process of self-selection and availability for interviews, and partly because of the dominance of women in Neighbourhood House coordinator positions (at least in the Western Region of Melbourne). Anecdotally, it appears that the majority of Neighbourhood House coordinators are part to full-time women workers, and those interviewed appear to come from fairly traditional family arrangements which may affect their views about the family-working life mix. Of course, it is possible to argue that a 'gender neutral' or male-only approach (if that is at all possible), or one which looked to women in non-traditional family structures might generate very different constructions of social-technical relationships.

- If the reader or researcher is seeking empirical confirmation about the characteristics of Neighbourhood House work in general through the interviews themselves, s/he

will not find satisfaction, because the focus is upon theory and concept generation as part of the Grounded Theory process.

- As qualitative research, its applicability or modelling in other situations and circumstances (as with any other form of research), can only be tested through intelligent interrogation of the theories and concepts contained here in other circumstances. Other research will certainly modify the picture presented here. What is presented are 'simplifying approximations' of complex human and machine interactions at one point in time, put up for further consideration and use. Longitudinal comparisons were not possible i.e. pre and post observations of technology.

- This is not a study of particular applications (for example email clients such as Eudora, particular Internet browsers, or Microsoft Word). However, the comments raised by the interviewees themselves can be regarded as indicative of particular trends in attitude and use. Only further, quite specific studies of particular applications will be able to demonstrate particular social-technical relationships.

- The field-work based methodology was based almost entirely on personal semi-structured interviews. Other than time spent dawdling in Neighbourhood Houses, before and after meetings, there was no attempt to conduct participant observation or other qualitative research. Lack of intensive and personal participation may have limited my understanding of Neighbourhood House processes, but I was struck by the consistency of views that arose from the interviews.

- This is a study of individuals in mostly small and autonomous organisations. As such, how the study's insights into the appropriation and understanding of ICTs apply to other sorts of community-based organisations (large and small, closely networked or dispersed) needs careful study and consideration.

2 Research method

The methodology adopted for this thesis had four key components, including development of a detailed proposal and broad research questions based on the original PhD application; a review of research literature; and field work (constituted largely by semi-structured interviews). Finally, the write-up phase involved the bringing together of all these activities, their comparison, and development of findings and new theories. The phasing and mixing of these elements is discussed in more detail in this chapter, and the following table gives an idea of the different stages of activity which occurred.

Table 2. Research Schedule

Task	Purpose	Time Frame
Proposal writing	Clarify key questions and demonstrate review of literature for PhD Confirmation Hearing.	Mar 2003–Mar 2004
Initial Literature Review	Locate and gain knowledge of past scholarship relevant to the proposal. First draft of literature review.	Mar 2003–Mar 2004 Mar–Aug 2004
Field work (post-ethics application approval)	Design, locate & select subjects	Aug 2004–Mar 2004
First write-up of field work data management, analysis) Draft of Grounded Theory chapters Comparison and testing of thesis findings	Gather data from interviewees (including data management).	Mar–May 2005
Comparative Interviews, New Zealand		1st week Mar 2006
Further write-up, including integration of supplementary NZ material Draft 1 Drafts 2-3	Prepare thesis chapters. Supervisor critical readings.	Jul–Dec 2005 Feb–Jun 2006 Jul–Sep 2006

Proposal writing and literature review

In the first instance, proposal writing and literature review worked hand-in-hand. The review of academic and practice literature (where available), was intended to provide me with conceptual opportunities, research questions and empirical depth, in order to flesh out the original and quite short (200 word) PhD proposal for confirmation after the first year's research. Versions of the proposal were provided to my supervisors, and the final version approved at a confirmation hearing held in May 2004. Once it became clear that I was not revealing any unanticipated issues in the literature I knew that boundaries had been reached across several areas, including theories of social science; theories of organisation; theories of technology; and community development literature. At that point I engaged in what I can refer to as 'depth reading' and note-taking from key authors in the literature. In months after that, I found that there were no major changes to my research questions, or body of literature, though some references were added to justify particular arguments. It was only at the final stages of write-up that I felt it necessary to re-immerse myself in particular items, more for purposes of clarification than enlightenment.

During the literature review process and supervision sessions I became very aware of the dangers of what has been referred to as 'data poisoning'—a form of overload when trying to absorb and synthesise too much too soon. Certain key items of the literature review took many months to absorb and comprehend, and in fact, the full implications of certain, core items in the literature review only became clear in the final write-up stage in the last part of 2005 and early 2006. Literature was located in the following ways:

- On the advice of my supervisors (particularly with respect to general works on structuration theory).

- Through extensive use of online academic electronic databases to search by author and key word for articles in refereed journals.

- Old-fashioned, serendipitous shelf-browsing and use of my own database of references, personal library, and other research materials.

- Through the snowball effect of references in articles and bibliographies in books.

- Through visiting the Association of Neighbourhood Houses and Community

Learning Centres library and accessing internal literature and reports and browsing shelf holdings for otherwise invisible literature.

- Through use of search engines, community informatics websites, listservs, and the advice and suggestions of colleagues locally and internationally.

References were stored using Endnote software and notations against articles (about the rigour, relevance, and issues arising) were made into the Endnote 'Comments' field. These were then used in preparing memos or draft chapters around major conceptual and empirical issues that I believed to be of relevance to the thesis[6]. I drew upon my experience in Program Evaluation for the creation of a research synthesis, that is, a review of 'established and relevant literature within a particular area of inquiry for the development of future programs and policies' (Smallwood and Hurworth 1998: 38). The latter part of the quote could be modified to refer to the 'development of current or future research'. The literature was used to formulate general, but not prescriptive concepts for the fieldwork questions, in order to provide for the opportunity for the Grounded Theory methodology to give rise to a bottom-up and indigenous process of theory development (see below).

The development of an outline of chapters reflected, in my case, a re-structuring and incorporation of the literature into my argument around a set of concepts concerning the adaptation of structuration theory for the study of technology in community-based organisations. Because I also think visually, I also developed many diagrams to represent ideas. Some of these pictorial representations were abandoned; others are used in the thesis.

Fieldwork methodology

Theoretical underpinnings of Grounded Theory

Grounded Theory is form of naturalistic inquiry first articulated by Glaser and Strauss (1967). Naturalistic inquiry is a form of research in which there is no direct manipulation of the research setting (a community, an event, a project), other than the natural interference

---

[6] I also faced the dilemma of requiring constant access to my data, between home, office, and other locations. I found that the Fastmail service (fastmail.fm) allows for 'private' file space and archiving of materials, and it was more reliable and easier to access through the web than the Monash intranet.

caused by the presence of the researcher (Patton 1990: 41). Grounded Theory aims to generate theory—as the name suggests—from bottom-up natural setting of inquiry, through a rigorous and carefully articulated process of data creation, collection, management and interpretation, akin to an algorithm, that is, a regularised and successive process with a finite number of steps.

While Glaser and Strauss proposed that Grounded Theory aims to generate theory without external interference of other ideas or attitudes, real world research is always conducted from some form of knowledge or theory base with which the data intersects. The restriction upon starting from a 'null base' is somewhat fallacious in PhD research, where part of the PhD process is to articulate a hypothesis, or at the minimum, research questions that pass muster in order to be confirmed as a PhD researcher. In addition, the mix-and match process of research, literature review, writing, field research and other activities such as the participation in related community informatics projects (which themselves give rise to new ideas and knowledge), means that there is no such thing as a *tabula rasa* in naturalistic inquiry, a point also raised by Giddens (see p. 137). It is also characteristic of other forms of action-oriented research (Wadsworth 1998). The very process of writing and interpretation immediately brings the researcher as writer into the position of developing a rhetorical narrative that brings together both theoretical and field work stories on the basis of comparable situations that others have said or experienced (Golden-Biddle and Locke 1997: 7). Indeed, Urquhart suggests that the idea of setting aside other ideas, as suggested by Glaser and Strauss is not a strict injunction, but rather a caveat to pay heed to the data and to take an inductive approach without preconceived ideas (Urquhart 2001: 115).

The traditional emphasis on research 'neutrality' reflects debates in the social sciences which seek to justify research from the strong claims of positivism, drawn from the natural sciences. However, such traditions carry a dangerous determinism and exclusionism that is inadequate for the study of the human condition (Lincoln and Guba 1985: 27ff). However, this debate is now less relevant, given the establishment of equally powerful arguments for recognising the intellectual rigour behind qualitative and naturalistic forms of research with their emphasis on careful craft to reflect social reality (Lofland and Lofland 1995; Golden-Biddle and Locke 1997; Denzin and Lincoln 1998; Charmaz 2001). Furthermore, I would

argue—at least in my case—the all-encompassing effort required to carry out each stage of research makes each stage task discrete, rigorous and focussed, guaranteeing against 'data poisoning'.

Other approaches to Grounded Theory research, such as that developed by Charmaz, additionally adopt an ethical orientation in framing social research. She strongly argues for a 'social justice' orientation, that 'assumes [the importance of] focussing on and furthering equitable distribution of resources, fairness, and eradication of oppression' (Charmaz 2001: 507). This is a familiar cry from the work of others such as Stoecker or Fetterman, who argue that research must be understood as linked to progressive solutions of larger social questions (Fetterman 1994; Fetterman 1997; Stoecker 2005b). However, while such aims are indeed laudable, there is another dimension to such research action, in that it is also oriented to provide more practical, bread-and-butter solutions and modest theoretical findings. This is what Merton referred to as:

> *Theories of the middle range* (sic): theories intermediate to the minor working hypotheses evolved in abundance during the day-by-day routine of research, and the all-inclusive speculations comprising a master conceptual scheme. (Merton 1968: 5)

Charmaz also makes the interesting observation that Grounded Theory can utilise:

> [T]he processual emphasis in Grounded Theory to analyze relationships between human agency and social structure that pose theoretical and practical concerns in social justice studies. (Charmaz 2001: 508)

These are what she also called 'situated contexts' of 'studied interaction', from which more traditional Grounded Theory studies have shied away (2001: 513). Thus, contextualising issues such as class, race, gender and power, as possible dimensions of social justice relations, need to be considered for the theory and practice of a *critical* Grounded Theory. The mention of 'situated contexts' again rings true with other aspects of research raised in this thesis, the lack of theory about of the situatedness of various types of technological and information theories within particular social and technological formations that privilege certain outcomes (e.g., the corporatisation of knowledge for profit). To pick up an adjective used by Charmaz, positivist technological theorising, by and large, appears to be

obdurate—that is, 'hardened against moral influence'[7], and unable or unwilling to engage in a dialogue with ethical and moral questions, thus privileging dominant modes of production and ideologies. On the other hand, critical theory serves to 'give social agents a critical purchase on what is normally taken for granted' (Macey 2000: 75). Thus, while the immediate purpose of the research herein is to develop some 'theories of the middle range', within the context of studies of information technology, it also aims to help to move beyond 'what is normally taken for granted' in the framing of technology as a series of technical questions rather than questions which are based in human-technical relationships. Answers about technology and people also give rise to answers about the type of society in which we live.

I therefore began the field research process with a number of generic concepts in mind, and it was these that were used to draw out a picture of technology in practice amongst the interviewees. However, my aim was not to confirm or deny my ideas in first instance, but in line with the ideas of Grounded Theory, to draw out ideas and theories held by the interviewees themselves. It should also be emphasised that the generic concepts did not represent a final stage, but were intended as problematising tools to enrich the interviews with Neighbourhood House workers.

With this qualification in mind, in line with a key principle of Grounded Theory (Glaser and Strauss 1967: 50), the purpose of my interviewing was *not the elucidation of non-contestable facts and 'truth', but the use of information from informants as a spur to theory creation and theory testing*. Thus, whether or not I was receiving an entirely accurate opinion or factual account of a situation was less important than the impetus it offered to theorisation. The 'stimulation' is tested through what Glaser and Strauss call the 'constant comparative method': the rigorous testing of 'data slices' that is to say, parts of interviews that hold as discrete and meaningful against each other for the construction of categories, propositions and new theories (Glaser and Strauss 1967: 55ff.).

Data slices offer meaning because they have conceptual and higher theoretical implications. However, not all slices of data will be equivalent in either word count or the quality of the

---

[7] Macquarie Dictionary, 3rd. Edition.

discourse that they contain. In fact, in any qualitative process, where the interview is the primary source of evidence, the quality of what is said will vary, notwithstanding any preparations or efforts to engender 'talk' put in place by the interviewer. The informants' mood on the day of the interview, ability to open up in an interview with a stranger, or capacity to describe complex detail or particular personal insights is inevitably variable. Some people in their efforts to be helpful may embellish reality, or tell stories. Furthermore, course, some people are much better at abstracting, have better vocabularies, or are more skilled at explaining and describing situations than others: the dilemma of practical and discursive knowledge and agency discussed by Giddens (see p. 142). In fact, a perusal of the interview transcripts (found in CD Rom, Appendix C) used for the research demonstrates such content variability. Some interviews are more valuable than others and have been 'mined' more effectively for concepts.

Thus, Grounded Theory of this sort does not attempt to replicate reality (and how could it be captured in one-off, or even two interviews?), but rather, to identify properties which help to build abstract constructions, and then to provide a theoretical basis for explaining those properties. I have not, as previously stated, engaged in participant observation where I could claim to have an in-depth understanding of the local culture[8]. Thus, I did not have a

---

[8] Raymond Williams' definition of culture has been highly influential, since at least the late 1950s when it was first published. It reflects an action/structure synergy in the creation of culture that is a precursor of Giddens' model of structuration. Williams was interested in the ordinary creativity and its reflexivity in everyday life as is Giddens, and not just 'high culture':

Culture is ordinary: that is the first fact. Every human society has its own shape, its own purposes, its own meanings. Every human society expresses these, in institutions, and in arts and learning. The making of a society is the finding of common meanings and directions, and its growth is an active debate and amendment under the pressures of experience, contact, and discovery, writing themselves into the land. The growing society is there, yet it is also made and remade in every individual mind. The making of a mind is, first, the slow learning of shapes, purposes, and meanings, so that work, observation and communication are possible. Then, second, but equal in importance, is the testing of these in experience, the making of new observations, comparisons, and meanings. A culture has two aspects: the known meanings and directions, which its members are trained to; the new observations and meanings, which are offered and tested. These are the ordinary processes of human societies and human minds, and we see through them the nature of a culture: that it is always both traditional and creative; that it is both the most ordinary common meanings and the finest individual meanings. We use the word culture in these two senses: to mean a whole way of life—the common meanings; to mean the arts and learning—the special processes of discovery and creative effort. Some writers reserve the word for one or other of these senses; I insist on both, and on the significance of their conjunction. The questions I ask about our culture are questions about deep personal meanings. Culture is ordinary, in every society and in every mind. (Williams 1989: 3)

desire to 'hold constant' (Glaser and Strauss 1967: 50) on facts and evidence, and through extension, the theories generated; in fact, I had a desire to uncover the inconsistent and contrasting, in order to provoke theoretical stimulation. I have assumed that in the 'practice' of everyday life there are familiar, valuable, and recursive expressions of belief and patterns of ordinary behaviour that have deep and continuing meaning to people, rooted in particular relationships (Huws 2003). People are *located* in particular life situations and structures that are expressed and have agency as their particular culture. Thus, Neighbourhood House workers tend to reflect a particular set of values and attitudes, based upon a particular Neighbourhood House culture and these are used in the Neighbourhood House processes. One the other hand, the interviews about community ICT in New Zealand discussed in Appendix C revealed a distinct belief and cultural system that is different to that found in other countries, and their relationship to a particular construction of technology in the Maori community is discussed.

The dependence upon human variety means that the qualitative researcher's findings always remain tentative in their generalisability and contestability and the possibility of improvement has to be accepted at all times. This is in line with Popper's verification principle: it is impossible to prove beyond all doubt a particular fact or proposition. There is always the possibility of the disconfirming case (think of the proposition that all swans are white when in fact, in some parts of the world, swans are black). Good social science (including qualitative research) is always looking for the disproving case to *improve* itself, in part, as a defence against crude positivism or deterministic historicism (Popper 1976; Raphael 1998).

A related and qualifying proposition developed by Lincoln and Guba is that Grounded Theory research is idiographic—bound in time, place and context—and because of this the research results (as in historical study) are particular and non-recurrent. The results are not necessarily replicable, nor are they necessarily generalisable. The results present 'working hypotheses' (Lincoln and Guba 1985: 36ff), and in fact, the principle of teaching important lessons on the basis of grounded knowledge and hypotheses about the contingent real world of practice underpins the practice of applied professional fields such as Program Evaluation (Guba and Lincoln 1981; Owen and Rogers 1999).

This discussion highlights the essential difference between positivist experimentalism and its desire for nomological (law-like) and predictive research statements which exist as value-free, outside of time-space constructions and interpretive, naturalistic, constructivist or hermeneutic methodologies. This view of the outcome of research also influences many areas of research, including the production of technology artifacts for the information sciences, in which there is an underdeveloped understanding of the 'social' (see p. 189ff.). Thus, while positivists believe that there is an essential, testable, and verifiable truth 'out there', and that the research process can be separated from the value-free social or scientific construction of reality by the researcher, researchers grounded in the different forms of interpretive, naturalistic or hermeneutic discovery argue that in fact, the purposes of scientific and social, human-centred research are different.

While there fact may be an ultimate, knowable reality applicable to certain situations and problems (Bhaskar 1975), some realities and explanations are more *powerful* and *saturated* than others for particular forms of study (Miles and Huberman 1988: 248). Thus, within the domain of interpretive inquiry, realities can only be known *imperfectly*, through the particular research ontology and epistemology and methods used by the researcher (Denzin 2001: 7882). The process of inquiry is caught up in the exploration and use of values, and this is particularly the case in the investigation of complex and contingent human activity, at the micro-level when investigating such factors as the 'capillary' activities of power and knowledge (Foucault and Gordon 1980: 96) or 'thick description' of human activity, the stuff of Charmaz (and Giddens') interest in the relationship between action and structure. To take one of Geertz's examples, the meaning of a wink cannot be easily hypothesised or its social effect precisely measured, but instead, narrative provides insight into the:

> [S]tratified hierarchy of meaningful structures in terms of which twitches, winks, fake-winks, parody, rehearsals of parodies are produced, perceived and interpreted, and without which they would not…in fact exist, no matter what anyone did or didn't do with his eyelid. (Geertz 1973: 7)

But, to draw out the point made previously, no two winks, and no two interviews are ever exactly alike. The views and opinions garnered from individuals in this research could be presented quite differently in a follow-up. What a person says one day, could be contradicted the next or within the same interview. Yet collectively, the interviews are

strongly indicative of particular trends and aspects of certain forms of activity in particular circumstances.

Further thinking about the context of the interpretive paradigm has added other layers to the many skins of the onion of research: for non-positivists, the researcher is gendered and situated in particular class, racial or social constructions with which s/he interacts: and thus plays out a conscious or unconscious role, embedded in particular cultural settings, filtered through the structuring properties of the disciplining schemes of language, made familiar through the 'linguistic turn' in philosophy (Toews 2001; Day and Pyati 2005).

A Note on Models and Theory Construction

Throughout the thesis, the word 'model' is used, with a particular understanding in mind. Mäki's discussion of models has been particularly useful in informing the discussion (2001).

The term 'model' can refer to textual, visual or pictorial, or even physically metaphoric representations of different objects and situations being studied, described, or imagined by the beholder. For example, a textual model could be a series of theoretical statements or mathematical symbols, or a combination of both. A visual or pictorial representation could include a circuit diagram or chart, while a physical model could be a scale cardboard replica of the Hindenberg Zeppelin or a rod-and-ball model of DNA.

Furthermore, the purpose of models is variable. Several kinds of models have been identified in the literature, and these are particularly relevant to clarifying the purposes of the research undertaken here.

First, *representational* models are usually three-dimensional physical models which while they are not exact copies of a particular object (for example, a molecule), *represent* particular elements for didactic and explanatory purposes. Thus, scales may be exaggerated or ignored, or they may be analogous to a physical reality. In the current research, physical models are irrelevant. Instead, models represent ideas, processes, and relationships.

Second, there are *imaginary* models, which are based on certain theoretical assumptions, but they are also not intended to be truthful (consider thought experiments). As Mäki suggests, they are 'stepping stones' to further theorisation or critique.

Third, and of most interest to the development of ideas in this thesis, are *theoretical* models, which as Mäki also suggests, are 'a set of assumptions about that object rather than a distinct object' (2001: 9933). Thus, they can be said to be a heuristic 'simplifying approximation' for highlighting particular things, but it is assumed in this simplification that the real object and its relationships may be much more complex and subject to modification (including falsification) in light of real world implementation, experimentation, and observation. This reflects a particular tradition in social science from Weber and Simmel onward that understands the laws of social science as non- predictive, but only 'idealizations of human motives' (Mjøset 2001). This perspective is of course familiar from the previous discussion about the nature of qualitative research above. Weber's highly influential model of the 'ideal type' can be considered to be an exemplar of the theoretical model, in that it exaggerates ideal conditions, intended towards the identification of real world characteristics and problems[9]. Such models and theoretical representations are a conceptual starting point for more detailed analysis of real world situations (Schauder 2000).

On the other hand, another tradition is linked to positivist research in the natural sciences (and as discussed previously): laws are predictive (such as the laws of gravity), or the assumption that certain laws about human behaviour can be consistently modelled (as is found in neo-classical economics and rational-choice theory). Such assumptions about 'one size' human behaviour to match technical requirements (for example, in rational-choice theory in neo-classical economics or 'human factors' in Information Systems), are flawed if taken as axiomatic, though at a discourse and political level, they are very powerful (Granovetter 1985; Walsham 1995a).

---

[9] As Weber put it: 'An ideal type is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct (*Gedankenbild*). In its conceptual purity, this mental construct (*Gedankenbild*) cannot be found empirically anywhere in reality. It is a utopia' (Weber, Shils et al. 1949: 90).

The enduring power of the scientific-positivistic tradition is as a consequence reflected in public policy under the thrall of economic models which are assumed to be unambiguously *representational* of humans (as above), and *replicable* (along the lines of a technical or scientific procedure, including procedures which used ICTs). There is an assumption that they can be simply bolted onto particular political, planning or budgetary processes without further ambiguity, confusion, or reflection, and this has taken on a strongly ideological tone (Pusey 1990).

The tension between the different concepts of models and their implications in discourse and action is similar to one suggested by Kuhn for the interaction of different scientific or research communities:

> [T]he proponents of competing paradigms [i.e., in this case, in research and public policy] are always at least slightly at cross-purposes. Neither side will grant all the non-empirical assumptions that the other needs in order to make its case..[T]hey are bound partly to talk through each other...The competition between paradigms is not the sort of battle that can be resolved by proofs. (Kuhn 1970: 148)

The theoretical models and suggestions, and particularly pictorial models in this thesis are thus simplifying approximations put up for further consideration and refinement, in the hope that different communities will no longer 'talk through each other'. Models and theories are highly useful analytical frames and abstractions which should not be applied deterministically, but are a starting point for both research and the public sphere.

This is a line of argument also familiar from the discipline of Program Evaluation. While the need to present frameworks in relatively simple forms such as flowcharts or diagrams may not be considered a priority for theorists of sociology or organisation, since they can be interested in exploring complexity and ambiguity, for the practitioner, concerned with the communication and utilisation of research, the need to present in relatively simple ways key insights cannot be underestimated. In fact, effective presentation or reporting of research findings for active utilisation of stakeholders has, for example been a key interest to other scholars and practitioners of Program Evaluation for many years (Patton 1990; Patton 1997; Owen and Rogers 1999; Patton 1999). Managers, policy makers, politicians and others need 'action heuristics', effective simplifications and communication of research

and other conceptually-significant results (McClintock 1987). Edward Tufte, for example, has praised the path-breaking use of superb visual displays in 1854 by John Snow of the cholera epidemic in London, which was influential in the move to fundamental health reforms in the UK. Tufte contrasted this clarity with the obscurity of space shuttle data which while technically 'correct', was meaningless to other engineers. Organisational inability to interpret mission critical data resulted in the engineering disaster of the shuttle Challenger blowing up in 1986 (Tufte 1997).

Research Design

Data Sampling and Selection

Glaser and Strauss's work suggested the following articulated process to me. A purposeful sample was chosen: as many coordinators of Neighbourhood Houses and Centres in the Western Region of Melbourne as would enable empirical saturation and redundancy of theory generation. While Patton makes the point that the 'logic and power' of purposeful sampling comes through the careful selection of information-rich cases (Patton 1990: 169), in the case of this research, there was restricted prior knowledge as to which cases (units of analysis) were in fact information or conceptually rich. Thus, I sought to include, rather than exclude, to the point of redundancy. Such a process of inclusion was line with Glaser and Strauss' own principle of inclusion for the purpose of generating theory and insight, rather than descriptive or sampling accuracy. Thus, as wide a range as possible of viewpoints could be sought (i.e., viewpoints which were confirming or non-confirming of any hypotheses generated).

Furthermore, the earlier, and small-scale *Empowerment for the West Project* conducted in mid-2004[10] had identified that all the 13 participating workers from the Neighbourhood Houses who participated in group meetings for that particular, small-scale research held valuable knowledge about technology construction and use. However, participation in that project had been through a process of voluntary self-selection, and I knew that there were

---

[10] This project, conducted in conjunction with Randy Stoecker of the University of Wisconsin, received small grant support from the Monash Research Fund and Community West, a Neighbourhood House in the region (Stillman and Stoecker 2004; Stillman and Stoecker 2005).

other Neighbourhood House workers who could also make a contribution. A number of other workers had been unable to participate due to time constraints, overseas trips, or other reasons. Some workers had been suggested for particular interview (a snowball effect) by other workers. Another way of viewing my sampling methodology was that I applied criterion sampling: as many Neighbourhood House coordinators within an identified service region as possible were interviewed until redundancy appeared in the interviews. An alternative view of the sample which emerged is that if I had no criterion other than able to contact Neighbourhood House workers because I had their address list, virtually the entire population of a service region could be covered.

In fact, out of the 31 Neighbourhood House houses, 23 initial interviews were conducted. At least one potential interviewee declined to participate, and two interviews were cancelled due to illness and family circumstances. I was 'stood up' on two others. Of the completed interviews, 20 were with coordinators and three were comparative interviews with paid staff who were engaged in community education rather than community development practice. However, they also worked in Neighbourhood Houses. In addition, two more follow-up interviews were conducted with paid staff in related agencies, as means of adding further depth to the process of theory generation, and another with the executive officer of the ANHLC. However, if anything, these interviews only confirmed what I had been hearing, and while they offered some further informational depth they were of no great theoretical utility.

All but two of the interviewees were women. Because of the small number of men interviewed (a relatively small number working in part-time paid positions in Neighbourhood Centres and Houses) a comparative study of causal or differential factors by reason of gender was impossible. However, in the interviews, I have sought to draw out the question of gender as a factor in attitudes to, or use of ICTs.

I had pondered how to allocate interviews to prevent any biasing effect on my own thinking and recording, and at first I sought to make interviews regionally in order to lessen travel time and keep the interviews as mentally 'fresh' as possible. However, workers were not always available, and ultimately, they were spread out through the period October to

December 2004, with some workers unavailable in the school holiday period. In fact, due to the intensity of preparatory and post-interview work associated with each interview session I found that I began to treat each as an independent mental unit, and I made some field notes where necessary prior, during or after the interview (including a site description and some photos of buildings where it appeared relevant). Of particular use to my note-taking was the 'Comments' field in Word which allowed me to create small memos as a box to the right-hand side of the text during the transcription process. The mini-memos were also a useful way of recording insights into the development of my own responsiveness and technique as an interviewer, thoughts arising cross-referencing and so on.

Table 3. Characteristics of Interviewees

Int. no	Role of interviewee	Gender, Age, Education	Service category: S: Stand alone O: Other service	Form of management	Type of building/location
1	Coordinator	F, 40s Tertiary	S	Community managed	Portable, suburban main road
2	Coordinator	F, 40s Tertiary	S	Community managed	Purpose built, suburban street
3	Coordinator	F, 40s University	S	Community managed	House and extensions, busy highway
4	Coordinator	F, 50s? Tertiary	O	Non-profit board	Purpose built, new outer housing estate
5	Coordinator	F, 50s Tertiary	S	Community managed	Purpose built, inner suburbs estate
6	Coordinator	F, 40s Diploma	S	Community managed	Purpose built, new outer housing estate
7	Coordinator	F, 40s Tertiary	O	Non-profit board	Purpose build on main road
8	Coordinator	M, 40s Diploma	S	Community managed	House & extensions, main road
9	Coordinator	Cancelled			
10	Coordinator	F, 40s Diploma	S	Council, transition to community	Purpose built meeting centre, new outer housing estate
11	Coordinator	F, 50s Prof. Qual.	S	Community managed	House and extensions, suburban street
12	Coordinator	F, 40s High School	S	Community managed	Old house on busy suburban street

Int. no	Role of interviewee	Gender, Age, Education	Service category: S: Stand alone O: Other service	Form of management	Type of building/location
13	Coordinator	M, 40s Certificate, some tertiary	S	Community managed	House and facilities on suburban street
14	Coordinator	F, 40s Diploma	S	Community managed	Purpose built in new outer housing estate
15	Coordinator	F, late 30s Trade Quals.	S	Community managed	Adapted facility in inner old housing estate
16*	Language Coordinator	F, 40s Profl. Quals	Co-located with Neighbourhood House	Community managed	Old house on busy main road, inner Melbourne
17*	Computer teaching Coordinator	F, 40s University	Co-located with Neighbourhood House	Community managed	Old house on busy main road, inner Melbourne
18*	Literacy teacher	F, 40s University	Co-located with Neighbourhood House	Community managed	Old house on busy main road, inner Melbourne
19	Coordinator	F, 40s Diploma	S	Community managed	House in old outer public housing estate
20	Coordinator	F, 40s High School (?)	S	Community managed	New purpose-built facility in new outer housing estate
21	Coordinator	F, 50s Health Profession	S	Community managed	Old house on busy main road
22	Coordinator	F, 50s? Health Profession	S	Community managed	Old house, inner suburban
23	Coordinator	F, 40s? Tertiary	S	Community managed	Old house, inner suburban
24	Manager	F, 50s Tertiary	S	Community managed	Adapted large facility on main road
25*	Manager	F, 40s Tertiary	Manager of ANHLC		
26*	Literacy teacher	F, 50s, Tertiary	Co-located with Neighbourhood House	Community managed	Old house, inner suburban

* These interviews were conducted for comparative purposes to test theoretical propositions arising from the data

Construction of questions

Based on the literature and research review, a list of open-ended questions for a semi-structured interview of up to an hour were developed (see Appendix A, p. 310), subject to the approval of the Monash University Standing Committee on Ethics in Research Involving Humans. Introductory questions ranged from basic demographic information to questions about the culture of Neighbourhood Houses. The interviews then moved on to exploring how ICTs were seen and experienced in work and to a lesser degree, at home, as well as how gender affected technology interaction. The questions were intended to develop a holistic picture of the place of artifactual technology in the place of the worker's paid and non-paid (home and volunteer) working life. In fact, each interview became a highly individualised conversation, where I sought to get interviewees to articulate points that appeared of particular relevance and some issues were covered in more detail than others. At times, questions were ignored or collapsed into others as the respondent volunteered information. With the comparative interviews with the several staff based in Neighbourhood Houses in non-Neighbourhood House roles, questions were also modified. And of course, some respondents were much more articulate than others, though I could make no assumptions about who would 'perform' more effectively than others prior to the meeting. Modified questions were used in New Zealand.

Before each interview I carefully reviewed the interview topics, and thought about my own demeanour (for example, to restrict a tendency to want to 'join in' on the conversation). I decided not to download annual reports about each house or obtain too much other information: I did not want to be overloaded—my goal was that I wanted to know the person, on her own terms. By and large, I managed to work through the schedule and varied it according to the knowledge and preparedness of each person to discuss particular issues, in line with a responsive—and emergent-inductive—research spiral[11]. In fact, the intensive

---

[11] For example, in notes made after interviews at the end of October, I wrote in a field note:

> I have done 6 interviews, and saturation (with nice bits of detail) is appearing on some issues. This may indicate: (1) I am asking the wrong questions (I don't think so). (2) I am asking the right questions (and getting lots of confirmation). In fact, my sense is that getting many confirmations with the quality and richness offered may be useful deep evidence. – push the rich pictures. (3) I continue #2 but ask variant questions – hypothetical e.g.— there have been suggestions that much of the counselling and care work could be carried out online (eg in Centrelink)—is it possible to communicate this way with clients?

experience of the interviews has been something of a revelation for me as a social researcher. I feel that I got to know certain aspects of the respondents' lives as workers, mothers, partners and community volunteers in quite an intimate and privileged way, though I don't know if they really know much more about me other than I am the person who interviewed them.

I had also intended to conduct more confirmatory/disconfirming interviews, and to follow up on cancelled interviews, but the theoretical and factual saturation made this unnecessary. The New Zealand interviews were also intended to be comparative, but as noted previously, they lead to other, and fruitful explorations (see pp. 5, 12).

As Glaser and Strauss suggest, beyond the decisions about initial data collection, further decisions about data collection cannot be made until amidst data collection itself—'the emerging theory points to the next steps', and the data itself ideally reveals what to do next (Glaser and Strauss 1967: 47). Early in the interview process, I had begun to feel a sense of 'déjà vu' in responses and the concepts and theories that were starting to bubble up from the data[12]. However, only post-interview, during the different write-up phases was I able to more deeply consider the conceptual and theoretical implications of the interviews.

Interview method

I closely followed the advice of researchers such as Minichiello (1995) and Burgess (Burgess 1984) in the conduct of the interview as a two-way, and comfortable conversation with a specific purpose. Thus my purpose was:

> Directed towards understanding informants' perspectives on their lives, experiences or situations, expressed in their own words. (Taylor and Bogdan, cited in Minichiello: 68)

---

[12] These were confirmatory experiences of what anthropologists refer to as the 'ethnographic moment', a moment of insight about an essential truth or reality being discovered. Thus, my 'experience near' in discussing the personal was used to generate my 'experience distant', or broader theory , as suggested by Geertz (2000: 57).

Such an approach is naturalistic and interpretive, which values the construction of reality held by each interviewee or informant. It also accepts the world view of the interviewer. Tropes suggested by the conversation act as springboards for further theorising.

Interviews were held where possible in a private room or space, though a number were held in open-plan areas. Most interviews were held privately, without any interference from other people or noise. However at times, the respondent chose to ask others in the office to join in or comment. All interviewees except one appeared quite used to presenting their views and there was little hesitation in holding forth.

I felt that the option of interviewing by phone was not appropriate, given my desire to see people *in situ*, and gain some (limited) ethnographic insight into their work environment and interactions with other people. I was also interested to some degree in the physical layout of each Centre or House, as part of my research was to gain insight into the workers' concepts of 'Neighbourhood House' as a particular form of place. This could only be gained through site visits. I took some photos, with the informant's permission, of spaces which I thought were particularly illustrative of particular things that they had said about their experiences with technology.

Furthermore, by being with respondents in person, I hoped that I would be able to respond to and acknowledge non-verbal communication, including indicative body language where relevant. I also hoped that my presence would reduce any fears of being interviewed. It could well be that people's confidence and attention spans would not survive a phone interview with a (male) stranger, particularly when the interviews touched upon family issues. My attention to the non-verbal behaviour, the 'silent language' (Hall 1959), in fact improved the quality of my transcriptions and later interpretations as I was able to visualise and understand verbal and non-verbal subtleties much more easily.

Technical assistance

I used a small Sony digital recorder, and this was placed as unobtrusively as possible. After a moment or two, most interviewees lost their hesitation about being recorded. I also quickly learned to minimize my own comments, promptings, and other 'noise' such as murmurs of agreement, in order to record as authentically as possible. Interviews range

from 25 minutes to one or two of up to 50 minutes in length, but the average was under 40 minutes. I took very few notes, preferring to focus on the conversation. In fact, as I remarked to interviewees, I preferred to just listen rather than write due to nerve damage which makes it difficult for me to write quickly and clearly, and this may have contributed towards a more sympathetic attitude to being recorded. I also told the interviewees that the aggregation of data would cut down any possibility of the subjects being identified.[13]

Transcription

I found that use of the following method was extremely helpful in making the processing of data as efficient as possible. Data sound files were uploaded from the Sony recorder to a PC, converted from the proprietary (.msv) format into wav-files, played through good speakers and carefully transcribed. I used the free program, Express Scribe (http://www.nch.com.au/scribe/), which has 'global keys' to manipulate the sound files. This means that the program can be run at the same time as carrying out a transcription. The program was much more effective than the Sony transcription software, because it has more options for controlling the sound files than the Sony software. Current versions of Express Scribe make conversion of .msv files unnecessary. Express Scribe also allows a certain degree of noise scrubbing which enhanced the accuracy of where there is background interference such as air-conditioning.

My verbatim remarks were generally summarised and italicised in the transcriptions, except where particular words or phrases deserved literal transcription. The informants' words and colloquialisms, on the other hand, were transcribed verbatim, including indications and hesitations. Occasionally, however, some stumbles, repetitions, breaks, or prompts from me were deleted (indicated by an ellipsis […]), and where clearly irrelevant material was introduced, this was summarised, or an ellipsis inserted. Identifiers such as personal names and place names were most often replaced by an em dash (—). Pages were formatted using the continuous line counts feature in Microsoft Word, meaning that accurate citation location and referencing could occur. An average of seven to eight hours was spent on

---

[13] There has been interest in my use of Express Scribe by practitioners and researchers and a book chapter is being prepared for publication (Stillman 2007).

transcription of each interview, with additional time for correcting the transcript and saving an additional version with all personal attributions removed.

Transcriptions were then emailed to informants for comment and feedback. Only one informant expressed concern over the directness of her comments and the potential for personal identification. In accordance with Monash requirements, all personal attributions have been removed from the transcriptions. Transcriptions are appended on the accompanying CD.

Data coding and reduction—the constant comparative method

Coding provides a form of 'analytical scaffolding', a means of building strong theory based on empirical information and observations (Charmaz 2001: 517). Rather than using a qualitative data analysis program such as NVIVO, out of a concern that I needed to fully understand, experience, and work through the process of data creation and categorisation in a critical research project, I decided to closely follow the more traditional method developed by Glaser and Strauss and given more elaboration by Lincoln and Guba for operationalising the data management and categorisation process (Glaser and Strauss 1967; Lincoln and Guba 1985). The physical and iterative act of comparison and display—many cards of data across a kitchen table and cups of coffee or tea, or at night, glasses of red wine, rather than the limiting computer screen—produces a kinaesthetic experience of physical sorting, matching, resorting, scribbling and so on, in a creative, cognitively rich, yet controlled process which also assists in data reduction, similar to the use of data matrix techniques for the parsimonious representation of large amounts of data (Thompson 1989; Miles and Huberman 1994; Stillman 2005).

Key steps utilised by me included, based upon Glaser and Strauss as well as operational refinements suggested by Lincoln and Guba included:

(1) Unitising and the development of categories.
(2) Comparing incidents applicable to each category.
(3) Integrating categories and their properties and delimiting initial theory.
(4) Writing more detailed theory.

Unitising

Underlying Glaser and Strauss' method is what Guba and Lincoln called the *unitising* of self-standing units of information for comparison to the next. As observed (see p. 23), 'data slices' are valued not so much for their empirical content, but as a spur to concept and theory-building.

Thus, transcriptions were carefully read one by one, and highlighting and underlining in red or other colours was used to indicate particularly interesting passages. Using a duplicate clean copy of the interview, units (or data slices), were cut out and pasted onto large index cards[14], together with additional handwritten annotations. The goal was to make each card only contain one general concept or piece of data, 'interpretable in the absence of any additional information, other than a broad understanding of the context in which the inquiry is carried out' (Lincoln and Guba 1985: 345). Each card was numbered according to the interview, but also given a general record number. For example, card no. 60 contains interview 7, lines: 111-123. Approximately 350 cards were constructed in this manner over nearly a week of intensive work days. Keywords, representing what appeared to be emergent categories, and some notes about properties, as well as theoretical hunches were also written on the cards, yellow sticky notes, or on memo pads. Additional notation about emergent categories and properties were handwritten on the master copies of interviews. However, sorting of cards into complementary piles did not commence until all the transcripts had been read and relevant data slices cut out and pasted on cards.

Categorising

> While coding an incident for a category, compare with the previous incidents in the same and
> different groups coded in the same category (Glaser and Strauss 1967: 106)

Categorisation is thus a critical, intensive and demanding process involving the sorting of hundreds of data items into meaningful groups. Through the process of categorisation, descriptive or explanatory properties and supporting rules for each category are developed,

---

[14] In the literature this process is nicknamed the 3" x 5" card shuffle, though in my case, it became 127mm x 203mm (5" x 8"), the half-page length and width of an A4 page.

and from that, explanatory theory generated. Theory generation works at two levels: the theory generated from the cards themselves, and secondly, the explanatory theory of the researcher, based upon other knowledge. 'Something right' emerges from the data, akin to what is known in German as '*Sprachgefühl*', when the right phrase springs to mind. Constant comparison of data creates a memory for the researcher (at least for the length of the coding session) of the many possibilities offered by the data, but at the same time, given the depth of information (number of cards), and the process of comparison (see below), the test of trustworthiness and validity—also called confirmability by Lincoln and Guba—is solved. There is a strong, triangulated, documented audit trail consisting of the 'data slices' or 'units', memos, and other written annotations that can be used, if necessary, in a form of reverse engineering to demonstrate how conclusions are reached (Lincoln and Guba 1985: 301ff and Appendix A).

The entire pile (now boxes) of cards was revisited once the unitising had been concluded. Cards were re-read and sorted into what appeared to be emerging common categories on the basis of content and suggested key words. Annotations were put upon each card as well as on 'covering' cards for each category, giving what I believed were boundary descriptions or 'properties' of each pile. An overall 'label' card was created and annotated for each emergent category, and annotation cards were stapled to the covering card. Units of data were compared again, and if necessary moved to a different pile. Obvious duplicates were removed.

As Glaser and Strauss observed:

> [T]the constant comparison of…incidents [data units] very soon starts to generate the theoretical properties of the category. The analyst starts thinking in terms of the full range of types or continua of the category, its dimensions, the conditions under which it is pronounced or minimized, its major consequences, its relation to other categories, and its other properties (Glaser and Strauss 1967: 106)

Glaser and Strauss' other advice should be followed. The second rule of the comparative method, when ideas start flowing, is to *write a memo*, which, as Lincoln and Guba state 'has a cognitive and cathartic effect' on the researcher, allowing her to provide a developmental history leading to the replacement of tacit judgements by propositions

(Lincoln and Guba 1985: 342). About a dozen initial memos were typed up during this stage as new ideas emerged and were consolidated. These became the core, valuable, and generated knowledge used to construct many parts of this thesis.

Integrating categories and their properties and delimiting the theory

At the point of integration of the categories clear distinctions between categories and their underlying properties become apparent. Coherency begins to emerge, setting the boundaries of each data set or category (Lincoln and Guba 1985: 342-3). Re-reading of memos, notes and cards leads to a consolidation and change in categories, and firmer ideas about theory begin to become clear. From my dozen memos, categories, and annotations that were written over several weeks of memo-writing, about seven key categories emerged, with a certain degree of cross-over. A key principle of the constant comparative method was at work here—theories emerge *from the data*, rather than being forced *into the data.* During this period of intense activity, I was engaged in a mental and debate about how to develop a more parsimonious and practical representation of what the data had 'told' me, particularly when certain ideas seem to be duplicated across categories. While Glaser and Strauss propose that data collection and analysis go on at the same time—which I found to be a practical impossibility—they still make the important point that:

> By joint collection and analysis, the sociologist is tapping to the fullest extent the *in vivo* patterns
> of integration in the data itself; questions guide the collection of data to fill in gaps and to extend
> the theory—and this is also an integrative strategy (Glaser and Strauss 1967: 109)

Ideally, theory construction only emerges from the data, but as discussed previously (see p. 21), Grounded Theory does not exist in a vacuum and in fact, prior theories (such as those generated from prior experience and knowledge, research literature and research review), continually intersect with the process of the development of Grounded Theory. However, the principle of delimitation is an important one: at a certain point, because of the redundancy and saturation of data, categories, and saturation of explanatory theories, it is natural to seek for parsimony of theoretical formulations as well as final reduction of the data into meaningful categories. Thus, the much larger number of short memos and categories merged into a smaller number of prioritised categories including:

- Neighbourhood House values

- Technology as an instrument (a large and complex memo with several sections)

- Technobiographies and gender / Women's work

- The effects and affects of distanciation

- Network effects

- Time

- Governance

These categories and the accompanying background memos in fact stood the test of time between May 2005 and the final part of 2005 when the first major full thesis draft was written. They became the core of the chapters in which the field-work data is discussed.

Writing the theory

For each of the above categories, properties were described, and an underlying explanatory theory developed. While ideally, this higher level of theory should be grounded completely in the data, I found that at this point I wished to refer in more detail to some of the concepts which I had found meaningful in the literature review, and thus for certain of the categories, it was inevitable that the memos, now becoming draft chapters, took on issues raised through the literature review. For example, the memo on 'Technology as an instrument' contained both rich interview data and a number of 'indigenous' theoretical speculations. I could not resist beginning to compare that material to the work of other theorists while the issue was still fresh in my mind, and this incorporation and modification became a constant part of the research process.

A further stage in theorisation occurred almost many months later, when I began to undertake a comparison between the research review and the body of theory, properties, and concepts generated by the data, and this led to the final version of the manuscript.

Comparison to Miles and Huberman

The Constant Comparative Method used in Grounded Theory, resembles the data management model proposed by Miles and Huberman, in which the following stages take place:

- Data Collection
- Data Reduction
- Data Display
- Conclusions

This process was represented by them in the following diagram:
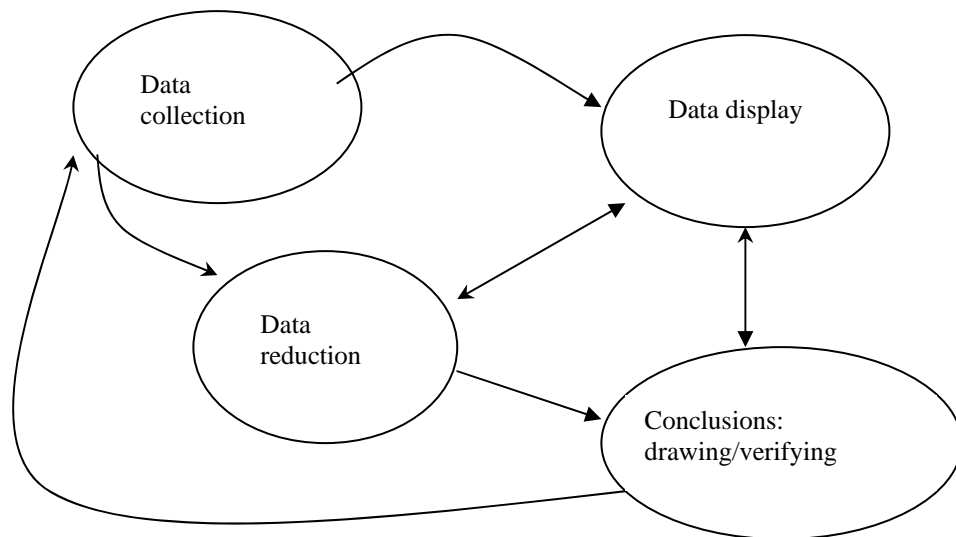
Figure 1. A Data Management Model by Miles and Huberman
(Derived from (Miles and Huberman 1988: 249 ; Miles and Huberman 1998: 181)

A modification of this diagram, incorporating the insights of Glaser and Strauss and Guba and Lincoln with respect to the Constant Comparative Method within Grounded Theory would be as follows:
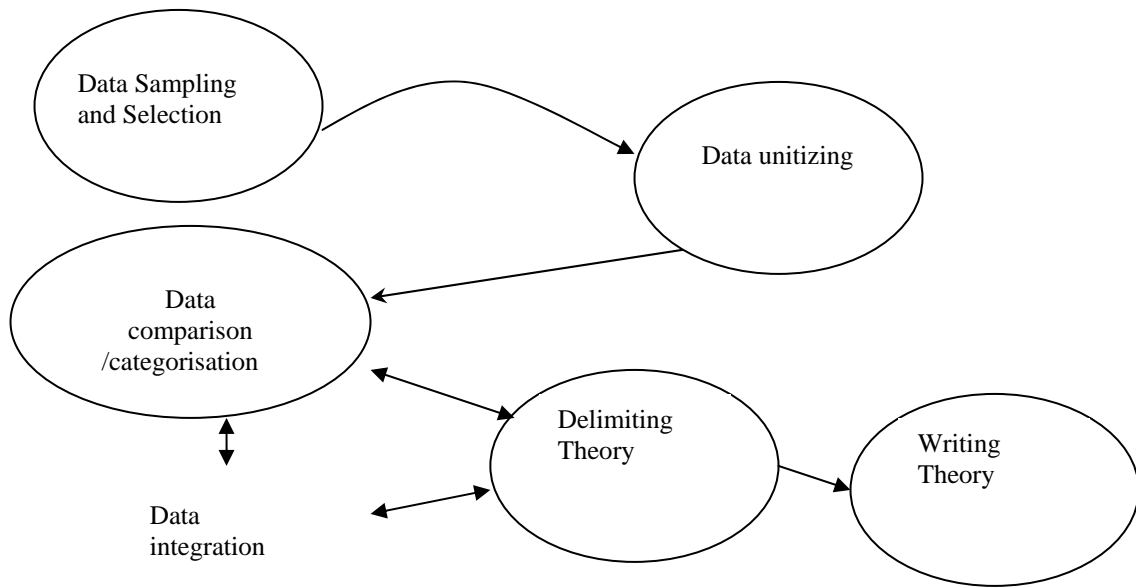
Figure 2. Modification of Miles and Huberman

However, an even more complete representation of the process would incorporate a data creation stage and at least the other stages of data management and analysis discussed above. Surprisingly, despite their deep interest in the construction of reality and an evidence base to support theories and concepts derived from it, neither Glaser and Strauss, nor Guba and Lincoln, devote attention to the process of data creation—in the case of this thesis, the complexities involved in the construction of the interview process and the transformation from spoken language to text. 'Data' appears as a done deed, rather than a construction out of the interchange of language, cultural understandings, and the act of transmission via technology and human interaction (for example, as notes recorded during or after and interview, or a verbatim recording). As Minichiello and Burgess have demonstrated, the 'interview' is itself a complex construction. The interview is thus a process of qualitative sampling and data construction. The following figure adds this important first stage by overlapping these two, critical processes.

44
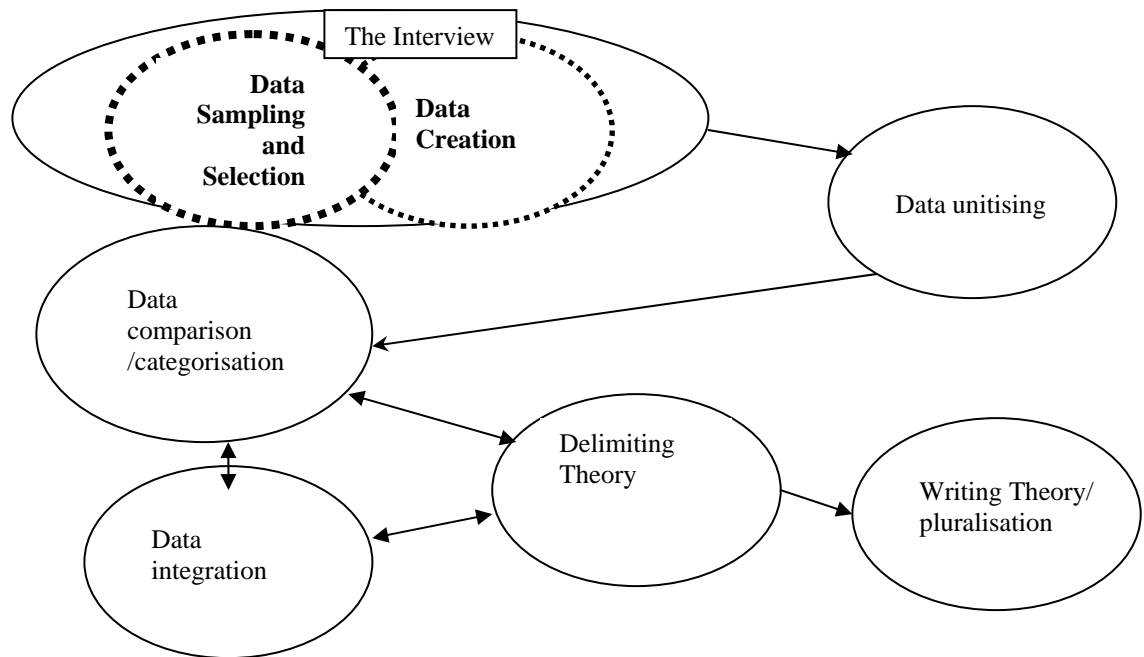
Figure 3. Incorporating Further Stages in the Data Creation and Management Process

Implications for the Information Continuum

The attention that should be paid to the act of data creation as part of the process of theory construction is reminiscent of the typologies of the Monash Information Continuum, a teaching and research model of information processes, in which information (such as business information or archival records) is understood as the medium and outcome of particular social rules and practices and their interaction with changing technologies in the context of the various information professions (Schauder, Stillman et al. 2004).   While this model of information processes is not of central concern to this thesis, for those engaged in archives and related areas, it is regarded as a useful and important conceptual tool and its application here is a side effect of the research conducted for the thesis overall. The attempt to apply the model to aspects of the research process here is therefore intended as a test of the model's applicability to other sorts of information research (here the process of data creation and management as part of a thesis.

Information (and its reconstituted products), can be seen to outwardly spiral from the original act of creation of a document (Upward 1997). This idea is derived from Giddens'

theory of structuration (see p. 113ff.). In the Information Continuum, 'information' is derived from a principle source (for example, an information object such as an interview), and becomes transformed through the agency of people and technologies for different purposes. Information objects are both embedded in the 'context of the action in which they are part, and are recursively involved'. If we consider the interview as a form of archived document, then Upward's other comment is relevant: 'Archival documents are firstly documents embedded in action, and then are records disembedded from that action' (Upward 1997: 277).

Information artifacts, as records and outcomes of action, thus become disembedded and reused in other contexts, for example, a research interview is 'unitised' and its parts are reconstituted via different technologies or processes as evidence for particular research and theoretical constructions in academic production. The interview, or any data, is therefore moved through a continuum in time and space, and is reconstituted, reused, re-embedded according to particular human or machine agency (human speech is transformed by agency of speech recognition software into text), or human agency makes particular interpretive decisions about how ambiguous sounds should be transcribed in transcription. The interview data (or its constituent parts) become 'pluralised' with the production of different knowledge artifacts: theory, the application of theory and the development of scholarly and practical publications. Its pluralisation can also lead to it being used in other forms of action, such as social action, lobbying, or policy-making. As an example, some of the workshop quotes used to underpin the *Empowerment for the We*st Project, undertaken in mid-2004 (see p.30), were also re-used in submissions and presentations to government. In another case, part of a PhD interview which discussed the changes in the life of an isolated older person whose life was helped by ICTs was used in submissions (see p. 280). As 'real-life' data it had an immediate impact on government officials in public settings, something far beyond its immediate use in a still unpublished, but circulated 'draft' report.

The incorporation of the time-space dimension is also important for several reasons. First, it recognises that information objects have a changing historical life, and in addition, the reconstruction of time and space through modernity, and particularly through the agency of ICTs, gives information objects new potentiality (for example, data units can be

immediately 'served up' on a website or in an electronic journal, whereas previously, months or years would pass by before a ship arrived with a copy of an overseas journal for use in an Australian library). The removal of the friction (Janelle 1969) of time and space has an immediate impact on the knowledge sharing (from the delayed to the immediate), and to more widely distributed audiences and uses. Thus, there can be expectations that material will be available not just within a university network, but downloadable in my home, or readable online in a municipal library. A positive effect of this change is that ideas in print or other media can be generated and communicated much more quickly than before, shaped through the medium of new technologies, and potentially, the capacity to use technology (word processing, or electronic data recording and transcription) allows for more efficient and in many respects, accurate, recording and reconfiguring of field data. At the same time, there may be negative effects of the intrusion of new technology into the process of knowledge creation: an emphasis upon rapid documentation in preference to traditional scholarly contemplation can lead to a reinforcement of the 'publish or perish' mentality.

The following two figures explain the Information Continuum. The first is a simplification of more complex, prior representations, focussing upon the stages of Creation, Capturing, Organisation, and Pluralisation of information, developed for explaining the Information Continuum to students. In it, the various stages of information activity intersect with foci at the individual, collaborative, corporate, and wider societal levels. While not all information activity needs to involve all stages or foci with different actors, it is a generic representation of the manipulation of information through different stages with different interests. The second figure is a modification of the first, now applied to modelling aspects of the various stages of a qualitative research process, but it could be used to represent other methodologies as well. It should be emphasised that this process is also recursive across time and space: products and outcomes are reutilised and reconfigured in new ways by different actors, human and machine. For example, an article can be utilised by a scholar, drawing upon an online journal, but at the same time a search engine mechanically and robotically (based on certain design decisions) searches for metadata which is pluralised through the Internet.
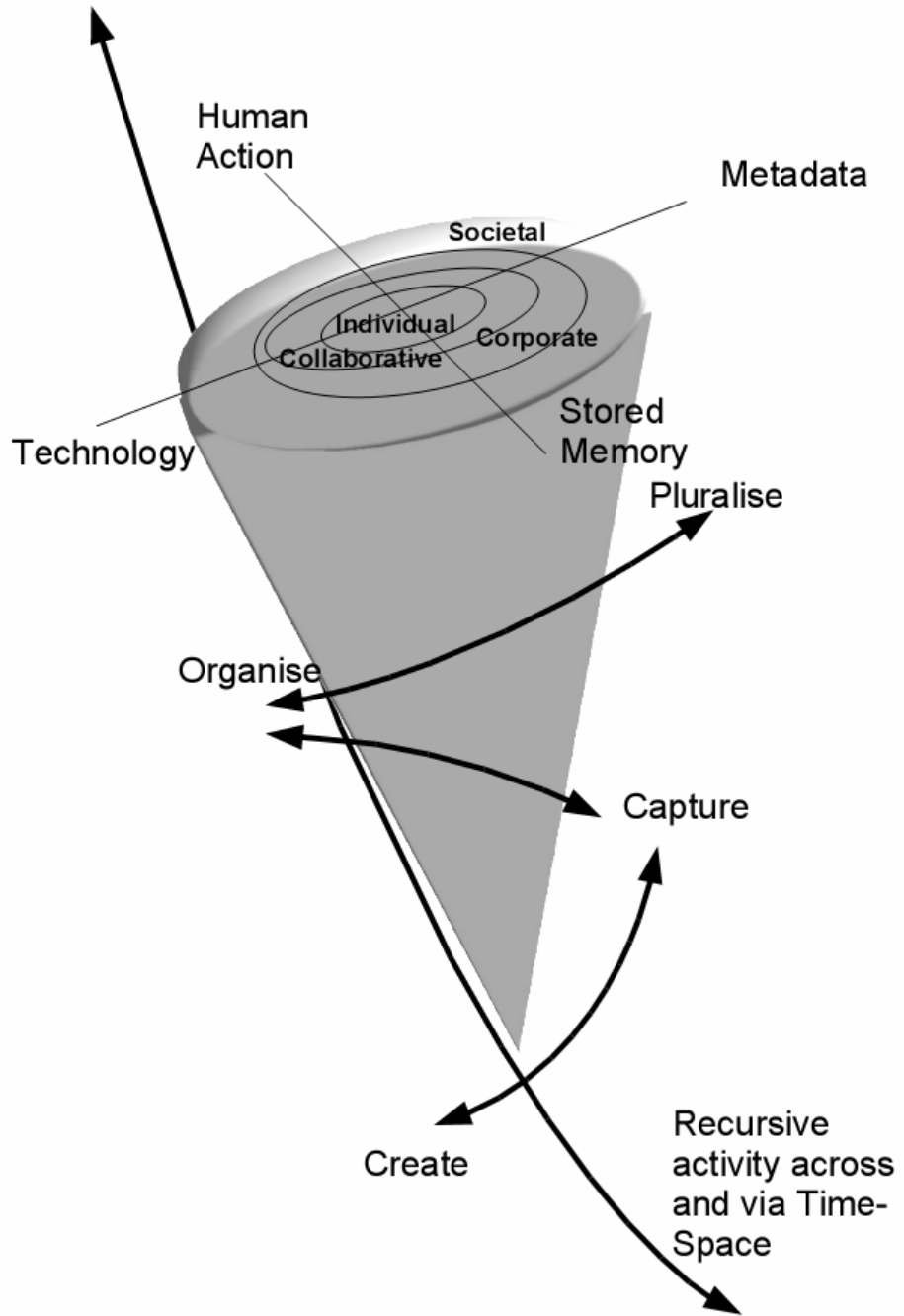
Figure 4. Information Continuum Processes
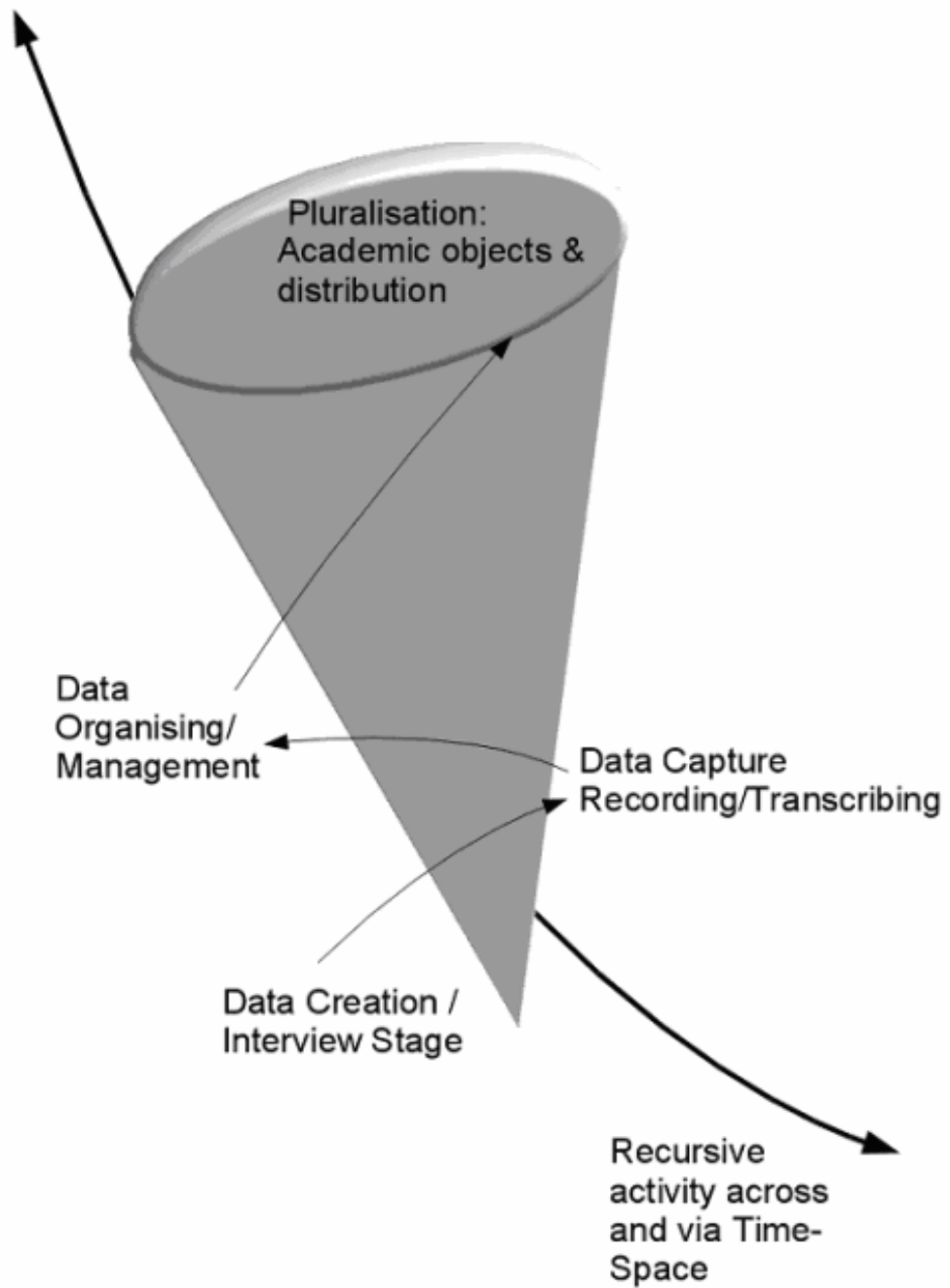
Figure 5. The Research Process Applied to the Information Continuum 'Cone'

Chapter conclusions

A traditional literature review process, as well as Grounded Theory, has been essential to the construction of this thesis. However, in contrast to the viewpoint of Glaser and Strauss, theory construction, based upon primary data, has not been conducted in isolation from other theories and concepts. In fact, it would be virtually impossible to consider any form of social research in a theoretical or experiential vacuum. A constructivist or interpretivist approach assumes the inevitable existence of different realities on the part of the interviewer and the interviewee. The overall ontology can in fact incorporate social justice or other progressive frameworks oriented to social change.

Notwithstanding the importance of such frameworks however, the stepped process and kinaesthetic experience of a more critically-oriented Grounded Theory was used to ensure a rigorous assessment and discussion of concepts generated through interviews, recognising the richness of data for generating new conceptual frameworks to serve as 'working hypotheses' in theory and model formation (see p. 25) . The development of theory was also compared to the methodology of Miles and Huberman, and the significance of the data creation stage was highlighted as something otherwise neglected by other theorists. For them, 'data' appears as a fact, rather than a construction out of the interchange of language, cultural understandings, and the act of transmission (eg as notes recorded during or after and interview, or a verbatim recording). In fact, the interview between a researcher and the subject is itself a complex information construction which becomes part of a process of knowledge creation. Recognition of this complex process resonates with aspects of the Monash Information Continuum, as an analytical tool for better understanding the process of data creation, capture, organisation analysis and pluralisation of data. The incorporation of time and space as real dimensions in this process also better accounts for the positive and negative effects of new technologies in allowing for the creation and distribution of information and knowledge in different ways and for different purposes.

3   What are community-based organisations?

General background

CBOs, as a type of small organisation, are overwhelmingly users of ICTs. According to a national survey conducted by the Centre for Community Networking Research, Monash University in October 2002, the proportion of organisations in Australia with at least one computer was 97%, with access to the Internet, nearly 90%, and with a website 61% (Centre for Community Networking Research 2003). These figures are in line, and if anything, in excess of general patterns of computer use and access in business organisations, the figures being 85%, 74%, and 25% respectively in 2003-2004 (Australian Bureau of Statistics 2005).

However, the cross-disciplinary and in-depth and interpretive, rather than aggregate study of CBOs' utilisation of new technologies in such environments is still in its infancy, reflective of the general lack of research grounded in the in-depth knowledge and skills held by community organisations themselves (Our Community Pty Ltd 2003; Stillman and Stoecker 2005; Stoecker 2005b). For the student of community organisation, community development, or human services, 'technology' is a new domain, while for the researcher in information management and systems, smaller community organisations are under-researched. IT theorists have tended to focus on the identification and solution of immediate technical, economic, and usability problems, rather than querying broader contextual issues, while organisation theorists have tended to shy away from more robust analyses of the complex and emergent nature of technology and its relationship to human agency (Orlikowski and Barley 2001). There appears to be a widespread, if tacit, assumption that technical applications which may be of use in for-profit business or governments are naturally of benefit or interest and benefit to community-based organisations, even though international research shows that technical difficulties, cost, and maintenance issues are consistently raised as disenabling barriers to connectivity (see, for example (Office of the e- Envoy 2002; Denison 2003; Department of Communications Information Technology and the Arts 2005c)). The counterintuitive view, that CBOs are

capable of assessing what is suitable to their needs and that 'less is more' might be the correct solution for their particular needs, does not appear to have been raised in many situations (Seedco 2002; Stillman and Stoecker 2005). Consequently, this thesis tries to provide some new, grounded concepts and theory to inform those working in or researching community organisations about how new technologies fit into organisational cultures, and at the same time, to also inform researchers in the field of information management and systems about the particular characteristics of at least one set of community-based organisations.

For the non-specialist, the term 'community development', as a form of practice that underlies the activity of many CBOs is unfamiliar, and requires some clarification, particularly because of international differences in nomenclature. Community development is also referred to as 'community organisation' in the USA. Community development is the basket of skills implemented through programs of grounded action and research to help and empower individuals and groups in communities (particularly those with a 'problem' as Stoecker suggests (see p. 4), to engage in self-help and education, or other activities for social improvement (see p. 66). Community development is also related to social work, but social work tends to be recognised through particular professional qualifications (such as a bachelor's degree) and registration, though this varies not just in Australia, but internationally. Social work has also been considered to be more oriented to the solution of problems in individualised or clinical case-work, rather than a socially-oriented change framework, and the relationship between the two forms of human-centred practice is subject to considerable debate in the literature (Jones 1998; Ife 2002; Mendes 2003). While many community development workers do not have specialised training, in places such as the states of New South Wales or Victoria Australia, for salary purposes, community development is subject to legal definition. The comprehensive outline of tasks delineated in such documents demonstrates the involvement of community development workers in not just support of clients in self help, but, to summarise the keywords used in the Victorian Salary Award, include a full range of complex administrative, advocacy, communication, evaluation, liaison, research, evaluation, planning, policy development, and other tasks with

co-workers and other agencies (2000)[15]. These tasks increasingly use, and are dependent upon ICTs.

Historically, CBOs in Australia have regarded services to people as more important than the accumulation of profit. Surpluses are ordinarily returned to the organisation, rather than distributed as dividends to members. Members of CBOs include their boards or committees of management, paid and non-paid staff, volunteers, and ordinary fee-paying supporters, so that ideally, a true body corporate exists, something quite different from government or commercial enterprises. Of course, the pressure to cover costs and reinvest surplus means that 'the bottom line' is increasingly important for many organisations, but the motive to make profit is not primary. Instead, their motivation most often revolves around the amelioration of particular human needs (in health, religion, education, and recreation), leading to particular cultural patterns and styles of operation. These patterns and their underpinning values interact and affect their work with other agencies, and by implication, their usage of information and communications technologies (ICTs) for information and knowledge transactions.

Lyons has commented:

> Members [of CBOs] have rather different expectations of an organisation than do shareholders or conventional owners who expect to benefit financially from their investment. Because they are generally the product of peoples' enthusiasms or commitments, non-profits are strongly value driven. This often makes their governance lively and contested. Because they do not have as their

---

[15] The New South Wales Social and Community Services Award (2001) of the New South Wales Industrial Relations Commission, Section 13.5.3(a) has a long and comprehensive definition of community development, summarised as 'working with a community (as defined) to address issues, needs and problems for that community through facilitating collective solutions'. According to the same Award, Section 2, Community Development Worker 'shall mean a person employed to assess the needs of the community, stimulate community involvement in meeting those needs and implement programmes and, in particular, education programmes'. On the other hand, the Victorian Award distinguishes between qualified and unqualified community development workers (including workers in Neighbourhood Houses, as well as indigenous community development workers: Victorian Social and Community Services Award (2000) of the Australian Industrial Relations Commission (Section 13.5.2(b): 'Qualified Community Development Worker means an employee engaged in community development work (as defined) who holds a post-secondary qualification in community work, community education, multicultural or ethnic studies, aboriginal studies, urban studies, community or welfare administration (however titled) or a related and relevant post-secondary qualification from a post-secondary educational institution'. An unqualified community development worker is defined as one doing the same work without such qualifications. An indigenous community development worker is qualified by reason of life experience, or indigenous culture and language, including ethnicity for purposes of working with ethnic communities.

> major goal obtaining the largest possible return on funds invested, their performance is hard to evaluate. (Lyons 1999)

Lyons' observations suggest that cultures of amelioration or social good, based upon a social altruism are also based upon particular cultural patterns with deep roots in particular communities' experiences and histories as well as changing conceptions by government of its own human services responsibilities, at least in Australia (Jakubowicz 1988; Lewis and Lewis 2001).

However, community organisations, particularly those in Victoria, have been through a period of great change during a period when government (the key funder) has developed a new relationship with the sector. The term 'social enterprise' has come into use to describe CBOs that while motivated by people-centred values, are increasingly orientated to be surplus oriented, leading to a change from the traditional people-first orientation (Dart 2004). Values disagreements or conflict are of course endemic to any form of organisation or business. But in terms of the community sector, one discussion of non-profits in Australia characterises the current problem as one in which the philosophy of people-centred values have come into conflict with managerialist techniques that characterise human services as a series of 'inputs' and 'outputs', rather than an emphasis on 'means' rather than accountable 'ends' (Jackson and Donovan 1999).

Internationally, the roots of such a philosophy in government go back at least to the 1980s with the rise of Programmatic Based Budgeting in Australia, and in USA the (Democratic) 'Reinventing Government Movement', supported the notion that government's role was to steer rather than row (Osbourne and Gaebler 1992; Costar and Economou 1999). Locally, managerialist philosophies which go under the labels of 'New Public Management', 'Economic Rationalism', or just 'managerialism', have been particularly influential in an era of privatisation, competitive tendering, and outsourcing of welfare and social services, via which many welfare agencies lose their independence as government contractors, such as that found during the 1990s in the State of Victoria (Whitwell 1998; Adams 2004).

David Adams has convincingly made the point that much of this particular philosophy of government has been strongly self-referential and authoritarian: discourse has been framed

as a form of expert, rational knowledge, to the frequent exclusion of other challenging or risky ideas, thus confirming Kuhn's observation about exclusionary paradigms (though in this case, not a scientific, but governance community). Adams observes:

> Communities are always tricky in public policy because unlike individuals, the nature of agency is much more complex with communities…Community knowledge is often place-based and this conjuncture between the temporal and spatial elements of knowledge generation is not something well-understood in public policy (Adams 2004: 37-38).

Adams' reference to place-based 'community knowledge' is interesting, and extremely useful in developing a key theme of the thesis. Following Day's approach, when Adams speaks of 'knowledge' in its time/space context, he is referring to the particular, culturally embedded constructions of information as well as knowledge that are 'affective' and 'responsive' (Day 2001a).

Such a self-referential framework helps to explain the limitations of government policy, despite the election of a Labor social-democratic government in Victoria in 1999. According to Wiseman, there has been 'little substantive shift' in government philosophies despite the move from a conservative so social-democratic administration (Wiseman 2005). Only the rhetoric has changed, with statements about 'community building' and 'consultation', leaving critics unsatisfied. In a volume published to coincide with a conference hosted by the Brotherhood of St Laurence, a major welfare organisation, in conjunction with the Centre for Public Policy at Melbourne University in May 2005, critics of such rhetoric made their views known (Smyth, Reddel et al. 2005). At the conference the Deputy Premier of Victoria announced a new 'place-based' focus in community services, with an emphasis on local governance. The idea of place-based management, in which there is an increased emphasis on the relationship between effective management and local community to achieve outputs, is gaining increasing currency in welfare circles (Green and Zappalà 2005). The Secretary of the Department of Victorian Communities, the major government department involved with community engagement, also announced six key principles, at the same conference including:

- Viewing the world through the lens of the clients, be they individuals, families or

communities (client focussed principle).

- Developing a simpler or single face of government locally (principle of place).

- Shifting from government controlling and directing the delivery of services to government playing the role of facilitator and enabler (principle of enabling).

- Devolution of service planning and delivery to the local level (principle of subsidiarity).

- Developing cross sectoral approaches to addressing social opportunities and problems through partnerships between Governments, community agencies and the corporate sector (principle of partnership).

- Harnessing the capacity of local leaders and entrepreneurs (principle of local capacity and ownership) (Blacher 2005).

Other papers in the Brotherhood of St Laurence volume outlined the emergence of a new community-focussed discourse and policy focus for government (and a new, socially-focussed jargon), seeking to develop social cohesion and community partnerships in response to the excesses of neo-liberalism. One new term in currency is 'associational governance', in which:

> Local governance systems, including public, private, and civil sectors are seen to be crucial in addressing disadvantage and social processes generating the exclusion of citizens from social, economic, political and community participation (Smyth, Reddel et al. 2005: 40).

The new rhetoric emphasises 'joined-up government', place-based service delivery, and the creation of regional structures for coordination between the different levels of government and the community. In contrast to previous philosophies, consultation with community is not seen as an end in itself. Effective engagement is also achieved through collaboration. Top-down managerialist methods do not work in community building (Smyth, Reddel et al. 2005: 4). The same message was also made clear in testimony to a parliamentary inquiry from one lobby group for local government, the Victorian Local Governance Association:

> For us, it is also about engaging citizenship. It is not about volunteerism. It is not about meetings on Thursday nights at town halls to find out what people want—and then no-one comes. It is about genuine authentic tools and methods to find how we might engage communities stronger in debates about their own future. While some of that might sound like feel-good stuff, the evidence at the moment is that local government after local government has embraced community planning. It has used it to inform its own strategic planning and used it as a deliberate tool to be part of its own strengthening agenda with its own communities (Rowe and Murrell 2005: 3).

Whatever the specific outcomes (which only time can tell), at a discourse level, Reddel anticipates a key theme of this thesis with his identification of an 'instrumental ensemble' with a 'mix of policy, discourse, negotiation, and arbitration structures that can negotiate the complexity of political, social, and economic life', at the local, particularly network level (Reddel 2005: 197-199). Following Nikolas Rose (Rose and Miller 1992), he identifies this ensemble, as a set of *technologies*, a means of governance. But Reddel's analysis is essentially about administrative and managerial processes and procedures. The vehicle through which they are increasingly conducted—and which helps to shape them, ICTs—is not acknowledged as an influential part of that instrumental ensemble that consumes resources, time, and skills.

Thus, critically, the exploration of the dimensions of the connection between methodological or process technologies, and the tools with which they may be made – material technologies, such as ICTs, is absent. What is missing from recent discussions (at least in Australia), despite nearly a decade of exposure to new forms of technology, is any sophisticated study of how these new technologies have affected the process of governance, particularly in the drive towards localised, place-based, 'joined-up' service delivery, which depends upon communication and coordination through new technologies. Research and policy development remains focussed on *governance policy*, and there is an absence of a conceptual frame and set of tools to describe and understand the relationship between ICTs and *governance technology* about information and knowledge construction that occurs in CBOs. Without a better understanding of the cultural, organisational, or other social factors, in addition to hard infrastructure issues, there is a danger that many CBOs will be left behind in the drive to develop 'joined-up' government and community services.

Grönlund provides some international context for this problem. Echoing Habermas (see p. 88), he argues that there is an increasing theoretical and discourse dominance by the rationalizing and expert administrative sphere of government over political (or representative interests), and civil society interests (where CBOs are located). The very nature of technology is both hard to understand and change by politicians (and civil society), while the increasing use of technology in e-government only leads to increased imbalance in favour of administrative, rather than broader community interests (Grönlund 2005).

As a consequence, governments and other agencies that have adapted to new technologies have difficulty in coming to terms with competing, people-oriented agendas in community-based organisations, even if it is believed that technology may be of assistance. Intangibles such as improvement in personal relationships, lifestyle, or personal goodwill are seen as linked to effective use of ICTs, though what is meant by 'effective use' is subject to debate (Gurstein 2003; Stillman 2005).

Characteristics of community-based organisations

Are there any essential characteristics of CBOs, at least in the Australian context? Lyons provides a framework for understanding how the values of community-based or community services organisations are put into practice:

> Community services encompasses many of what are often identified as separate types of service. But what they all have in common is that they provide support, care, encouragement and advice for people in a way that is primarily determined by them, involves some enduring pattern of interaction and is designed to remove the need for support or to enable people to achieve maximum feasible independence or autonomy in their home and community, or a setting that as closely resembles this as possible (Lyons 2001: 33).

The study of such characteristics and the relationship of what happens in organisations by 'making work visible' (Suchman 1995) through the vehicle of workplace understandings of, and intersections with, technology is key to this thesis. However, the work of welfare and community organisations is not the same as that of other white-collar organisations.

Non-profit or community services organisations, since the early days of white settlement in Australia, have been important in the delivery of welfare and social support services. They are also a significant sector in the economy as a whole, deriving at least 30% of their income from government overall, though many organisations are almost entirely dependent on government support. At least 6.4% of the Australian population (over 600,000 people) work in the sector. They contributed $21 billion, or 3.3% of the country's Gross Domestic Product in 1999-2000, rising to $30 billion or 4.7% of GDP when free services are included. The contribution of volunteers is estimated to come to 704.1 million hours of voluntary work. Overall, the relative size of the sector is similar to that of the USA and larger than that in the UK and many other European Countries (Australian Bureau of Statistics 2001b; Australian Bureau of Statistics 2001a; Philanthropy Australia 2003).

Furthermore, one of the complexities of researching and discussing the activities of non-profits in Australia or elsewhere is definitional. The research by DiMaggio and Anheier, while focussed on non-profits in the USA, speaks of 'balkanised literatures on specific industries and organizational data sets with neglected measures of legal form', replete with ideologically and culturally-loaded terminology (DiMaggio and Anheier 1990), and their research has continued to demonstrate the great complexity of researching a heterogeneous sector in the USA (DiMaggio, Weiss et al. 2002). Problems also arise in providing a definition in Australia, with its history of greater government engagement and funding for social support. The term 'non-profit' includes, according to the Australian Bureau of Statistics (ABS), educational and research organisations, culture and recreation, social services, health, professional associations and unions, and all other non-profits, a much broader category than the particular interest of this thesis. Thus, as long ago as 1992, Lyons indicated that ABS's industry division of 'community services' was much too broad and should focus on welfare services within the community sector (Lyons 1992). However, Considine has indicated that the inclusion of such organisations as large health organisations or mutual funds is also problematic, when the function and purpose of such organisations is clearly and logically different to small voluntary (and community-based) organisations (Considine 2003). Indeed, to again point out the complexity of the problem, ABS includes administrative components of government concerned with the delivery of community services (Australian Bureau of Statistics 2001b).

However, the comprehensive research of Lyons into non-profits in Australia has provided some definitional refinement and clarity, reflecting his research into what he says are industry ideas about the constitution of the community services industry:

> [*Community organisation*] refers to small third sector organisations operating in a limited geographical area. They may include member-benefit as well as public benefit organisations (Lyons 2001: 9).

The idea of a particular geographic reach, particularly into a local community, is particularly relevant to Neighbourhood and Community Houses, the particular focus of research in this thesis. Neighbourhood Houses reach across several areas of service to their community, engaging in community and adult education (including training in, and access to ICTs), the arts, employment skills development, and community development. CBOs such as Neighbourhood Houses or community technology centres such as those run around Australia by the Smith Family, a large charitable network, are increasingly important in providing opportunities for low-income families (parents, and young people) to gain electronic skills necessary for social participation (for example, being able to email a local council, claim social support benefits online, or engage in on-line banking), or at school. Many low-income people cannot afford a computer at home, and such low-cost, supported community access points are critical for their electronic social participation (McLaren and Zappalà 2003; Muir 2004). Lyons suggests that this mixture of purposes and relationships (for example, with different funding bodies and constituencies) is characteristic of the hybridity of non-profits in Australia (Lyons 2001: 11).

In addition, the concept of community is frequently associated with a sense of 'communion', shared values and network ties, and this matrix of strong and weak ties which contribute to both the reinforcement of local connections and broader associations (Granovetter 1973). The communal base is frequently used in the field of community development as a resource for action or as the basis for other interventions. Furthermore, these understandings are now applied to the study of virtual communities where a new compound term, 'community network' has developed, to account for a multifarious range of use of ICTs for community development in physical, place-based and virtual settings, or a mix between the two (Lennie 2002). Such networks represent a hybrid social-technical

network, in which technology is seen to have, and is 'delegated' a constituent role in constituting relationships (Law 2001).

Such hybridity is also of interest to the researcher, since it indicates the many different pressures at work in service delivery, indicating that the use of technology in CBOs may also be subject to a range of competing interests and priorities. This may particularly be the case, given the importance of new technologies in service delivery to government, reflecting the transformation of many formerly separate organisations into networked service groupings, with the potential for new communities of practitioners working in ways that did not exist before (Gould 2003).

Chapter conclusions

CBOs such as Neighbourhood Houses are an essential part of the support network in many communities. They provide a linkage between both the private and public spheres of life (see also p. 71), and are particularly seen by government as a means to connect locally, at a time of policy change towards 'place-based' initiatives. Community development workers, placed in Neighbourhood Houses, have specialised skills in supporting members of the community to enhance their lives, but at the same time, are engaged in a full range of administrative, policy, and other forms of communication with related organisations.

Given the importance of CBOs as instruments of social policy and community development, a set of key questions underlie this thesis. What is the place of technology in facilitating information and knowledge flows at the most local level, in community-based organisations, as extensions (through funding and policy) of government social policy? How do people on the ground themselves understand those technological relationships? What bodies of theory can help us to better understand the process of 'governance' as it affects people and technology artifacts, as an 'instrumental ensemble' of processes and behaviours embedded in particular organisational environments? What new theories can be generated to help inform CBOs, government, and stakeholders?

 The study of Neighbourhood Houses it is hoped, will satisfy aspects of these questions.

4   What are Neighbourhood Houses?

The perspective of Neighbourhood Houses

The following screenshot is from the site of Association of Community Houses and Learning Centres, Inc (ANHLC), (www.anhlc.asn.au), and is indicative of the hybrid activities, including community-based computer and Internet training and support which Neighbourhood Houses undertake in their community development roles.
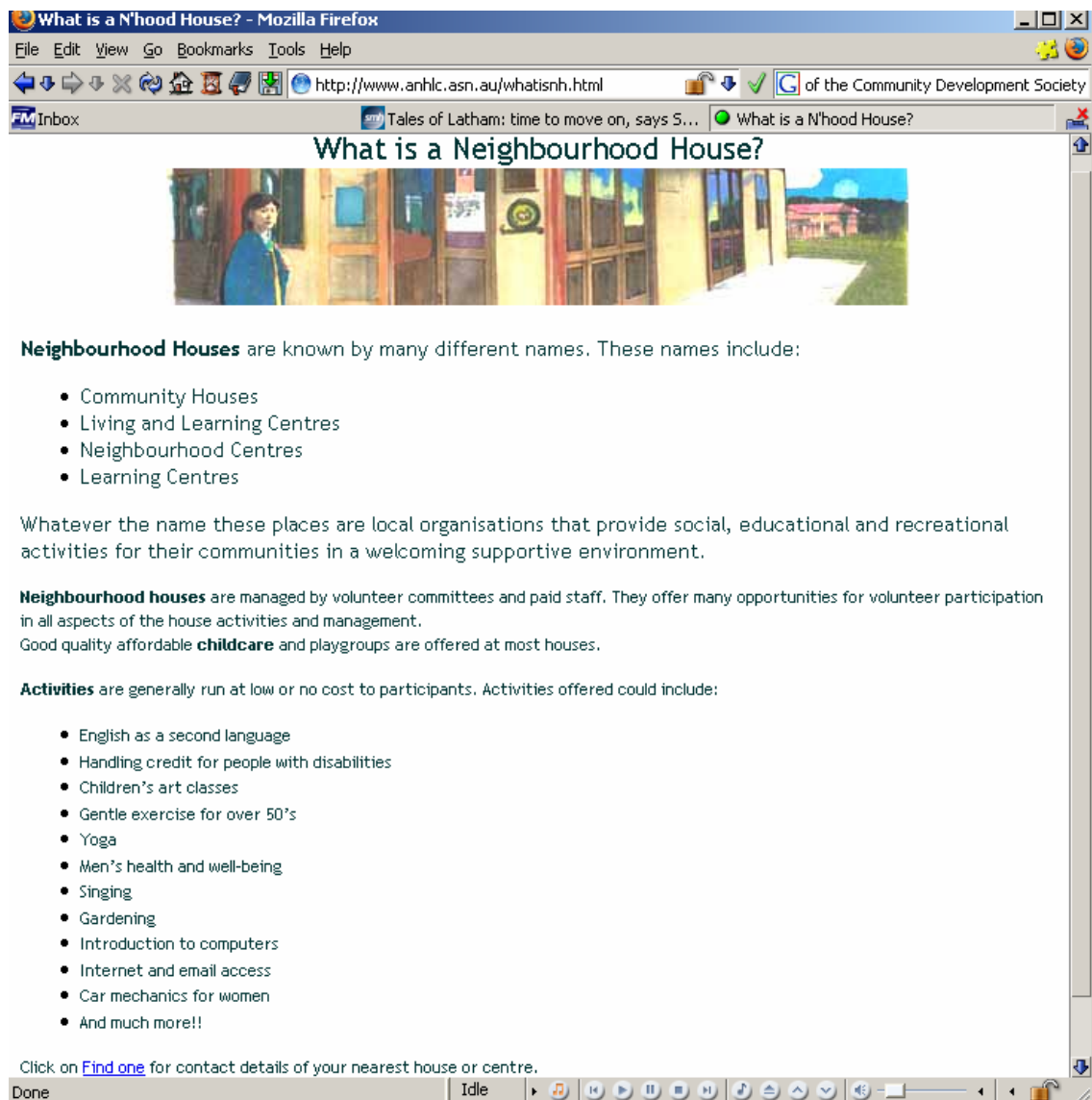
Figure 6. What is a Neighbourhood House www.anhlc.asn.au (June 2006)

Furthermore, the description of Neighbourhood House activity outlined on p. 14 shows the grass-roots connection between Neighbourhood Houses and their activity. In mid-June 2005 there were approximately 375 Neighbourhood Houses in the State of Victoria, constituting over one-third of like organisations in Australia. In New South Wales, Neighbourhood Houses were set up as early as 1961; in Victoria, they were established as a community-based education and support service in the early 1970s. The first peak network was established in 1978 and was known as CHAOS (a name perhaps aptly chosen in that era), to become ANHLC in 1979 (Bullen 1997; Humphrage 2005).

The qualifier 'approximate' with respect to Neighbourhood House numbers in Victoria has been used because of the loose arrangements within the Neighbourhood House sector: not all Neighbourhood Houses are funded by government, and not all Houses are members of peak associations such as the ANHLC. There is no legal restriction upon use of the term 'Neighbourhood House', 'Learning Centre', 'Community Centre', unlike 'Citizens' Advice Bureau' or 'Community Information Centre', the official names of a related network of social support agencies. This openness to community appropriation reflects the democratic and inclusive temper of the movement. According to information provided by the ANHLC, 375 Houses in Victoria are on its database, though it is highly likely that there are other, community organisations with no affiliation. Of the 375 Houses on the database, at least 308 are financial members of the ANHLC[16].

Unlike Citizens Advice Bureaus (now called Community Information Centres) which also had their origins in the 1970s (Williamson 1984), Neighbourhood Houses have moved away from a volunteer management model to one which accepts the need for professional coordination. The vast majority are self-managed through Committees of Management, though some are managed by their local council. Many own their own facilities, while others have premises supported by, or allocated by local government.

Neighbourhood Houses are organised into six regional networks, each with a part-time government-funded network support worker, who supports information sharing and other activities. The numbers of Houses now in existence far exceed the 193 in Financial Year

---

[16] Phone data from ANHLC, 27 June 2005.

1990/1991, with a constant 264 in the period 1993/1994- 1999/2000, after which funds were again invested in the movement by the new Labor state government, leading to an expansion in Neighbourhood House numbers to the approximate 375 in 2005 (Permezel 2001: 60).

Combining aspects of formal and informal structures, networks such as those established by Neighbourhood Houses offer opportunities for communication, use of resources, and other activities. Networks are seen to preserve a certain flexibility and informality as well as a particular value set, and as such, can also act to assist, constrain or limit relationships though their bridging and bonding activity (Stokman 2001: 10510). When referring to Neighbourhood Houses as a network, it is useful to see this structure in two ways. First, networks operate as an informal set of organic relationships and behaviours that are created between individuals and the organisations they work in. Such networks can exist at an interpersonal level, or work across time and space via different technologies (for example, via postal mail, fax, phone and email). Identification of such networks can be sustained not just through ordinary communication, but the conduct of particular rituals or the wearing of particular items of clothing and other decorations as a manner of group identification and cohesion. Such behaviour is of course familiar from many other voluntary associations (for example, lawn bowls clubs, Masons) and more formal organisations (schools, many businesses, the armed services). Thus, many Neighbourhood House workers wear a particular brooch (it resembles a house), denoting their years of service and at the Annual Conference, singing, dancing, and recounting of 'war stories' are used to reinforce group cohesion and identification[17].

Second, networks can also refer to formal structures (regional and funded Neighbourhood House Networks), set up for specific purposes, and these too can use different technologies. Furthermore, people who work in and participate in Neighbourhood Houses are members of multiple personal communities and networks, as family members, parents or children, or linked into other workplaces and connections. This mixture of network technologies and human relationships is very characteristic of CBOs, and such networks are used to provide

---

[17] I attended the 2005 Annual Conference was quite moved by the highly enjoyable group ritual of singing, dancing, and sharing of stories.

what Our Community has called 'The Third Chance', the network of connections supported by CBOs that supports disadvantaged people beyond the connections of family and workplace (Our Community Pty Ltd 2003: 7).

The current (as of 2005) Victorian State government objective for Neighbourhood Houses is adumbrated in a number of policy statements, which contain information about government's views on ICTs in community development and community education. During the conservative Liberal-National Parties' administration from 1993-99, a host of community support services were cut and rationalised (Costar and Economou 1999), but since the election of the Labor Government in Victoria in 1999, funding and support for Neighbourhood Houses has significantly increased, reflecting renewed government commitment to a 'core universal service central to supporting all members of the Victorian community, particularly those who are vulnerable or isolated' (Family and Community Support Branch. Community Care Division. Victorian Government Department of Human Services 2002: v).

Most, but not all, receive core funding for coordination assistance from the Community Care division of Department of Human Services, though in early 2005, responsibility for them was transferred to the Department of Victorian Communities. 336 Houses received $9,239,000 from the Department of Human Services in 2003/4, and this level of funding is guaranteed for 2004/5 and 2005/6 with adjustments for inflation and wage increases. In May 2006, funding was massively increased by the State Government, to $27.8 million dollars (Department of Human Services (Victoria) 2006) . A formula arrangement is used to fund each house by coordination hour. Each coordination hour is matched by two service hours, and coordinators work between 12-40 hours, though the majority of workers are employed on a part-time basis (Humphrage 2005).

Other funding for particular programs is obtained, for example, from the Adult, Community and Further Education Division of the State's Department of Education, and through modest student fees for courses, philanthropic trusts, fundraising, and support by local businesses. Ninety percent of Houses receive direct or in-kind support from local government, with 71% receiving recurrent funding, though the details of funding

arrangements vary greatly, from $30,000 in some inner Melbourne municipalities to $1,400 in small rural shires. Affiliated and funded Neighbourhood Houses are organised at three levels (Humphrage 2005: 1):

- First through the AHNLC as a peak representative body

- Neighbourhood House Networks, with a funded worker to assist in coordination between Houses at community, regional, and municipal levels

- Neighbourhood House and Centres themselves, as community owned/managed organisations (though some are also council managed)

Humphrage's recent study of Neighbourhood Houses argues that in fact, Neighbourhood Houses can increasingly contribute to community building through a particular style of practice that is 'facilitative, developmental, and fundamentally relies on strong and inclusive relationships within the House/Centre and with the wider community' (Humphrage 2005: 21).

Very recently, a Committee of the Victorian Parliament, citing this researcher's own testimony as well as that of others, has reinforced the view that Neighbourhood Houses play a significant role in new communities, including developing social and technological capacity (Outer Suburban/Interface Services and Development Committee 2006: Chapter 6).

Some of the dimensions of that capacity are explored in this thesis through the exploration of the world views of Neighbourhood House workers in their use and understandings of ICTs in such work.

Community development perspectives

From the community development perspective, Neighbourhood Houses function as locales for 'solidarity and agency', in which solidarity represents deeply held bonds, brought to fruition through human agency. Neighbourhood Houses facilitate key aspects of community development, including the fulfilment of three core tasks of community

development: self-help, felt-needs, and increased participation in family and community networks. The effective conjunction of these tasks leads to agency and capacity on the part of participants (Bhattacharyya 1995). The idea of 'solidarity and agency' at the core of community life also provides a less restricted dimension to the idea of community since it transcends geographic limitations, and can incorporate more dispersed, including virtual affiliations. Day and Schuler also place agency at the core of community action, where:

> Community and voluntary sector groups and organizations form the bedrock of community life through the planning, organization, provision, and support of community activities and services. Although usually under-resourced and over-stretched the community and voluntary sector play a significant role in building and sustaining community. (Schuler and Day 2004: 13)

Of course, while community organisations can be the bedrock of communities and over-stretched, they can continue to be constrained by their structural relationships with funding authorities, boards, and other holders of authority and resources, resulting in calling the piper's tune, rather than a process of authentic and free-flowing community development (Stoecker 1996; Ife 2002: 164-166). And of course, like any other form of social organisation, internal politics and power plays can make life in CBOs messy and unstable (Lewis and Lewis 2001; Bullen n.d.: 68).

Another way of viewing the 'placement' of Neighbourhood Houses in a variety of network relationships, subject to bureaucratic and political constraints is to use the classic typology of Rothman and Tropman, developed as a means of understanding the opportunities and constraining factors in American community development (Rothman and Tropman 1970; Rothman 1972). Their framework can be applied to the analysis of many forms of community-based activity, including community and race relations (Rothman 1972; Batrouney and Stillman 1993). Rothman and Tropman's models contextualise some of the opportunities and constraints under which much community development work is undertaken.

Model A, or Locality development, most frequently refers to community change strategies pursued at the grass-roots level, through as wide a range of people as possible. This is one of the most familiar manifestations of community development, including philosophies and

strategies of self-help, and empowerment. Such functions are important to understanding the community enabling work of Neighbourhood Houses. ICTs in this context provide skills and knowledge for people to participate more effectively as informed and capable citizens. The development of human agency for problem-solving and action is critical (*pace* Bhattacharyya and Giddens), and underpins what is also known as participatory or collaborative research (Stillman 2005; Stoecker 2005b).

Model B includes a social planning approach, which 'emphasizes a technical process of problem-solving with regard to substantive social problems' (Rothman and Tropman 1970: 22). Such techniques are those that may be applied by social planning staff and managers in local government, academics, or at a state government level, those responsible for policy development and funding programs. Investments in ICTs by government for community organisations can be seen as an attempt to further extend technical problem-solving and administrative and information or knowledge management processes into the community sector. Bhattacharyya suggests that this form of community development can be highly deterministic and 'agency robbing', imposing solutions on a community. Model B reflects a rationalising positivism which imposes the views and methods of the expert or bureaucrat upon the subject, whether or not the subject community of an 'intervention' actually feels and understands the problem in the same way. The bureaucratic-technical *Weltanschauung* of Model B can be seen to come into opposition with Model A—what the 'community want' and what 'bureaucrats want' are not always the same thing—and the language and techniques in which each are expressed do not always move along parallel pathways either.

Model C includes social action approaches to community, such as neighbourhood and community advocacy and direct action. Such an activist, (and frequently oppositional stance), constitutes the critical community development stance proposed by Ife, and used by such influential (and for some, notorious) exponents as Saul Alinsky in the USA (Horwitt 1989). The ANHLC for example, has a mandated advocacy and action role on behalf of its members, though this is tempered with the caution of being funded by government.

The intersection of these three models can be used to analyse the situation of Neighbourhood Houses (as with many other types of CBO). The various dimensions of community development have been subjected to enormous pressure in recent times, subject to changing policies and relationships with different levels of Australian governments (local, state, and federal). Thus, as observed in the previous chapter, the decline of Keynsian welfare and support and its replacement by market-oriented neo-liberalism has put pressure on the capacity of agencies to act independently. CBOs such as Neighbourhood Houses can therefore become the spaces in which the intersection between private and public spheres is increasingly bureaucratised in the context of community building, used by the state as 'gap-fillers' in the provision of social services (Stillman and Stoecker 2004).

Using Rothman and Tropman's typology, community development is thus viewed by government seen as an instrument for rationalised policy goals (taking up Model B), rather than Rothman and Tropman's Model A or C. Using Bhattacharyya's formulation, neo-liberalism, for all its emphasis on choice and individual capacity, therefore potentially undermines the capacity of many CBOs to independently create capacity and social solidarity.

However, governments with a reform, rather than strict neo-liberal agenda have demonstrated an interest in renegotiating relationships, based on an interest in community intermediaries such as Neighbourhood Houses in that they can 'help develop stronger linkages between government agencies and neighbourhood institutions and can build capacity to solve human services problems at the grassroots level' (Poole and Colby 2002: 143).

Community development has also been enriched through the insights of feminism and gender studies. Research into Neighbourhood Houses has clearly documented the influence of feminist perspectives in the movement (Permezel 2001). Adopting a perspective from feminist geography (Massey 1994), itself drawing upon the work of Harvey (1989), and Hagerstrand in space-time geography (see p.158ff.), institutions such as Neighbourhood Houses are seen as places firmly located in spatial local communities, at the intersection

between the public and private spheres. Neighbourhood Houses are 'bundles' or 'containers' (Hagerstrand 1970; Hagerstrand 1975) of particular, socially-constructed action and experience in the routine lives of people mapped to particular time and space settings. While it is well known that in the world of men the cross-over between home and 'the office' is found in informal settings such as the local pub or bar, there has been much less interest in the reality of 'proximate' spaces for women in the intersection between home and the rest of society, though Neighbourhood Houses constitute one of these informal spaces where social capital is built and exchanged (Down and Taylor 2003).

Public spaces such as Neighbourhood Houses are consequently drawn into the mix of private and community communication and activity. This occurs at the liminal boundary of interaction with public authorities where more formalised communicative frameworks and more distant normative and judgemental frameworks are encountered through interactions with state institutions, particularly in the welfare area (Stillman and Stoecker 2004). Feminist research also argues that the 'enacted' citizenship of many women is still located in specific geographic spaces, particularly in disadvantaged communities (Hanson and Pratt 1995). There are core reasons for this place-based phenomenon. Many women are time-constrained because of social reproduction and care responsibilities, but frequently, especially in low-income communities, geographically-constrained by lack of private transport or poor public transport. Private space is overwhelmingly identified with the informal process of social reproduction (family, child-rearing, aged care, helping the sick). Using Hagerstrand's language, we can say many people (predominantly women) are caught in particular time-space 'bundles' and 'tubes' through which activity is conducted (Hagerstrand 1970). The free time they have can only be 'spent' in local neighbourhoods. Furthermore, since the process of social reproduction is largely dominated by women, the helping, skilling, and communication services offered by Neighbourhood Houses are of most interest to those whose lives are located around particular streets, neighbourhoods and communities.

Neighbourhood Houses can be consequently interpreted as 'sites of enaction' (Permezel 2001: 57ff), in which the private world of home and care (overwhelmingly performed by women) is brought to bear upon the face of public citizenship and interaction. Rather than

functioning as an impersonal centre operating according to a rationalising agenda such as found in more formal educational or support settings, Neighbourhood Houses bring the private and public spheres together.

Such a perspective is familiar from more abstract areas of social theory. Habermas speaks of the 'colonization of the lifeworld' the world of everyday meanings and understandings, and the 'public sphere', with its complex and pervasive systems of dominant ideologies, power and control through systemic reproduction (Habermas 1974; Habermas 1984), reminiscent of Heidegger's critique (Heidegger 1977) of technological modernity. This perspective also echoes that of Foucault's critique of classic juridical theory. Foucault criticises the assumption that all citizens possess transactional powers and rights, when the reality is something otherwise—the poor, the infirm (and women) are dominated by power structures which disable their effective conduct as citizens (Foucault and Gordon 1980).

These insights into the intersection of different life spheres also suggest that the intersecting relationships in which Neighbourhood House work is placed can also be ones filled with tension, characteristic of the struggle for many community-based organisations to maintain a balance between what could be called Rothman's Model A 'locality' focus, with their interest in authentic communication, in contrast to their co-option (by reason of funding arrangements) as agencies of planned social control and development (Rothman's Model B).

Due to such constraints, the type of activism or community engagement that appeals to many women is directly related to a preference for action, set in part-time work, located locally, and oriented to home-based activities such as child-rearing. For men who do not fit into traditional post-school learning structures, the informal learning opportunities offered by Neighbourhood Houses are closer to home and non-judgmental, and they offer the opportunity for socialisation and companionship.

The Australian perspective developed by Permezel is one also supported by research elsewhere, such as that by Stall and Stoecker (1998), who argue that the role of gender in what they term 'community organizing' (the American term for community development), has been overlooked by scholars until recently, notwithstanding controversies about the

danger of applying essentialist categories to gender (Martin 2002). It remains a continuing fact that men's and women's needs and styles in community development are frequently different. Thus, Permezel noted a derision of Neighbourhood Houses in the 1990s in some parts of the bureaucracy (during the peak of neo-liberalism), with Neighbourhood Houses being cited in one report as places where 'a bunch of women who do macramé', with 'feral committees of management' according to one bureaucrat. It is clear that (male) bureaucrats gave little credence to activities with social and community bonding outcomes, trite as their content might seem to privileged, middle-class outsiders (Permezel 2001:192). Similar stories arose during the interviews conducted for this thesis (see also p. 220).

Given the lack of recognition and undervaluing of the social dimensions of the frequently gendered 'enacted' world of Neighbourhood Houses, a fascinating research question is how much ICTs have been able to bridge the hitherto invisible, gendered, and bounded locality of CBOs such as a Neighbourhood Houses into less-bounded world of asynchronous (but potentially bonded) virtual network relationships and information exchanges with outsiders in the 'public sphere'? How possible is it to make this hitherto largely unknown and invisible use of ICTs visible, *pace* Suchman (1995; Wellman 2001)?

A more recent critique of community development has incorporated elements of structuration theory (Hustedde and Ganowicz 2002). The discussion here anticipates a much more detailed examination of structuration theory in later chapters, but a number of key points can be raised here. The authors note that community development as an inter-disciplinary academic and practice field lacks an integrated theory, particularly around the issues of structure, power, and shared meaning, including the relationship between micro and macro levels of social activity. With its focus on empirical data and activity, the community development profession has 'many practitioners who want to dispense with theory and "get down to earth"' (2002: 2).

Three relatively unintegrated groups of theory have been particularly influential, in their opinion. The first they identify as Parsonian structural functionalism, with its emphasis upon system maintenance (see p. 129). This influential body of theory has provided insight into how structures and organisations work, but little insight into the process of change.

The structural functional approach can be identified with at least the first two categories developed by Rothman and Tropman (see p. 67). Second, they identify theories of power and conflict, which while useful in understanding and bringing about change at the macro level (for example, political change, or social movements), has not proved useful in understanding the mundane and ordinary process of life—the 'invisible', gendered world of social reproduction, for example. These issues, as we shall see, are particularly familiar from Marxist critical sociology (see p. 119). Third, they suggest that while symbolic interactionism and other constructivist frameworks, familiar from Blumer, Goffman and others (Goffman 1997; Blumer 1998), have provided considerable insight into micro-level interactions, the body of theory has little integration into theories which strive to understand the macro level across relations of production, class, power or gender.

What Hustedde and Ganowicz find particularly important for community development theory and practice is that structuration theory offers an integrated and dynamic means to understand the *process* of community development, which emphasises organic growth, the development of cooperative behaviour, and problem-solving within particular communities, within the context of greater, societal enabling and constraining forces. The following insightful comment can be elaborated with respect to the work of Neighbourhood Houses and similar organisations in the following way, prior to a more detailed analysis of structuration theory:

> Coming back to the community development profession and its key concerns, Giddens' model is perhaps best suited to grasp how social agency is exercised and solidarity established amid and often against the existing structural divisions of society. Modalities represent the level whereby solidarity is established by people following the symbolic norms and patterns available to them based on their cultures and traditions. Behavior is neither haphazard nor merely a reflection of the existing social structure and its divisions, but it follows certain paths (modalities) established and available to people through the cultural patterns. Similarly, new rules of behavior also occur through the medium of modalities, in this instance their creative redefinition. This is how the existing divisions can be overcome and new bonds between people forged. For this to take place, a genuine social creativity is necessary, meaning people coming up with solutions and ideas that simultaneously draw on their cultural traditions (common reference point) and transcend those, as a basis for new bonds, new patterns of solidarity to be put into place. (Hustedde and Ganowicz 2002: 10)

Such a picture of structuration recognises the dominance of creative, rather than rationalising philosophies in the life of CBOs, linked into the development of structural principles around social solidarity.

Chapter conclusions

This chapter has provided some contextual empirical and theoretical background about the work of Neighbourhood Houses. Neighbourhood Houses, at least in Victoria, are present in many communities. They provide a full range of community development, support, and informal education activities to young and old people. As community-managed organisations, they rely upon strong linkages with their local communities, and at the same time, they play a key role in community development activities in their local communities.

From the perspective of community development, Neighbourhood Houses function as agencies which provide enacted 'solidarity and agency' (see p. 66) to local communities. The literature also shows a variety of viewpoints about the different purposes of community development and its relationship to different sectors, such as government. From the perspective of Rothman and Tropman in particular, Neighbourhood Houses can be seen to negotiate a role between at least three key purposes. The first is place-based local community support, very familiar from the many different sorts of support, problem-solving and educational programs that they run. Secondly, they have a community advocacy role. The third function or purpose, is that of an agency caught up in the planning and development processes, subject to various technically and rationally oriented pressures, particularly those from government. This latter position, as an agency that is at the boundary between the community and the public sphere is subject to governance from players such as government which have moved towards new models of accountability and control, and this externalising relationship is particularly interesting given the presence of ICTs in communication processes.

But as local organisations, Neighbourhood Houses are firmly located in spatial communities and relationships, and are particularly connected to the private sphere of family and home support and social reproduction, and they act as a connecting or proximal point to the public sphere of government and other services. This frequently gives their

work a gendered quality, though not exclusively so. A research challenge is to make these previously neglected and less visible micro and macro-level interactions better known.

Hustedde and Ganowicz's framing of the situation of community organisations in a structurational framework is also important, because they have attempted to provide an overarching theoretical framework for both the object of community development, as well as a theory for how 'social agency is exercised and solidarity established amid and often against the existing structural divisions of society'. The theory of structuration as it relates to the agency and placement of Neighbourhood Houses in broader social networks and relationships, including the relationship of workers in Neighbourhood Houses who use information technology, will be introduced in following chapters, and then used as a framework for the analysis of the interviews with Neighbourhood House workers.

5   What is technology in community-based organisations?

Government and community-organisation perspectives

Internationally, governments of all persuasions have been interested in modern ICTs because of their potential for new efficiencies in information transfer and cost savings in service delivery to the community, as part of what is seen as an overall change to virtual, rather than co-present information, knowledge, and service flows. These knowledge flows substantially replace, or add value to other sectors of the economy, such as traditional manufacturing (Munro 2000). Critiquing the Marxist Poulantzas' picture of a dominant ideological and power apparatus filtering through the political, economic and civil society components of the nation-state, Carnoy and Castells have argued that the electronic transformation has lead to many changes, including the observation that:

> Economic relations have been transformed by economic globalization, the reorganization of work, and the compression of space, time, and knowledge transmission through an information and communications revolution. Knowledge and information have become far more central to economic production and social relations, but the locus of the relation between power and knowledge has moved out of the nation-state that was so fundamental to Poulantzas' analysis. (Carnoy and Castells 1999)

Australian governments have suggested that there is the potential for a new conversation between citizenry and government through enhanced 'e-democracy' 'e-service', and new forms of social interaction and participation, including the building of social capital through better use of ICTs (Australia. Information Technology Review Group 1995; Meredyth, Ewing et al. 2003; Department of Communications Information Technology and the Arts 2005c). Indeed, the concept of social capital frequently figures in the discussion at a political and research level, given the key role that community organisations are believed to have in the development of social capital within the community at large (Industry Commission (Australia) 1995; Raysmith 2001b; Raysmith 2001a). Prominent politicians

(both of whom have had prime ministerial aspirations) from the Labor[18] and Liberal parties[19] have adopted the notion of social capital within their particular visions of government-community relationships.

While it is beyond the scope of this research to entirely revisit controversies over the utilisation or measurement of social capital for community building, a brief review is useful. A key critique of social capital revolves around its use as a stop-gap measure based upon putative citizen good-will as a substitute for state intervention or investment. Additionally, its empirical truth—at least what causes it and what is to be measured through its existence—is equally controversial. Indeed, the notion of social capital being a commodity for storage and exchange in the marketplace is disputed (Scanlon 2001; Winter 2001; Scanlon 2004).

The relationship between the use of ICTs and their particular social effects (such as the creation of 'community' and contingent social capital) has been subject to a number of studies in research literature on communities and technology. Generally, a positive effect on social capital is seen as a benefit of the adoption of ICTs, though this is contingent upon degrees of prior engagement with other members of the community and their networks (Gurstein 2000; Pigg 2001; Wellman 2001; Preece 2002; Arnold and Gibbs 2003). However, more critical approaches have not been expressed in the ICT literature. From a critical perspective, the valorisation of a social product such as social capital, decontextualised from questions of power, class, race or gender, into a commodity for manipulation through different social policies is seen as another example of the alienation of the fruits of labour, or what Negri and others term the 'immaterial' labour found in the

---

[18] Mark Latham, former Leader of the Opposition, (Latham 1998; Latham 2005, Introduction), and numerous public statements.
[19] Peter Costello, Federal Treasurer, 'The view I am putting is that there are non-monetary things that add to the wealth of a society. Civic engagement and the values which it promotes like trust and tolerance are some of those things. You can call them social capital if that is conceptually easier. It might help with the idea of building them up, running them down, adding to our wealth, or detracting from it. But a society which has these things should be careful not to let them run down. Once they are gone it takes a lot of effort to get them back again.' (Sydney Morning Herald, July 16 2003, http://www.smh.com.au/articles/2003/07/16/1058035070852.html. Accessed: 15 February, 2004)

manipulation of intellect through the new technologies by business, government and industry (see below p.126)[20].

In the mid-1990s, Eva Cox introduced the concept of social capital to Australia drawing upon the work of Robert Putnam, and interestingly, in an era devoted to measuring outputs and quantifying welfare service practice, noted that:

> I am deliberately using the term 'capital' because it invests the concept with the reflected status from other forms of capital. Social Capital is also appropriate because it can be measured and quantified so we can distribute its benefits and avoid its losses. (Cox 1995, Lecture 2)

Putnam himself, drawing upon the earlier work of Coleman and the American liberal pluralist tradition (Coleman 1988), had said that:

> [W]hereas physical capital refers to physical objects and human capital refers to properties of individuals, social capital refers to connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them. (Putnam 1995)

The other major theorist of social capital, Pierre Bourdieu, offered a different approach to conceptualising social capital, regarding social capital as a resource in the struggles over power and the advancement of interests in different fields (economic, cultural, and political). This approach is more directly political, in contrast to the communitarian thrust revealed in Putnam (Siisiäinen 2000). Social capital is thus an aspect of 'accumulated history', within what he calls the *habitus,* and is:

> [T]he aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. (Bourdieu 1986: 248)

---

[20] The starting point for these critiques is Marx, who, in the *Grundrisse*, identified the manipulation of intellectual capital as key in capitalism: 'Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry: natural material transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand: the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge [*das allgemeine gesellschaftliche Wissen*] has become a direct force of production, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and have been transformed in accordance with it.' (Marx and Nicolaus 1973: 706)

However, despite Cox's claim about the measurability of social capital, the concept has consistently proven difficult in practice, given the complex nature of accumulated human relations in widely variant situations, and the generic complexity of evaluation of community capacity-building initiatives, in which social capital features as a core dimension (Kubisch 1997). A qualitative relationship can be difficult to quantify and a procedural algorithm to use in replication of a social phenomena does not exist. Thus, one major Australian consultancy for government concluded much more empirical work was needed to identify the causal factors which lead to community well being and positive influences on social capital, though the Australian Bureau of Statistics has produced its own research documentation (Australian Bureau of Statistics 2000; Black and Hughes 2002), and another government study demonstrates the complexity of trying to identify and support the mix of social-technical factors that represent successful examples of ICT as a community-building tool (Department of Communications Information Technology and the Arts 2005c).

Notwithstanding the difficulty of measuring *what* social capital is, or *what* are the causal links for its successful implementation, the concept, as noted, has been attractive in policy discourse, particularly since Putnam has emphasised the importance of voluntary associations in the development of reciprocal (and thereby mutual) relations, and this view is also held in Australia. In Australia, given the large number of volunteers involved with CBOs, the community sector is seen as an integral component in the development of social capital (Zappalà 2000; Australian Bureau of Statistics 2001a). The community sector, as previously established, has a key role in establishing strong social networks through its casework and community development activities, in partnership with other community-oriented sectors, including law enforcement, education, housing, local government, and philanthropic organisations (Industry Commission (Australia) 1995; Lyons 2001; Raysmith 2001b; Raysmith 2001a).

Thus, addressing the Neighbourhood House movement, Anglican bishop Michael Challen saw Neighbourhood Houses as mediating structures in development of positive social capital, at a time when the linkage between government and community was under threat from rationalising agendas. Neighbourhood Houses, as already discussed, are mediating,

proximate, or liminal places on the intersection between the difference spheres of life, and the lifeworld which they represent is one that values social, rather than exchange use of social capital:

> We need mediating structures. I see Neighbourhood Houses as being one component of these. I picture several Neighbourhood Houses in cooperation with one another to influence the personal thinking of municipal councillors, of shaping the council's agenda; of eliciting their support to communicate with governments and other power centres located elsewhere. I see coalitions of people cooperating with one another to expand the framework of public discourse and public policy, replacing the deceiving cliché that the bottom line is the dollar with the essential truth that the bottom line is people. (Challen 1998)

These are significant remarks in a number of ways. Challen, as a major figure in social welfare (at that time, Director of the Brotherhood of St Laurence, a major charity), understood community organisations from the perspective of a person with a welfare, religious, and political perspective, and as a senior community leader. He also understood the importance of networks to social capital, and the importance of the value sets within which many community organisations work. Challen was also aware of the place of Neighbourhood Houses in political relationships and in effective communications, of which ICTs are now inevitably part. Challen clearly expressed a set of values familiar to his Neighbourhood House audience.

As another example of the interest in the relationship between social capacity and community building in Australia, another organisation, Our Community, active in developing funding and communication links in the community sector through new ICTs, tabled a manifesto at one of its conferences, which includes the following statement:

> Community groups are the practical means of generating social connectedness (social capital) and community networks. These social relations have a huge impact on economic and social innovation, as well as on people's health and well-being. (Our Community Pty Ltd 2003)

However, there is awareness that the connection between social capital and ICTs is fraught with difficulties. As observed previously (see p. 57), despite enthusiasm about new ICTs, by the mid-1990s in Australia, peak welfare organisations indicated concerns about the emergence of a 'digital divide'— unequal access to infrastructure and applications, skills,

and content (The National Office for the Information Economy 2002)— in the third or community sector, given structural inequities in skills and resources (Australian Council of Social Services 1996; Victorian Council of Social Service 1997). Limitations of resources, capacity, and orientations to new forms of information exchange and creation mean that many organisations continue to use a narrow range of technologies, despite the ready availability of technology options (Wyatt 2001; Geiselhart 2002; O'Neil 2002).

Alongside general community development and education aims, Australian government policies have reflected almost utopian expectations for transformative effectives and outcomes from the use of ICTs. This technological utopianism is not uncommon theme in policy discourse in many countries, reflected in Vice-President Al Gore's championing of an 'Information Superhighway' in the early 1990s (Wiggins 2000) and funding for public access networks, paralleled by a host of public technology programs in the UK and elsewhere (Wyatt 2001). More recent policy documents indicate a belief that there is a continuing 'vast potential' to use ICT to enhance social capital, though this potential is still largely untapped (Department of Communications Information Technology and the Arts 2005c: 4). The Australian Commonwealth government also realised a decade ago the need to reengineer its major welfare support departments to be inclusive of client needs, despite the desire for electronic efficiencies (Australia. Information Technology Review Group 1995), and the same interest in efficiencies for the community organisations through technology continues a decade later (Department of Communications Information Technology and the Arts 2005c). More recently, Commonwealth Government has commissioned Civil Society reports for the World Summit on the Information Society by CCNR, as noted previously (see p.3), and in addition, other commissioned documentation indicates an awareness within some elements of government of the need to develop a new domestic electronic partnership with civil society organisations, of which CBOs are part (Australian Roundtable on the Civil Society 2003; Australian Roundtable on the Civil Society 2005; Schauder and Johanson 2005). Furthermore, the proposal for a National Nonprofit IT council is a recognition that government needs grounded advice that can be placed at the highest levels of government (Australian Government 2005).

However, no overall history or study of community technology policy and government investment in Australia is available, but for example, the many papers prepared for the Community Networking Conferences throughout the years between 1997-2002, are evidence of government and community engagement in urban, regional, and rural contexts (Johanson and Stillman 2002). The focus has been upon technical solutions (access and hardware), rather than 'soft technology', the 'formal and informal activities and interactions that develop skills and knowledge required to maximise the use of hard technology', and the social infrastructure, the bridging and bonding factors in a community to ensure successful use (Simpson 2004). Internationally, similar programs have attracted considerable government and philanthropic investment, the outcomes of which are not always clear (Clement, Shade et al. 2002; Clement, Gurstein et al. 2003; Gurstein 2003), and discussions on lists such as ci-research[21] of the Community Informatics Research Network frequently allude to the difficulty of incorporating social perspectives in technology projects because of conceptual and political differences with funders and program designers.

Furthermore, there are few informed critiques of the context and cut-and-thrust of government ICT policy in Australia, particularly with respect to interest in market-driven solutions for the supply of broadband (Goggin 2003). Federally, the federal conservative government has spent millions on 'Networking the Nation Projects' since 1997, using funds from the partial sell-off of the national telecommunications company Telstra, yet an evaluation report, written at a considerable historical distance from events, is formulaic and has been criticised for covering up controversial parts of the program (Crowe 2005; Department of Communications Information Technology and the Arts 2005b). However, the evaluation does emphasise the need for better up-front planning of projects, understanding and demonstration of community needs and capacities, as well as a business plan before the implementation of projects, a not unfamiliar reaction of ineffectual programs which are dominated by political favouritism and special interests. The impossibility of self-sustainability for many seeded projects was observed (Crowe 2005;

---

[21] See, for example, discussions at the beginning of February, 2006 at
http://vancouvercommunity.net/lists/arc/ciresearchers

Department of Communications Information Technology and the Arts 2005b). As another example at state government level, the history of VICNET, the state government-sponsored Internet provider for community, also reveals high social-impact expectations but a failure by government to understand and manage community technology processes in the highly bureaucratic and conservative setting of the State Library. In the long-term, the constraints on VICNET have acted as a stranglehold on the development of socially innovative technologies in a semi-government instrumentality which had strong community links and concomitant expectations (Schauder, Stillman et al. 2004). As another example the Atherton Gardens project to wire low-income high-rise for residents has, with the best of intentions by government and community organisations, worked over the heads and capacity of residents for technological solutions based naïve concepts of community building, reflecting similar problems in such projects as the Camfield Estates/MIT project, bringing together some of Boston's poorest with Cambridge's technological elite (Meredyth, Ewing et al. 2004).

However, there have been some attempts to open up the issue to key stakeholders, at least in Victoria, though there may be other undocumented initiatives. At the search conference held in Victorian in 2003 by the Centre for Community Networking Research, a number of key dimensions were identified as critical to ensuring a productive electronic relationship between government and community as well as the development of community technology social and technical infrastructure (Stillman 2004).

Issues that arose at the search conference included the ambiguous and competing interpretations put upon the concept of 'community', and the difficulties of bridging differences in the development of public policy. However, the further and collaborative exploration of how new relationships might be developed has not taken place, despite the increased interest by government of place-based approaches to service delivery (see above, p. 55). Though there have been at least two parliamentary inquiries in the years since the search conference, and closed-door consultations with a range of community organisations on ICT policy, a new government vision has not emerged, other than the *Connecting Communities Program* of 2004 (Multimedia Victoria 2004). This policy does not substantially deviate from past practice.

Notwithstanding the lack of a comprehensive policy articulation, in Victoria, the government has on a number of occasions made specific reference and commitments to Neighbourhood Houses, as part of its overall social policy/technology mix in working with disadvantaged communities, and funds have been committed to support them. In 2001, the Victorian Community Services Minister, Christine Campbell, reflected this viewpoint in a press release linking investment in community IT with positive outcomes for community building:

> Places like Neighbourhood Houses are the glue that helps hold communities together. The funds
> to get them online, upgraded and get staff Internet-trained will help give access to the information
> age to people who otherwise might not have access. They also provide another resource for
> Neighbourhood Houses to keep in contact with each other, work together and knit stronger
> networks. Community building happens bit by bit, brick by brick, and helping Neighbourhood
> Houses be part of the construction is vital. The bottom line is stronger communities. We know
> strong communities mean fewer social problems and less isolation, crime and homelessness
> (People Focus 2001) .

In 2002, the role of information and technology and information exchange in supporting five 'Broad Activity Areas' was emphasised in Department of Human Services policy towards Neighbourhood Houses in such statements as 'Neighbourhood houses may help other community groups by providing resources, such as skills, technology, information, and use of facilities', or 'Neighbourhood Houses support the use of information technology to access information and communicate', and 'Neighbourhood houses have the IT infrastructure to support communication across neighbourhood houses and with other services, particularly those in isolated and rural areas, and to access information to support their activities' (Family and Community Support Branch. Community Care Division. Victorian Government Department of Human Services 2002).

After a portfolio reshuffle, very similar sentiments were expressed at another funding launch by the new Minister, Bronwyn Pike and as stated in that press release (Human Services News 2002):

> Neighbourhood House Week has highlighted the result of the Government's $6.5 million
> investment in connecting Neighbourhood Houses across Victoria to the Internet…The Houses

> reach out to thousands offering work training, recreation and social contact and are helping break the cycle of isolation for many groups, including young mothers and older people.
>
> The Internet connections will have real benefits for communities within Victoria exchanging ideas, discussing programs and building new links locally and globally.'

More recently, government has further extended its commitment to ICTs investment in Neighbourhood Houses, possibly in response to research about Neighbourhood Houses and lobbying conducted by the Centre for Community Networking Research (Centre for Community Networking Research 2005). A further $12.4 million was allocated in April 2005 to establish 10 new Neighbourhood Houses as well as provide more assistance with technology (Stillman and Stoecker 2004; Department of Victorian Communities 2005) and most recently, an additional $28 million has been allocated over the next for years for general support (see p. 65).

Welfare services research and technology

Community development literature by and large (at least that literature from English-speaking countries published in books, journals, or elsewhere online), does not offer substantial theoretical insight into the question of technology in community organisations. The one exception is that found in community informatics, which is still in its own period of self-definition, and relationship building with other disciplines, including community development, and that field is discussed below (see p. 97). While there are many practice reports about communities and technology, available on English-language government and foundation websites, they are largely instrumental and descriptive. They highlight the problem of insufficient infrastructure and support for technology in community-based organisations, in addition to pressing problems of governance and infrastructure (Our Community Pty Ltd 2003). Worked-through theoretical frameworks to inform policy (and research) are lacking. However, at least one peer-reviewed study has observed that there is an additional problem in applying conventional management theories to CBOs. Burt and Taylor surveyed the intersection between values and technology in UK CBOs, and argued that there is a need:

> [To] go beyond the 'structural' associations which emerged from [their] survey towards an understanding of the organizational 'psyche' and the ways and contexts in which it is played out. Organizational biographies in the form of in-depth case studies permit these deeper insights to be revealed. (Burt and Taylor 2001: 56)

The reference to 'biographies' is an interesting one, suggesting the desire for in-depth, ethnographic, and interpretive methodologies to explore the 'inner life' of organisations through obtaining data that cannot be vivified through quantitative means. A recent collection of essays (Harlow and Webb 2003) from the UK highlights a number of issues of concern in the transformation of social and community welfare practice, including, as already noted (see p. 54) , the impact of the new managerialism with its emphases on 'efficiency and effectiveness', and calculable risk, hallmarks of modernity (Giddens 1990; Giddens 1991; Beck, Giddens et al. 1994). While the volume focuses on direct welfare practice rather than community development, support, and education as conducted by Neighbourhood Houses, the issue of the reconfiguring of welfare work with the parameters of ICT information exchanges is highlighted as problematic. Other papers in the same volume offer considerable insight into the relationship between welfare organisations or CBOs and their adoption (or non-adoption) of ICTs.

In the same collection, Harlow, using a feminist perspective, argued that women's 'relational and managerial skills' are socially constructed, rather than biologically determined. Following the work of researchers as Wajcman and MacKenzie (Wajcman and MacKenzie 1999; 2001), she argued that such a gendering of work relationships involves an iniquitous set of passive relationships with technologies and technical systems (overwhelmingly designed by men), where women are situated as technological incompetents (Harlow and Webb 2003: 17).

Such a dystopian view of the effect of ICTs on women is carried through by other authors in the volume, though Gould offered a somewhat broader perspective, realising that there was a need for a coherent body of theory about CBOs and ICTs. He suggested three factors which influence the body of theory which might emerge (Gould 2003). First, drawing from European research, there has been an attempt 'to build an indigenous model, in particular one that rescues dimensions of computing within social care from the cruder forms of

technological determinism and preoccupation with technical fixes'. This he calls 'social informatics', familiar from the work of Kling and others (Kling 1973; Kling 2000). Second, Gould notes the problem of 'translation' of theories of the learning and knowledge organisation from the commercial sector to human services (the problem of the quantification of human processes into inputs and outputs, with commercial discourse and values being blindly applied to human-centred processes). Finally, the vogue for knowledge management is noted, with its emphasis on preserving organisational memory, something that could be potentially put to good use in welfare organisations if sensitively implemented.

However, Gould noted that critical theories, which offer alternative interpretations of management or disciplinary discourse frames, leading to deeper and more appropriate understandings of technology relationships have yet to emerge in the welfare field (see also Day's discussion, p. 55). A consequence of the lack of a theoretical hook into theories of technology is that the consideration of technology in the welfare and CBO context lacks analytical bite.

Insight on this latter point is offered by Webb (2003), who presents a new theoretical framework, in the same volume, coining the expression 'technologies of care'. Adopting an Actor Network perspective (see below, p.179), he speaks of new technologies interacting with 'an assemblage of technologies of human governance', that is to say, the different dimensions of human and machine agency in particular cultural, social, and political relationships. From the perspective of welfare and community research, as well as in Foucault, 'technology' can be re-interpreted to include human processes or practices and techniques involving the use of resources and power, incorporating a body of knowledge and practice which can be complemented by ICTs (Foucault 1988; Kondrat 1994). Such a broader definition of technology hearkens back to classical understandings of technology as a skill and process (Bell 1980)[22]. The particular methodologies used in community development work are akin to a valid technical discipline or process. Technologies of care

---

[22] As another example of the broader understanding of technology as a mix of skills, tools, and processes see the discussion of different sorts of thieving, each with a particular technology (tools, skills, particular languages such as cant, and relationships) (Macintosh 1971).

are a derivation of the practice of 'technical rationality', a useful fiction of scientific objectivity used to justify power relations and the derived control that underlies practices of governmentality. Thus, 'technologies of care' are within the framework of an Foucauldian ensemble or technology of controlled governmentality, that is, the practices of self-control, social control, the administrative rationality of the state, and its controlling parcel of different types of knowledge (Foucault, Faubion et al. 2000: 201-222).

Artifactual technologies (ICTs), as an extension of controlling and surveillant administrative technologies, are used to reinforce particular and rationalising technologies of care, as defined through the official normative frameworks of the state or organisation. Authentic 'intersubjective' communication is reshaped into particular sets of discourse and process, by reason of their incorporation into the power networks contained in the bureaucracy, including the manipulation and storage capacity of modern technology. Webb thus claims that:

> These new technologies of care—with ICTs as the central information hub— increasingly come to colonise policy making and front-line practice in welfare services. (Webb 2003)

This is a strong claim, and the interviews in this thesis will be used as a testing ground for the implications of this statement. In fact, as the later empirical and theoretical chapters in the thesis demonstrate, the reality of the 'technologies of care', at least for Neighbourhood Houses, is something more stepped, subtle and tenuous. While in the final analysis, to use a Marxist phrase, there may be critical and determining factors that help to shape the external environment in which Neighbourhood House practice is conducted, the value set of Neighbourhood House workers continues to be driven by a human-centred orientation, and the people skills they use with artifactual technologies can be characterised as a bundled together as 'technologies of care' that is by and large, controlled by them.

This discussion also echoes other critical writing about organisations where Reed, for example, argues that the modern organisation (speaking of commercial enterprise), is a struggle around control of strategic social technologies (Reed 1992: 281ff). Thus, artifactual technologies of control (i.e. computers, memory and information systems), are resources drawn upon in that struggle. Webb also refers to Rose's *Powers of Freedom*, with

its echoes of Foucault and Habermas. Habermas' discussion of 'work' (itself a descendent of Weber's discussion of rationality) is particularly relevant at this point. In an influential essay on technology and science as an ideology, he argued that:

> By 'work' or *purposive-rational action* I understand either instrumental action or rational choice or their conjunction. Instrumental action is governed by *technical rules* based on empirical knowledge. In every case they imply conditional predictions about observable events, physical or social. (Habermas 1972: 92)

'Normalising' prescriptions for welfare are consequences of the technocratic framework and discourse, which strives for calculable predictability. Nikolas Rose, following a similar argument therefore says that:

> Technologies of government are those technologies imbued with aspirations for the shaping of conduct in the hope of producing certain desired effects and averting certain undesired effects. A technology of government, then, is an assemblage of forms of practical knowledge, with modes of perception, practices of calculation, types of authority, forms of judgement, architectural forms, human capacities, non-human objects and devices, and so forth, traversed and transacted by aspirations to achieve certain outcomes in terms of the conduct of the governed. (Rose 1999b)

This argument is familiar from Habermas, with his attempt to distinguish more authentic forms of communication from the layered constraints imposed by external rationalising forces, particularly the bourgeois state. Habermas' thesis is complex, and like Giddens, Habermas has developed different foci over many decades, though elements of it appear in his earliest works on technical rationality in western democracies, which began to appear in German in the 1960s (Habermas 1972; Habermas 1974). At the core of his theory of communicative action is the distinction between what he calls genuine everyday communicative action and its rationalisation through external forces:

> [T]he contradiction arises between, on the one hand, a rationalization of everyday communication that is tied to the structures of intersubjectivity of the lifeworld, in which language counts as a genuine and irreplaceable medium of reaching understanding, and on the other hand, the growing complexity of subsystems of purposive-rational action, in which actions are coordinated through steering media such as money and power. (Habermas 1984: 342)

However, Nikolas Rose disputes aspects of Habermas' thesis concerning the negative impact of the state or public sphere on genuine communication processes, with its implication of creeping determinism that is devoid of the capacity for human agency and resistance. Habermas' viewpoint has also has shades of Marcuse's dystopic picture of a one-way, techno-rational modernity, and Heidegger's division between authenticity and modern technology (Feenberg n.d.):

> [L]inks between the political apparatus and the activities of governing are less stable and durable than often suggested: they are tenuous, reversible, heterogeneous, dependent upon a range of 'relatively autonomous' knowledges (sic), knowledgeable persons and technical possibilities. (Rose 1999b: 18)

Indeed, according to Rose, such technologies of governance are distributed through a range of:

> [P]roblems, means, actions, manners, techniques and objects by which actors place themselves under the control, guidance, sway and mastery of others, or seek to place other actors, organizations, entities or events under their own sway. (Rose 1999b: 16)

In translating this statement to the micro-world of the Neighbourhood House, a better understanding of 'relatively autonomous' actions, knowledge, and relationships, at least from the perspective of the community development worker, will offer insight into self and organizational governance with, and via localised material technologies, as well as particular technologies of community or welfare practice.

A range of associated reflections appears in the research literature on ICTs in the community or welfare sector. For one group of writers, 'technology' has a generic meaning, which sees any *process* or *treatment* as a form of technology, though Kondrat prefers to regard social or welfare work as a 'body of knowledge', organised for practical purposes (Kondrat 1994). While artifactual technology (computers, faxes, phones, copiers) are accepted as tools with instrumental and material existences, Poole and Colby, citing Glisson, see technology referring to the facilities, hardware and staff (what Giddens would call allocative and authoritative resources, see below, p. 155), that 'create the service produce or provide the service' in welfare or community practice (Poole and Colby 2002).

Additionally, Sandfort (in the discussion detailed below, p. 94), also suggests that, 'in human services organisations, the actual package of services provided to clients is defined as core organizational technology.'

A similar and independently derived understanding of technology was revealed in research about ICTs and Neighbourhood Houses in Victoria. Based upon interviews with Neighbourhood House coordinators in the mid 1990s, a report on technology needs highlighted the unease at that time with the introduction of computer technology into Neighbourhood Houses. It was felt to threaten 'genuine, co-present interpersonal personal interaction', and that the introduction of new technology threatened the balance 'between the energies devoted to those [electronic] activities and their more traditional means of facilitating well-being' (Dillon, Gammon et al. 1995: ii, 41).

The reason offered to justify this observation was the perceived tendency of workers to become consumed by both IT maintenance and tasks and the subsequent divergence from core community development and support work. Interestingly, the writers were also alert to the social construction of technology and argued that the male world of business and market-oriented practice was quite different to the world of the Neighbourhood House. It was argued that 'cultural barriers made it more difficult for women to derive benefit from the personal use of computers' (Dillon, Gammon et al. 1995: 4). Consequently, the report developed its own definition of technology: 'a technology is a set of potentials for doing things—it facilitates experiences', and went on to argue that Neighbourhood Houses embody a set of techniques about social and community development (Dillon, Gammon et al. 1995: 47).

Other reports and research on the adoption of ICTs in the welfare sector reflect related concern about the impact of ICTs on welfare practice. While the research is about social work, the implications of the research for community development work are unavoidable. In one Australian study, a voluntary email survey was conducted of social workers employed by Centrelink, the major government agency concerned with social support. The fact that the study was of a government agency already distinguishes this study from those of community-based agencies. Notwithstanding this research distinction, the study noted

the relative inequity in IT resources between community and government departments. In addition, the study revealed that many workers had low levels of training and confidence in their use of ICTs, despite the heavy reliance of Centrelink on call-centre support of clients. It was suggested the lack of training and confidence led to a procedural, rather than creative use of poorly understood client management systems. The report was still optimistic about the adoption of new technologies, observing that telephone counselling services were an appropriate substitute for face-to-face counselling in many situations (Humphries and Camilleri 2002).

In another study of social workers in Norway, Lie explored issues of gender and technology in social work, aware of the response by feminists to gender blindness in such labour process theories such as Braverman (on Braverman, see p.123). Critics had felt that Braverman's emphasis on deskilling through automation and the degradation of work did not pay sufficient attention to the differences between men's and women's work (Braverman 1975; Kitay 1997). Lie was also aware that men are under-represented as social workers and that as a consequence, a gender-representative study within social work may be impossible to conduct. Despite this problem, she claimed that she had never met such 'united opposition' to computing (Lie 1997: 128). Apparently, the integration of computer processes with social work was not at all seen possible by her sample (Lupton 2000). Whether or not the strong opposition to computing by the Norwegian social workers at that time continues to be the case is something worth further exploration.

Based on qualitative interviews, she noted that 'difference and distance are catchwords to characterize the relationship between social workers and their computers' (Lie 1997). Computers were seen as foreign and distant to ways that social workers work. Social work has its own specific methodology or technology, a specific, intuitive, and reflexive client-centred way of thinking acquired through particular training, a way of thinking which could not be replaced by information-processing or decision-making systems. Lie suggested that the process of information and knowledge management mediated by technology, framed in the more distant language of 'information processing', or 'records management' is obviously far removed from the personal construction of case work. Lie also observed that the reflexive practice (Schon 1983), of social work is also compounded by the gendered

nature of the profession (at least in Norway). This means that particular sets of skills less valued by, or accessed by men—which Lie characterised as holism, process, nearness, and uniqueness in working with clients—are only matched with difficulty through interaction with a computer's processes at centre stage.

Another Scandinavian study was conducted by Henfridsson (2000). Noting the tension between person-centred social work and attention to administrative work (carried on increasingly with computers), Henfridsson argued that ambiguity in problem-solving is at the core of many activities in the welfare workplace. The idea of ambiguity is also familiar from Weick's discussion of sense-making in organisations, and using his insights, she suggested that ambiguity cannot be solved by more information, and by extension, more complex and speedy information processing capabilities (Weick 1995). Instead, the social worker needs to make sense of what matters within a particular practice framework (what can be regarded as 'technologies of care'). This contrasts with perceived efficiency demands made through a belief that welfare work could be turned into a type of electronic claim form with comprehensive and infinitely calculable routines to be channelled through administrative ICT processes.

To demonstrate this, Henfridsson used the introduction of the First Class database as a case study in people-technology relationships. While managers regarded the software instrumentally, as an efficiency tool, many social workers had the desire for ICTs to be 'invisible'—something separate from the human-centred practice of social work, observed as 'consistent with the invisible part of their practical day-to-day activity' (Henfridsson 2000: 100). Tacit knowledge continued to stand apart from attempts to turn it into explicit, manageable knowledge, channelled and shaped by ICT structures (for example, the formatting and reporting requirements built into particular software).

However, First Class was imposed, rather than integrated or shaped into a particular human-technological community of practice. In fact, the way that First Class was introduced only served to reinforce existing communication behaviours, which reflected a 'non-existent (sic) learning organisation'. It is likely that management thought that the software would create new communications and practices, skipping the need for other more

people-focussed communication development. A solution, in Henfridsson's opinion, would be an attempt to 'revive' and process the 'ambiguities' around First Class in the social work environment and then find ways to work with existing frames of practice to avoid self-fulfilling prophecies around the unsuitability of technology. However, the challenge of dealing with ambiguity—opposed to what appeared to be techno-rational claims-processing solutions—may have been the last thing that management wanted to deal with rather than a 'reviving' process as suggested by Henfridsson.

Another literature review poses more questions than it answers, reviewing the range of frameworks available for understanding what the authors call 'hypertechnology' (Kreuger and Stretch 2000). The reviewed frameworks ranged from the utopian determinist, that the technology is both inevitable and positive in its effects; and social constructivist, that key values about technology are socially constructed, and that there is potential for a humanistic value set to effect change in how ICTs are used in social work. In addition, the article notes that a critical, radical political-economic view of ICTs sees ICTs as instruments of control and commodification. Reinforcing a familiar theme, a feminist perspective is also raised. Technology tends to be exclusionary for women. Attempting to integrate these different perspectives, the authors argue for a critical and sympathetic inclusion of ICTs into the practice of social work, as ICTs could serve to promote enlightenment and liberation through more open information exchange. How this is to be achieved however is not answered by them.

Sandfort's study of workplace processes within a number of different human services organisations in the USA offers another elaboration of the technology as process perspective, where, 'in human services organisations, the actual package of services provided to clients is defined as core organizational technology' (Sandfort 2003), though of course, in addition, the package of services for intra-organisation communication is equally significant. Sandford looked at how similar sets of procedures regarding particular government welfare programs were variably implemented in different organisations. Sandfort also observed that the difficulty for organisational analysts in looking at human services organisations is that the 'technology' is difficult to describe by those who use the complex 'package' (*pace* Gould) of services, given that so much of it is a bundle of

frequently tacit and intensive person-to-person activity. The solution is seen in an adaptation of structuration theory. Sandfort sought to identify the structures, the practices created, stored, and routinely reproduced by human actors across time and space, in different organisations, as a means of characterising how the 'ambiguous technology of either people-processing or people-changing organizations is actually carried out' (Sandfort 2003). The differentially structured practices, demonstrating different degrees of commitment to formal program guidelines (with minimal, creative, and prescriptive variants), in each organisation were characteristic of the structurated and enacted client technology in each program for implementing the formal contractual program. This insight about the potential for structuration in human services is particularly incorporated into further discussion (on page 215).

Weick's theorising about people-technology interactions is particularly valuable as a means of drawing out the ambiguities inherent in human services work, as suggested by the previous literature. Weick suggests that contemporary technology cannot be considered as a homogenous process, capable of being controlled by what he calls a prospective rationality. Indeed, technologies, because of their 'complex equivocality' force us to come to terms with what he calls 'perspectual perspectives', the mix of people and material, in which 'fallible people prove to be more resourceful and more adaptable than any control system yet fabricated'. Calculative reasoning and predictive programming cannot always adequately deal with human foibles and incertitude (Weick 1990: 39).

Because Weick's discussion appears to have been developed prior to the development of the contemporary PC and its widespread presence in the workplace, much of his discussion is framed within an earlier understanding of computing, where he speaks of 'operators' and 'stochastic events' working on the 'plant floor'. Despite this qualification, the concept of indeterminacy as a means of gaining insight into human-machine interaction is very clear from his writing:

> [U]nlike any other technologies that have been used previously as predictors by organizational theorists, the new technologies exist as much in the heads of the operator as they do on the plant floor. This is not to argue that one technology is more important than the other, but it is to argue

that cognition and micro-level processes are keys to understanding the organizational impact of new technologies.

Weick goes on to characterize the plasticity of technology and it is framed as a process and artifact that is:

Something that admits of several plausible interpretations and therefore can be esoteric, subject to misunderstandings, uncertain, complex, and recondite (Weick 1990: 14)

Drawing on Weick's picture, we can conclude that within the human services field there is a stream of writing and research which understands technology in a distinct way as a set of responses and a body of knowledge for working with ambiguous and equivocal situations, including the 'head and heart' work of welfare, counselling, and community development. Artifactual technologies are drawn into this process, and the challenge is to integrate them in a non-prescriptive, rationalising way. Such techniques cannot be easily codified or challenged through one-dimensional technology.

The perspective of community informatics and community networking

Community informatics (also known as community networking, community technology, or electronic community networking) is an emerging field of community practice, which sees new technologies as key tools for community development. Some practitioners have gone so far as to consider it a 'movement' with an agenda for social change. However, in the opinion of one writer, who has been central to community informatics activity in the United States, the 'movement' may have lost its bearings, and it can seem to represent at times, no more than a convenient label for funding and policy purposes (Graham 2005). The various labels given to the field are an indication of its emergence from different perspectives. The existence of a variety of independent attempts to coordinate practice and research on both national and international level is also indicative of the fluid situation.

Community informatics is a term particularly used by those coming from information systems or management systems approach, and it has gained some currency in the literature. Thus, according to Gurstein:

> Community Informatics pays attention to physical communities and the design and implementation of technologies and applications, which enhance and promote their objectives. CI begins with ICT, as providing resources and tools that communities and their members can use for local economic, cultural and civic development, and community health and environmental initiatives among others. (Gurstein 2000: 2)[23]

With its emphasis on material intervention, this definition gives little attention to the human side of agency with technology, and this viewpoint, and by and large, is reflected in the publications and discussions of the field as it has emerged. As a consequence, one sympathetic critic regards it as a 'woefully underdeveloped' field 'driven more by anecdotal reports and story-telling' than effective theory which gives priority and depth to the exploration of human agency (Stoecker 2005a). Despite a desire to avoid techno-determinism, discourse still appears focussed around the centrality of technology as the

---

[23] This definition is reminiscent of the broader field of social informatics, a term particularly associated with the work of Rob Kling: 'Social informatics is a field that is the new working name for the interdisciplinary study of the design, uses, and consequences of information technologies that takes into account their interaction with institutional and cultural contexts' (Kling 2000: 218)

prime material agent in the process of social change (Graham 2005), reflecting a continuing attraction to technological, rather than more complex and demanding political and social solutions that lie outside the 'technical', or 'bits and bytes' aspects of community technology. Exciting ideas and speculations about ICTs and the 'Network Society' have perhaps interfered with more the prosaic, but equally important need to understand the multidimensional nature of human activity in communities at the micro, meso and macro levels, the stuff of Merton's middle range theory (Merton 1968). The difficult challenge is to bridge a fascination with technology to a dynamic form of participatory and reflexive community practice with communities (Stillman and Stoecker 2005). This problem is of course familiar from Habermas and Rose's discussion of the power of scientific-rational ideologies and the preference for apparently rational and 'calculative' ways of acting and thinking in the current era, discussed earlier (see p. 88). Another, recent editorial about the relationship between community development and community informatics, argues that the full potential of the relationship between community and technology can only be reached if the 'epistemic regimes', or 'local knowledges', the kinds of situated affect that are core stuff of community development are given full recognition. The tension between community and technology can only be resolved if a more balanced relationship is set in place (Pigg 2005: 6).

From a historical perspective, a techno-centric discourse and conceptual frame has emerged since the beginnings of the 'movement' in the 1970s in the USA and Europe, with the establishment of community-based telecentres, pre-Internet, dial-up bulletin board networks in the 1980s, followed by an explosion of activity in the 1990s with the development of the World Wide Web (Morino 1994; Milio 1996). There is no authoritative history of how the 'movement' arose , but David Wilcox's documentation of linkages and tensions between academics and practitioners in the UK and North America in the late 1990s gives some idea of the mix of social visionaries, academics and others who serendipitously met face-to-face and online and formed something of an shared early vision of what might be (Wilcox 2001; Wilcox 2005). However the Global Community Networking Partnership, a European coalition emerged in the early 2000s, failed, and some of its proponents and new participants have been active in establishing a new body, the Community Informatics Research Network. The final shape of the network is still unclear. In Australia, innovators

such as VICNET or InfoXchange arose in response to these trends abroad (Fitzgerald and Hall 2005).

The field as such has thus developed, somewhat in isolation from community development and other fields such as sociology (Wellman and Milena 1998; Pigg 2005), despite a need to move from 'thinking tools' to 'thinking about tools', in a much more sophisticated way (Rheingold 2004: 266ff). There are exceptions to this trend however. For example, Milio's outstanding work on community technology centres and outreach programs informatics, written in the early 1990s from a health perspective, does not appear to be at all known in community informatics circles. Her work offered a comprehensive theoretical and methodological framework looking at ICT initiatives in very poor communities in a way that made sense to policy makers and administrators, but at the same time, connected with a genuine desire for ICT in poor communities to be controlled by the communities themselves (Milio 1996). My initial contribution to Wikipedia (5 August, 2004)[24] attempted to frame the issue as follows:

> Community Informatics is an emerging academic discipline and practice field. The term was first brought to prominence by Mike Gurstein, a Canadian professor of management, and he brought out the first representative collection of papers in the field. It is also called (electronic) community networking, bringing together the practices of community development and organization, and insights from fields such as sociology, feminism or library and information and management sciences. Its outcomes—community networks—are of increasing interest to governments of all persuasions, in many countries, concerned with ways to harness information and communication technologies for social capital and community development, disputed as these concepts may be.

> It may in fact, not gel as a single field within the academy, akin to Information Systems or Management Systems, but remain a convenient locale for interdisciplinary activity, drawing upon

---

[24] Wikipedia.org is an 'open content encyclopaedia'. 'The goal of Wikipedia is to create an information source in an encyclopaedia format that is freely available. The license we use grants free access to our content in the same sense as free software is licensed freely. This principle is known as copyleft. That is to say, Wikipedia content can be copied, modified, and redistributed so long as the new version grants the same freedoms to others and acknowledges the authors of the Wikipedia article used (a direct link back to the article satisfies our author credit requirement). Wikipedia articles therefore will remain free forever and can be used by anybody subject to certain restrictions, most of which serve to ensure that freedom' [http://en.wikipedia.org/wiki/Wikipedia:Copyrights]. It is likely that my original contribution to Wikipedia (which can be tracked through the edit pages), will be substantially modified by the time this thesis is complete. However, I proceed from my original contribution for the purposes of this research.

many fields of social practice and endeavour, as well as knowledge of community applications of technology. It might be characterized as a postmodern discipline, open to all comers.

The field appears to have emerged from concerns with the 'Digital Divide' as expressed in many policy statements and reports in the mid to late 1990s, and a body of common knowledge and key concepts emerged, providing a basis around which an increasingly large group of people in many countries have discussed their work and ideas.

There is a healthy tension between the practice and research ends of the field. To some extent this reflects the gap, familiar from other disciplines such as community development, community organisation and community-based research, community health and community education, between a desire for accountable—especially quantifiable and outcome-focussed social development, typically practiced by government or supported by foundations, and the more participatory, process-driven priorities of grass-roots community activists, familiar from theorists such as Paolo Freire, or Deweyan pragmatism. Some of the theoretical tensions are also familiar from such disciplines as program evaluation and social policy, where there is continual debate over the relative virtue and values of different forms of research and action spread around different understandings of the virtues or otherwise of allegedly 'scientific' or 'value-free' activity (frequently associated with 'responsible' public policy), contrasted with more subjective and process driven viewpoints in bottom-up activity.

A further concern is the potential for practice to be hijacked by policy or academic agendas, rather than engage in community change for its own sake, whether in-country or for example, in projects situated in developing countries. Ethical issues around such issues have not been at all explored.

However, explicit ideological statements or divisions are yet to emerge. Many projects appear to have emerged with no particular disciplinary affiliation, located more in a policy or practice desire to 'do something' with technology.

Research and practice ranges from concerns with purely virtual communities, to situations in which virtual or online communication are used to enhance existing communities in urban, rural, or remote geographic locations in developed or developing countries, or communities of interest (clubs, non-profit organisations) spread geographically and virtually.

Areas of concern range from small scale projects in particular communities or organizations which might involved only a handful of people, such as an online community of disabled people; telecentres; civic networks (in Europe, see for example Milan Civic network and Ruralnet UK); to large national, government sponsored networking projects in countries such as Australia or

Canada (Networking the Nation and Community Access Program, both now ended); or local community projects such as Smart Newtown ; or Computers in Homes, working with Maori families in New Zealand. The Gates Foundation has been active in supporting public libraries in countries such as Chile. For examples of ICTs for development in Africa, see Open Knowledge Network. Knet is an example of work with First Nations people in Canada.

There are emerging online and personal networks of researchers and practitioners in community informatics and community networking in many countries (see, for example, Community Action Network) as well as international groupings. The past decade has also seen conferences in many countries, and there is an emerging literature for theoreticians and practitioners.

It is surprising in fact, how much in common is found when people from developed and non-developed countries meet. A common theme is the struggle to convince government of the legitimacy of this approach to developing electronically-literate societies, instead of a top-down or trickle-down approach, or an approach dominated by technical, rather than social solutions which in the end, tend to help vendors rather than communities. A common criticism is that a focus on technical solutions evades the less quantifiable changes that communities need to achieve in their values, activities and other people-oriented outcomes.

The field tends to have a progressive bent, being concerned about the use of technology for social and cultural development connected to a desire for capacity building or expanding social capital, and in a number of countries, governments and foundations have funded a variety of community informatics projects and initiatives, particularly from a more tightly controlled, though not well-articulated social planning perspective, though knowledge about long term effects of such forms of social intervention on use of technology is still in its early stages.

National associations and organisations have coalesced around these issues in the UK, USA, Canada, Australia, and elsewhere. Relevant online links include the Community Informatics Research Network from which connections can be made into listservs and events. —Larryjhs 11:59, 5 Aug 2004 (UTC)

[Retrieved from http://en.wikipedia.org/wiki/Community_informatics]

A number of issues require further elaboration. First, the continuing inadequacy of conceptions of 'technology', particularly in light of contributions from the welfare field and other theorists, and the implications of such a viewpoint. Second, the problem of defining a discipline, and its relevance to developing a particular body of knowledge for community informatics.

The 'question' of technology in community informatics discussion has been substantially materially focussed, seeing technology as the tool taken up by, or implemented in projects with the community. This viewpoint is reflective of the traditional, materialist interpretation of technology understood as an artifact or system reflecting the intentions of designers at a remove from the 'users' or other important social factors and influences that affect human capacity and behaviour, a problem taken up by Orlikowski, amongst others (see p.193). For example, in 1995, Beamish wrote that community networking was:

> [A] network of computers with modems that are interconnected via telephone lines to a central computer that provides community information and a means for the community to communicate electronically'. (Beamish 1995)

Gurstein's influential definition (cited above), still maintains that materialist focus. The question of 'community' has been somewhat put into second place to an assumption that technology is the prime mover—and is somehow, the focus of interest— in community change efforts.

Some explanations for the apparently weak understanding of community amongst those involved in community informatics or community technology projects can be suggested. First, the fact is that the field has developed at an extraordinary speed, particularly in the second half of the 1990s, paralleling the exciting growth of Internet connectivity and investment by government and others in public access. Technical capacities have not been balanced with fine-grained understandings of community development and related practice areas. While there are no studies of the background of those leading community ICT projects in, for example, Australia, North America or the UK, many people appear to have come to engage with communities on the basis of their skill with new technology, information systems, librarianship, or management, rather than skills in community work or community development. 'Community' has been a target for 'intervention', rather than collaboration. Despite the best of intentions, many project workers do not appear to have had a practical and responsive understanding of 'social' or 'human factors' as found with say, community development workers, and an attraction to technical solutions for social problems has affected their perspective. The lack of exposure to more humanistic disciplines is reflected for example, in circular debates on listservs such as the Community

Informatics lists (communityinformations@vancouvercommunity.net and the more specific research list ciresearchers@vancouvercommunity.net), about the qualitative and quantitative issues. There is a frequent positivistic qualification put to the discussion, reflecting the continuing dominance of a technical-scientific discourse mode (see p. 21) to the discussion of what are human problems, such as improving social capital, solving illiteracy or poverty amelioration (Stillman 2005).

Furthermore, the commitment of large amounts of money into ICTs by governments and foundations over the past decade (at least in developed countries), has probably also acted to limit the possibility of more radical or challenging activity. Risk-averse public servants, and academic or business contractors have naturally been more interested in potential business and technical opportunities (and new careers) than long-term social and community initiatives which entail risk. The capacity for innovation can be constrained in such environments.

As an identified response to such conceptual and practice gaps, within community informatics circles, new ideas are beginning to emerge. A June 2005 workshop, 'Supporting community through ICT'[25], at the Open University in the UK in which the author played a key role has been the first attempt to deepen theoretical understandings by community informatics practitioners and thinkers. The workshop arouse because of a desire to explore theoretical issues by a number of community informatics researchers and practitioners. The workshop process was documented through a wiki (and some videoing), and the wiki, based on workshop notes, was substantially drafted by the author, and these notes are used as the basis of a discussion concerning particular problems for a critical theory for community informatics. It had been intended to develop a further theoretical response, but this has not yet occurred.

At the workshop, it was emphasised that language frames particular pictures of the world and helps to constitute disciplinary frameworks and practices. Thus, as I wrote in the wiki, based on group workshop notes:

---

[25] http://kmi.open.ac.uk/events/ci2005/. The version of the website cited here is current as of 15 July, 2005.

The term 'community informatics' suggests that community informatics is a professional discipline akin to health informatics which serves medicine and health care as defined care sectors with quantifiable and clear processes. Drawing from this analogy, 'community' is therefore seen as the subject of a particular set of information and management science techniques used by academics and others (such as government officials) with a commitment to particular socio-technical and industrial processes. Such processes are located around the means of production of community knowledge (with knowledge as a replicable and tradable commodity), or social and community capital (also contested terms), via particular structures of technology[26].

The group which worked on this statement was also of the view that much of the discourse occurred at a distance from communities themselves, consistent with the distancing which occurs in research, leading to a diminished authenticity (see also Appendix B in this thesis). Language can incorporate different expressions of human communication (in the case of ICTs, the mix of multimedia). Nor is spoken language a flat domain, unaffected by such facts as education, class, or gender. Academia and administration tend to privilege particular forms of discourse, excluding those without authority, particular knowledge or particular qualifications. In some countries, English or Spanish for example, are privileged as the language of power and ICTs, even though the majority may be users of national languages (such as Hindi or Inca languages). Thus, in the wiki, I wrote:

Differences in gender, age, education and culture can mean an undervaluing of the tacit and emergent in communities, particularly when researchers (and practitioners) are pressured to fulfil particular funding contract or research goals in certain time frames that may have no meaning or relevance to the particular community with which we are working.

Fears of telling the 'real' story or natural hesitations to be explicit bedevil all research and development practice, and are a fact of any institutional or organisational experience. These factors affect both the language of the researcher and researched, and lead to a 'natural' filtering process. Even the concept of the 'researched' reveals a subject-object relationship, even if the intention is through the research process to provide enlightenment and information. Some prefer to use the term 'partner' or 'participant'. We have all had experiences of non-verbal language and cues which indicate that what we may want to know and do is not a one-track process, and a process of subtle discussion and cueing is required. We all live within the frameworks of the

---

[26] http://kmi.open.ac.uk/events/ci2005/pmwiki.php/Together/Summary#theme1 (Accessed: 1 October, 2005).

> 'silent languages' that bind our own cultures, but are pressured through the project commitments or contracts that we have towards wanting particular lineal events and processes, usually expressed through directive language and unambiguous processes.

> The 'other' culture may see the world quite differently, and have its own special language, rituals, and behavioural processes. These experiences are not remote things, but areas familiar as walking into the board meeting of a new organisation and seeing how differently the meeting is conducted, coming to terms with the complexity of 'needs' in a new housing estate where poverty cannot be reduced to simplistic formulae in the context of other social bonds, or a particular social embeddedness of a technology or commodity (such as water) in a developing country.

These concerns obviously resonate with Habermas' concerns about authentic communication in the public and private sphere (Habermas 1974). While the problem cannot be resolved without the engagement of many community informatics or community technology researchers and practitioners, the challenge is to develop that authentic language that relates to the adoption and use of technology through increased capacity to bring to light voices in the field. This viewpoint leads into the need for more effective, grounded research techniques that capture and value the multiple forms of voices in the field. And by voice here, we can mean different forms of media to capture community memory, speech, song, action, or art (Stoecker and Stillman 2006)[27].

At the same time as there is a desire for a form of intellectual authenticity, the potential need for some form of boundary setting was hinted at through the following statement in the same wiki:

> We work with borrowed language from the humanities, social sciences and computer sciences, government, and the community and human services. This means that our practice is multidisciplinary and emergent.

The implication of this statement is that an emergent field—what Kuhn would refer to as a pre-paradigmatic state (Kuhn 1970: 17)— needs to set its own boundaries. However, is there a need for a particular disciplinary boundary, given the potential for it to become exclusionary in the same ways as other fields that become associated with a profession or

---

[27] It may be appropriate in the future to explore aesthetic theory and its relationship to community's adoption of technology through a form of community-focussed appreciative inquiry (Preskill and Coghlan 2003) of *Einfühlung*, or empathetic feeling *into* a particular act of creation (Read 1951: 30).

academic discipline? A recent discussion by Ron Day about disciplinary boundaries issues in the library sciences views the concept of professional 'discipline' as an exclusionary practice (Day and Pyati 2005). 'Professional disciplines' tend to reflect particular political and rhetorical frameworks which develop in defence of particular performative professional and particularly academic boundary settings (thus the preceding quotation about borrowed language) from the Open University workshop). Furthermore, the emergence of the modern profession of librarianship, with its emphasis on credentials for employment leads to a constraint in professional discourse and training and disciplining of its membership (Foucault and Gordon 1980), as the profession seeks to normalise itself within particular academic and institutional structures (such as local government) . An ideology of internal self-governance prevails.

As examples of the disciplining of a field through its conceptual framework and language, Day refers to the emergence of categories such as 'user', 'information behaviour', 'information needs', and 'experiments' in library science. While they appear to be neutral terms, they are by and large applied in an uncritical way, removed from social-political questions which might lead to a questioning of their very adequacy in coping with the much more complex issues such as class, gender or power, and how these determine how information is constructed, provided, and accessed by particular 'users'. In fact, library science is caught in a particular ideological frame:

> [P]artly due to the vast concentration of wealth in military and corporate research and partly due to the subsequent willful ignorance of Marxist, non-quantitative, non-'practical,' and, largely, non-American analyses of information—analyses of information and society and culture have almost totally been given over to so-called information specialists and public policy planners, mainly from computer science, business and business schools, the government, and the quantitative social sciences.

> This concentration has led to a focus on quantitative methods of analysis, a neglect of critical modes and vocabularies for analysis, a dependence on naive historiographical forms for analyzing the phenomenon of information, and a neglect of art and culture outside of conceptions of historical transmission (that is, 'cultural heritage'). (Day 2001b: 3)

A very similar challenge can be suggested for a so-called profession of community informatics, given that its proponents are largely based in the academy and need to justify their engagement with a new 'discipline'. However, other than out of the desire to develop an academic field, attract students, or support funding from government and others, how necessary is it to 'discipline' a complex practice, given the emergent and constantly changing nature of people's activity with technology? Are there any axiomatic research questions, particularly given the underdeveloped nature of community technology research (Stoecker 2005a)? Furthermore, given the underdevelopment of community development theory in general (see also p. 72), is the challenge too substantial at this time?

Foucault's categories of technology

The above questions are very difficult questions for a new network of researchers and practitioners to consider, but the perspective of Foucault appeared particularly relevant at the Open University workshop. Foucault presented a 'matrix of practical reason' for different technologies, echoing Habermas (and Foucault's own dialogue with Kant), and I used these to frame a discussion in the online wiki at the Open University workshop[28], and this is re-worked, in light of further reflection, below. Aspects of the discussion which I developed for that workshop have become incorporated throughout this thesis. Foucault wrote in *Technologies of the Self*:

> As a context, we must understand that there are four major types of these 'technologies', each a matrix of practical reason: (1) technologies of production, which permit us to produce, transform, or manipulate things; (2) technologies of sign systems, which permit us to use signs, meanings, symbols, or signification; (3) technologies of power, which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject; (4) technologies of the self, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform I themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality. (Foucault 1988)

---

[28] http://kmi.open.ac.uk/events/ci2005/pmwiki.php/Main/NewIdeasAndFrameworks (Accessed: 1 October, 2005).

Foucault's categories for technologies and their relevance to the thesis are commented upon as follows:

Technologies of production

Foucault's concept of the 'technologies of production' heightens awareness of the controlling aspects of particular technical systems, and the opportunities and constraints that this may offer. In the context of community, these are the technical artifacts or machines which community development or community technology projects endeavour to use to improve communities. As seen so far, in the literature, artifactual technology is seen as potentially constraining to human-centred technologies, through its rationalising and disciplining effects upon human agency. While at the Open University workshop we did not devote substantial time to discussing the relationship between people and machines, it was felt that the sensitising concepts of Actor Network Theory could help to 'unpack' the socially constructed and embedded relationships that we have with artifactual technology. Actor Network Theory (see, below, p.179), particularly assists to elucidate the 'strong agency' effect which technical artifacts appear to have in producing, manipulating, and transforming practice and knowledge. In addition, when we speak of the agency of technology, we are not just speaking of machines, but the technical systems of training and expertise that are part of the discourse and structuring of production and reproduction across time and space. That is to say, a language around 'technical solutions' with particular assumptions about how particular technologies perform has been a central part of the discourse in part, because of a belief that the technology can replace or substitute for other forms of interpersonal relations.

Technologies of signs

Foucault's technologies of signs serves to heighten the particular value set at work within community and welfare work, with its humanistic, client focus. Much of the discussion at the Open University workshop discussion revolved around the critical importance of language—of understanding the complexities of the languages and signs of the different systems and communities with which we work. Signs and languages are produced and reproduced across time and space to produce histories (and discontinuities) for particular

structural principles that preserve particular social institutions or orders. Language/s (such as expert technical languages) are potentially disciplining and restrictive in particular ways (paralleling Ron Day's critique of professional discipline), and can prevent critical exploration. Languages can be excluding: technical language can exclude non-technical conversations and framing or problems and solutions, and vice versa. The challenge is for a community informatics language that is inclusive, or one that can act as a translating mechanism between the community at large and technical specialists.

Technologies of power

The group which worked with this theme at the Open University workshop made this point explicitly: 'technological knowledge and ownership of the technology are forms of power and that leaders want to be near those with technical knowledge'. For people engaged in community informatics/technology, unconscious and conscious decisions are made about how power relations are conducted as processes of personal and institutional interaction. In term of the relationship of 'technologies of power' to 'technologies of care', the literature shows a discomfort with the replacement of human or client-centred systems by technical, artifactual systems that require new expertise beyond that ordinarily held by workers in welfare or community work. Knowledge of technical data, of the operations of particular technical systems and mark-up or programming languages (eg HTML, PHP), or the language of institutions are manipulated in their relationship with those 'above', and with the communities with which we work. Additional dimensions which can be added to this include gender and ethnicity, as demonstrated through the domination of particular national technical languages and cultural assumptions (for example American English) over indigenous culture and language.

Technologies of the self

These are the systems by which we consciously and unconsciously determine our behaviour as individuals and as others: for the researcher, it 'contains' the mores and ethics by which we may or may not work. For members of some communities, it is the 'training' by which particular opportunities and constraints can affect and effect their participation and use of new material technologies. Within professions, as noted above in the discussion of Day's

critique of librarianship, the disciplining effects of particular ideologies can inhabit one's capacity to move outside what is seen to be acceptable or ethical within particular codes of conduct. The connection of community technology projects to particular policy and program interests can act to impose a particular training and discipline regime upon clients to be socialised into particular learning or community behaviours.

Chapter conclusions

This chapter has reviewed a wide range of intersecting perspectives. The concepts of community, community organisation and development, and the place of technology in that relationship are not uniform. Indeed, government (and in this case, the focus has been on the Victorian State government), has a relatively underdeveloped concept of the relationship between ICTs and social and community development, though it has been supportive of the use of modern ICTs in community settings. Community organisations themselves have a similarly limited approach. The discourse is fairly narrow, on the one hand concerned with efficiency and connection and impacts such as social capital and on the other hand, the amelioration of digital divides.

From the perspective of welfare and community research, it is clear that the concept of 'technology' can be re-interpreted as a predominantly human process or practice, incorporating a body of knowledge and practice which can be complemented by ICTs. This has led to the productive idea of 'technologies of care', (see p. 90), which asserts that the particular methodologies used in community or welfare work are akin to a technical discipline or process. However, Webb, who views 'technologies of care' as a new means to govern and constrain action, I view them equally offering opportunity and new forms of agency. The new forms of agency can be studied in organisations such as Neighbourhood Houses which are both users and providers of ICT access to their local communities, in conjunction with the skills and processes they use—a form of technology—to support their communities.

Recognising that there has thus far been a research gap, at least one study (Burt and Taylor, see p. 85) has called for organisational technological 'biographies', suggesting a research approach that is grounded in a deeper understanding of the particular culture and processes

of CBOs. However, overarching theorisation about what underpins that form of 'biography' is still lacking, but some indications are there about what needs to be taken into account in such a new framework.

First, there is a concern about the 'gendering' of technology. Several perspectives are accounted for in this idea: the dominance of deterministic and rationalising understandings (or lack of understandings) of welfare work, which assume that complex interpersonal interactions, into which women have more insight, can be recalculated or boxed into computerised systems.

Second, the idea of 'technology' is viewed much more holistically, by some writers studying welfare and human service organisations, as something that is comprised of human and material elements. Technology can include an assemblage or package of frequently ambiguous processes, in which human agency is critical. These are typified by Webb's expression, 'technologies of care', though as noted, ICTs are viewed someone pejoratively by him and other critics of ICT adoption in community settings, and I have modified this understanding to include the capacity for agency. Furthermore, technology also refers to matériel (in our case, ICTs), drawn upon in the reproduction, storage, and calculation of elements of the human technology processes, though there can be resistance to attempts to govern community or welfare work through technological processes without an appropriate 'translation' (Gould) of the technology. There is potential for incorporation of these ambiguous processes into new frameworks, such as structuration theory (Sandfort).

Finally, there is an assumption that community or welfare services work, at an ontological level, is fundamentally different in orientation to what goes on in government or for-profit business. Human services work is at its core about improving the lives of people, in consultation with clients. Its core processes involve particular and equivocal technologies of care.

Community informatics (as a generic label), still reflects a somewhat deterministic and material approach to technology, even though it is recognised the relationship is complex, and ripe for new theoretical development as it emerges from its foundation stages. Indeed, given the rapidly changing technologies which are its subject, the need for disciplinary

coherence is questionable, particularly if a continuing critical stance is to be adopted (Day). There is a gulf between theorisation about technology (where it exists), and theories of community development. Despite a desire to avoid techno-determinism, discourse still appears focussed around the centrality of technology as the prime material agent, reflecting a continuing attraction to technological, rather than deeper theoretical engagement with processes and theories of community development. The latter include process, practices, and theories concerned with complex and demanding political and social inquiry and action. Finally, Foucault's discussion of different technologies, which was used to problematicise the issue of community informatics research at a prior research event, also acts to add further depth to the multiple ways in which technology can be conceived, around the issues of the meanings imputed to technical systems, and the operation of power as a means of domination over both communities of practice and individuals.

These observations can be brought together through an overarching framework that can work with both human agency and the effects and affects of ICTs. This is offered by structuration theory and its various adaptations, and is the subject of the following two chapters.

6   What is structuration?

The purpose of this chapter and the one which follows is to provide an introduction to key elements of structuration theory in light of conclusions drawn from the previous chapters about the need for new frameworks in which to consider the complex and equivocal nature of technology (both human and artifactual technology), in the life of community-based organisations. Structuration theory provides many opportunities for providing a framework, in which to consider the place within a wide-ranging, albeit controversial theoretical frame. Because of the complexities of structuration, its various elements are purposely elaborated in some detail.

Structuration as a recurrent social practice

> The starting-point for theoretical thinking and empirical work in the social sciences should …be understood as the analysis of *recurrent* social practices. (Giddens 1989: 252)

This quotation is characteristic of the decades of work that Anthony Giddens has dedicated to explicating the relationship between human agency or action and the creation of order and social institutions. With considerable subtlety and synthetic ingenuity, he has re-constituted key questions in social theory, and become a 'sociologist king', along with other thinkers such as Beck and Bourdieu (Frankel 2001). The perspectives of other theorists of power, order, control, and institutionalism such as Foucault or Habermas can be incorporated within his useful frameworks, though as his many critics have observed, he has a magpie-like tendency to pick and choose theories or evidence (Sewell 1992). This has resulted in an almost exasperated tone in some criticisms of his theoretical explorations which delve into difficult areas of social theory that cross into the vast terrain of geography, history, the history of ideas, social psychology, social theory, sociology, and all the interstices between (Thrift 1985; Gregson 1989; Urry 1991). In particular, the action-structure problem as the underlay of social order, a key issue in social theory has been of particular concern to Giddens, and many other social critics (Held and Thompson 1989).

While such difficult arguments are the substance of abstruse discussion by specialists in particular disciplines, Giddens' synthetic skill and literary capacity to present apparently satisfactory and overarching solutions to sociological puzzles are attractive to non-specialists who are not concerned with theoretical coherency despite the obvious problem that the original theoretical intention can be lost or decontextualised.

Of particular interest to students of organisation and technology has been Giddens' formulation of a synthetic framework which can be used to describe and research the dynamic processes by which organisations (as a kind of durable social institution), are constituted across time and space through knowledgeable human agency. The many elements brought together in the theory can be used to develop a rich picture of institutional dynamics and importantly, the relationships between the intersecting values, behaviours, and use of resources in different sorts of organisations, including the use of ICTs. Even though this theory was originally intended by Giddens to serve primarily as an analytical abstraction, it has an empirical, practical attraction. The capacity for individual agency—the capacity to do things—is particularly emphasised as part of a project to develop a reflexive sociology in which a rich picture of social reality is developed, in which the researcher, through his or her skills engages in a conceptual dialogue with the explicit or tacit 'frames of meaning' within the processes of everyday life (Giddens 1984: 284). The potential to use the structuration framework to document a rich picture of particular realities and not just abstractions is what makes it appealing.

Giddens developed his model of social reproduction as a response to more teleological and deterministic teleological explanations of social reproduction and institutional order, found in Marxist, structuralist, and functionalist theories of which Giddens has been highly critical (Giddens 1979a: 7). These models prescribe a dominant and determining role to social structure in which there is a strict division between 'social order' and the socialisation of individuals into particularly patterns of normative behaviour. The key difference between Marxism and functionalism is a judgement about the morality and effects of systems of social structure, and this leads to different ontological assumptions. To Marxists, there is a negative value placed upon the dominating role of class, ideology, and power over the forces and relations of production under capitalism. In the case of

structuralists like Levi Strauss[29] or the structural functionalism of Talcott Parsons, an ethical ontology is not part of the issue. Legitimation is achieved through complex processes of socialisation, separate to any questions about ultimate structural inequity.

Giddens finds these solutions unsatisfactory, particularly because they can only explain, in the broadest and most qualified way, the process by which human agency is created and then conducted. While his theories have a certain similarity to the work of Luckmann and Berger, Bourdieu and others, none appear to have provided such a thorough, comprehensive and widely-read approach, ripe for practical application. This is despite many criticisms of his overall ontology and epistemology (Berger and Luckmann 1966; Bourdieu 1977; Bhaskar 1979; Urry 1982).

Structuration is a French word appropriated by Giddens to describe his understanding of the ongoing process of social reproduction at the interpersonal, family, institutional, or societal level. *Structures* depend upon the ongoing reproduction by people of *structural principles,* as sets of transforming rules or principles which at an analytical level represent the properties or character of social systems. However, the transforming rules or principles are not the end-point of social reproduction. They are also the starting point for human independent agency which uses resources to produce, reproduce, change, and communicate different forms of order (Giddens 1976: 127). Society—social order—is reproduced though people's constant 'doing' of what they reproduce as ways of behaving.

System, as generic term, thus refers to the generated, reproduced relations, or regular social practices which exist across time and place. Critically, the *structural properties of social systems are both medium and outcome of the process of structuration*. Thus, systems and structures cannot exist outside of what they reproduce. The study of structuration is the study of how these rules and principles are enacted, reproduced, and transformed.

Giddens developed a concept of knowledgeable human agency in relation to structure constituted by a dialectical relationship, which he calls a *duality,* in contrast to the *dualistic* or *binary* representations of social order preferred by functionally-oriented or structuralist

---

[29] Sewell speaks of a 'sublime indifference' to questions of power and domination by Levi Strauss (Sewell 1992: 9)

(including Marxist) theorists. The structures created by agency are themselves a vehicle for the transmission of agency. The duality, as conceived by Giddens, is thus the vehicle for the transmission of recursive or recurrent social practices over time which result in the emergence of institutionalised forms of social practice, the 'circuits of reproduction' (Giddens 1984: 192). These forms of social practice link time and space in the transmission of recursive social practices; and at a more profound social level, by extension into the creation and maintenance of more permanent social and institutional) structures which reflect particular dominant characteristics through their allocation of resources (for example, the 'free market', or the 'state').

The principle of *recursivity* also needs to be emphasised, in contrast to a functionalist or homeostatic sense of social order which emphasises the fitting of parts to the whole. Social reproduction in a structurational sense does not mean a simple, carbon-copy lineal rebuilding of structural principles and arrangements on a daily basis. Rather, the principle of recursivity means that we are engaged in a sort of reflexive and intelligent dialectical loop with both what is 'in our heads', or interactions with others (the mental processing that is used to constitute a personal, or as Burt and Taylor note, an institutional or organisational biography, see p. 85). This is not a simple process of reification (or false objectification), in which an imaginary independence of existence, removed from causal factors arises, but something real, in which personal agency interacts with real-world environments (Bottomore 1983: 411).

Furthermore, Giddens also uses the terms 'institution', 'structure', and their derivatives such as 'institutional' or 'structural' in a very specific sense. 'Institution' in this context, refers not to a formal institution (such as a particular Neighbourhood House, or a certain government department), but in the sense of a customary or regularised practice—an idea picked up in his interest in explaining recursive and reflexively ordered activity ('structural' activity) across time and space. In later works, such as *The Consequences of Modernity* (1990), Giddens speculated about key characteristics of modernity and institutionalised practice.

> The dynamism of modernity derives from the separation of time and space and their recombination in forms which permit the precise time-space 'zoning' of social life; the

116

> disembedding of social systems…and the reflexive ordering and reordering of social relations in the light of continual inputs of knowledge affecting the actions of individuals and groups. (Giddens 1990: 16-17)

The notion of reflexive self-governance as an outcome of modernity is reminiscent of Foucault's ideas about discipline (including personal and organisational discipline), manifested through the development of particular discourses and social practices and particularly, his technologies of control, and discussed previously (see p.107). Organisations, as institutions, provide the 'storage space' for particular forms of disciplined memory and action in and through the manipulation of time and space. To Giddens, modernity is characterised by a 'disembedding' and 'distanciation' of traditional relationships, authority structures (clan, tribe, priest, family, the village), and other means of communication in stark contrast to co-present and deeply socially-embedded processes of communication as found in traditional societies or even the pre-industrial west [30]. New means (particularly through derivatives of writing, including ICTs) allow for the 'storage' of relationships that bridge time and space. These observations are an important sensitising factor for other researchers interested in how time and space are real factors in the life of organisations, particularly with respect to new systems of asynchronous and virtual information and knowledge storage, control, and manipulation.

For Giddens, therefore:

> Organisations…are collectivities in which the reflective regulation of the conditions of system reproduction looms large in the continuity of everyday practices…For reflective self-regulation, as a property of collectivities, depends upon the collation of information which can be controlled so as to influence the circumstances of social reproduction. Information control, in turn, depends upon information *storage* of a kind distinct from that available in individual recollection, in myths or story-telling or in the practical consciousness of 'lived' tradition'. (Giddens 1984: 200)

---

[30] Giddens' historiographical distinction of 'traditional' versus 'modern' forms of authority and communication and its effect on relationships because of the impacts of asynchronous forms of communication is subject to further clarification. The question of the change in the human mindset through the transformation from orality to literacy has intrigued scholars (Ong 1982). A perusal of Sumerian and Akkadian letters and literature leaves no doubt about the psychological contemporaneity of the ancient mind and its capacity to communicate asynchronically. The scribal class was quite aware of the significance of abstracting sound into an iconic system, from the earliest days of writing, leading to the development of scholarly lexical traditions transmitted over the millennia. Professional Mesopotamian scribes were well aware of the power of written expression (Lambert 1960 ; Oppenheim 1967; Oppenheim and Reiner 1977).

Organisations, as a type of community (but a community particularly concerned with the deliberate and structured production of particular outcomes), consist of people who mentally process and share (or contest) social rules and practices. They function through the interpretive schemes, the stored 'stocks of knowledge' (Giddens 1979a: 83), provided by language and other media (such as through ICTs), which provide structure and meaning to communications. Through their communications they draw upon particular resources. Giddens thus argues that order is primarily created, communicated, and modified by means of language, 'not as a system of signs or symbols, but as a medium of practical activity' which offers meaning in communication (Giddens 1976: 154). A better understanding of that practice leads to a better understanding of how order is constituted in organisations.

Significantly, practical activity is not predicated on an even distribution of power or other resources, because power relationships are parts of the natural order of things. Factors or *modalities* which affect the nature of institutionalised practices include interpretive schemes (the attributes and cultures of different forms of communication), power (as expressed by the use of different resources), and sanctioned behaviour and practices, all of which are contextualised or conditioned by different institutionalised social practices overall. In addition, the utilisation of different resources (for example, technological artifacts), further contributes to the development of particular structural principles. This latter point is an important one, as it is an indicator of the capacity of the structuration framework to integrate, in a sophisticated way, the cultural affects and effects of technology. Structures (that is to say, the manifested or practiced reproduction of certain mental principles or models in different media, including ICTs) can be enabling and constraining for actors, resulting in the expected, the unintended, or the new. The contest over the mediation of different frames of meaning, or different sets of structural principles (that can be compared to Foucault's matrix of different technologies, discussed previously on p.107), results in the politics of organisations, and this is the starting point of analysis for understanding how different frameworks come into intersection in organisations or institutions (and the people within them) work—or don't work (Giddens 1976: 158).

However, part of the difficulty with Giddens' theory is its changes of tack, spread through many volumes over the years, in which there have been shifts of emphasis and language,

clarifications, and attempts to reply to critics. Thus, discerning his core intentions and meanings can be difficult at times, and there are few diagrams, valuable as they are, to provide a visual metaphor to provide a sort of centring for the logic or totality of his thought processes. His critics have therefore remained unsatisfied, and aside from detailed responses to critics in the 1980s (Giddens 1989), he has left his essential structurational framework lie since that time, despite continuing interest in it as a controversial question for theorists (Archer 1982; Mouzelis 1989; Parker 2000). His interests until retirement in 2004, turned to investigating, in a broader fashion, questions around the nature of modernity and globalisation, as well as engagement in 'Third Way' debates, particularly associated with the Blair government in the UK (Giddens 2000a; Giddens 2000b).

It is worth noting however, that despite the theoretical controversies, in response to criticism such as that from Murgatroyd (1989), Giddens has been much more responsive to gender as a socio-biological structuring agent that require special analytical attention, and has admitted that his lack of previous attention was not untypical of sociologists of his era (Giddens 1989: 282). In fact, Murgatroyd's criticism of the place of gender in his theoretical frame reflects the ongoing debate about the determining nature or otherwise of gender in social reproduction, a debate that is familiar from mainstream and Marxist sociology (Bottomore 1983: 163ff). For the purposes of this thesis, however, whatever the cause of gender difference (nature or nurture), it is accepted as a real factor in the construction of technology that deserves recognition and investigation.

Functionalism, Marxism, structuration interpretive traditions, and the problem of agency

Giddens' picture of the creation, maintenance, change in structural arrangements relates to his attempts to resolve ongoing debates in social theory about different ontological conceptualisations of the problem of social order, beginning with his classic discussion of Durkheim, Marx, and Weber (Giddens 1971). As observed previously, these debates can be broadly characterised as a division between Marxist and structural-functionalist interpretations of social order on the one hand, in contrast to hermeneutic and interpretive understandings of social order which tend to bracket concerns about ultimate causal

connections with broader social structure for a focus on micro-level interactions. Close attention is paid to the Marxist critique in this thesis because of Marxism's insights to developing critical, rather than explanatory theory.

Marxism

While such debates about the overarching cause of social order can at first sight appear marginal to discussions of order in organisations, or the nature of technology, they in fact are critical to understanding different the different 'schools' of knowledge which have emerged to analyse characteristics of social, including institutional order, and the use of resources (including ICTs) to constitute such order.

In Marxist thinking, human agency is given second place to determining relations and forces of production, which in the final analysis (or causal change), rest with those who have particular and dominant power and class relations. As such, class power and related relations of productions compel (through direct and indirectly sanctioned practices and norms) people, as social beings, into particular forms of belief and patterns of behaviour, within particular social and economic relations in the capitalist economy. Traditionally, the 'critical subject', the ethical fulcrum of all truth claims in Marxism, upon whom universal claims and interests are made about humanity, was the labour movement and the working class. However, independent Marxists would apply the same analysis to other industrially-based economies such as that found in the former Soviet bloc or China today, arguing that relations of power and production produce similarly iniquitous relationships in society.

As Marx put it in The Eighteenth Brumaire of Louis Napoleon (1852):

> Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. (Marx and Engels 1962: 399)

And seven years later in the Preface to the Critique of Political Economy (1859):

> The mode of production of material life conditions the social, political and intellectual life process in general. It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness. (Marx and Engels 1962: 503)

As a consequence, Marxists, in the final analysis, have regarded social and economic structure as being prime determinants of the process of socialisation, including human belief, behaviour, action, and social order. The workings of that causal chain is subject to considerable debate by Marxists themselves not least of all because of the changes to social, political, and industrial structures since the nineteenth century. Additionally, for many decades, Marxist thinking was hampered by a type of canonical control by the USSR in particular or in the west, an extreme 'anti-humanism' such as that developed by Althusser (Althusser and Brewster 1969; Resch c1992). In fact, there is in Marx a more complex picture of reality found in Marx's earlier work and his later *Grundrisse,* in which human agency is given much more credence. More detailed analysis lies outside the range of this thesis, even though Marxists such as Lefebvre in the 1930s were aware of additional factors which contributed to relations of production, including time and space (Lefebvre 1968; Gottdeiner 1993), a theme taken up by a later generation of progressive geographers.

Notwithstanding these differences, Marxists have traditionally emphasised the strong link between human action and technology. In the *Grundrsse,* Marx's major, but never completed work on the capitalist order, Marx wrote:

> Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand; the power of knowledge, objectified. (Marx and Nicolaus 1973: 706)

At a general level, however, the way in which these relationships are expressed under capitalism are, to Marxists, characterised as a 'fabric of hegemony' (Gramsci), or 'structures in dominance' (Althusser), rather than overt oppression or violence. The result is social compliance to the capitalist order with its system of accumulation and profit, even with the emergence of the large and complex state bureaucratic apparatus (Althusser and Brewster 1969; Marx and Nicolaus 1973; Miliband 1973; Poulantzas 1973; Braverman 1975; Resch c1992). However, the definitional disputes and causal relationships between the capitalist system and a semi-autonomous political system and cultural practices are subject to eternal and highly specialised discussion in Marxist circles (Frankel 1982). The details of this debate are outside the parameters of this thesis but it should be observed that

the debate over causal connections and macro-level relationships (for example, the 'capitalist state' to the 'political apparatus' and thence to institutional order) appears to have resulted in a theoretical, analytical and empirical neglect of micro-level relationships. Thus, as an example of a reaction to crude historical materialism expressed in canonical Marxism, much of Foucault's work is dedicated towards exposing the particular internalised and apparently objective disciplines and technologies at level of 'capillary power', the deep and complex sets of physical and psychological constructions and relationships, which touch upon the boundaries of the body, ideology, and material forces. These cannot be simply ascribed to relations of production, but are present in all forms of order (Foucault and Gordon 1980: 86-87).

The neglect of the complexities and dimensions of human agency means that, by and large, Marxist writing has displayed little original thinking about the intricacies of micro-level patterns of interaction order in the mundane world of the workplace, perhaps out of an ethical preference for looking (and attempting to solve) what are regarded as more significant and immediate problems that demand intellectual and political solutions. Consequently, there has been a preference for a critical, action orientation, rather than a depth understanding of 'internal' psychological and interpersonal processes that operate at something of a causal distance from greater social forces. Huws argues for the exploration of agency at the workaday level: 'we must reinsert human beings, in all their rounded, messy materiality' at the centre of analysis in the world of work. (Huws 2003: 151). Furthermore, investigation of the internal cultural processes within the mundane structures of everyday life has been of less interest to English-speaking Marxist critics. With the exception of researchers such as Raymond Williams (Williams 1961; Smith 2004), Ralph Samuel (Jones 2004), and other early British cultural studies theorists, cultural studies has tended to look at mass culture rather than micro-level processes of everyday life (Barker 2000). Instead, a dismissive attitude of what appears trite and non-political is too often the case (Williams 1961; Barker 2000)[31].

---

[31] 'Why was I born blind? Why is my best friend paralysed? The religions attempt to explain. The great weakness of all evolutionary/progressive styles of thought, not excluding Marxism, is that such questions are met with impatient silence' (Anderson 1991: 10).

Furthermore, it could also be that the political thrust of Marxist analysis has traditionally privileged the world of male blue-collar, rather than 'softer', white collar, gendered, or home-based workforce analysis, even though 'white collar' labour and more recently, the 'cybertariat' is the predominant labour form in capitalist, formerly communist, and state communist countries such as China, and as such, poses enormous theoretical challenges (Kamenka 1989; Huws 2003; Greenbaum 2004)

The limitations of traditional approaches are seen in Harry Braverman's path-breaking and influential study of labour processes in the American workplace (Braverman 1975). It has a more structural, than an anthropological or ethnographic thrust. Braverman's focus was upon the degradation of work because of management-directed deskilling, in the transformation from skilled blue collar to repetitive and controlled factory production. While his analysis and accompanying narrative is powerful, it provides less insight into how the workplace still produces meaning and continuity, or how people constitute meaning and understand in structures that in the final instance, dominate them. Engestrom and Middleton have characterised this division between focus on structural determinism and micro-level agency as 'historically relevant macrosociology-without-agency' as against 'agency-driven microsociology-without-history' and from a Marxist perspective, Stark has emphasised the continuing capacity for agency—traditionally, workplace militancy and disruption—in the workplace (Stark 1982; Engestrom and Middleton 1996: 2).

To correct this imbalance, there is, however, a literature on the left which has begun to look at ordinary and mundane workplace life in the automated, and particularly gendered white collar office, where the vast majority of routine, ordinary work now takes place (Huws 2003; Greenbaum 2004). Wajcman, in particular, has observed the 'gender-blindness' of Marxism which has acted to spur her, and other researchers, into a feminist analysis of work and technology. A key question is how women respond to the way in which technologies are 'inscribed' by (male) gender, to use Actor Network Theory language, due to the historical exclusion of women from participation in the design community. (Wajcman 2000: 448, 459). In an early essay, she wrote that such was the culture of technology that 'to enter this world, to learn its language, women have to first forsake their femininity' (Wajcman 1991: 408). Certainly, gender has been taken by some researchers in

technology to be the central structuring dimension in social and personal relations, though issues of class, geography, status and age are also relevant (Lennie 2002). Singh also argues that 'women continue to define technology as masculine, even when their use of technology increases' (Singh 2001).

However, the characterisation of women's lives as essentially passive victims, dominated by larger structural forces and structures (whether the family, or technology), has come under criticism for being both empirically inaccurate and theoretically limited. Richards, in her study of family life in a new housing estate, *Nobody's Home,* highlights a different perspective, drawing upon what is known as 'family sociology': people, as members of families and networks are not passive victims of social structures, and women in particular, are not necessarily limited by work or home life, in their interactions in the private and public spheres. Women retain the capacity for agency (Richards 1990).

Wajcman's own position has also been modified, in recognition of the danger of an ideological over-emphasis of the fixed nature of gender qualities and relations. Thus in her view, a less strident perspective could result in the fruitful study of women's use of technology (in domestic and work settings), and their relationships with different technologies could result in new and more appropriate design and understandings of the place and construction of technology in women's lives (Wajcman 2001: 5978-5979).

Other recent left-feminist perspectives offer a more fine-grained picture of working lives with ICTs contextualised by changes in the relations of production. Greenbaum and Huws argue that because of the inherent dynamic of capitalism to counter falling rates of profit, management is always on the lookout to cut costs in office and service economy work, where so many jobs now lie. Technological innovation is used as part of that cutting process. Office automation from its earliest days in the nineteenth century, with the introduction of female typists, has looked to automate processes, particularly through the 'pink collar' labour of women (Virnoche 2001). Huws notes that one significant part of contemporary office work now includes 'reproduction of the workforce': activities associated with teaching, social work, health, and clearly community development. Furthermore, Huws observes that such jobs have an additional technological dimension—

she speaks of online form-filling and reporting for social workers—and these tasks should not be mistaken as central task (Huws 2003: 163-165)

At the same time, Huws argues that technology frequently *adds* to home-based, unpaid responsibility, through the need to manage the electric household, the need to shop in distant supermarkets, manage complex financial accounts, and cope with the assault of market consumerism on members of the family. Thus, while on the one hand there has been an ideology or aura of 'skilling' and 'flexibility', with the introduction of more sophisticated systems of information management, technological change also has the side-effect of increased routine, consumption and surveillance of daily life (Marx 2001). Routine and control occur despite the reality that much workplace knowledge and activity is not routine, but tacit and responsive, leading to frequent, chronic and endemic contradictions between 'head' and 'heart' work. One study of banking, for example, notwithstanding the technical rationale of system designers, and the profit orientation of boards and senior management, has demonstrated problems with call-centre staff's interface with technical systems. Compliance with the new rules of operation via technology was frequently side-stepped in the call centre, with many other 'gambits of compliance' coming into operation to manipulate the technology in favour of personal interaction and problem-solving with customers. Personal contact with people has been shown to have enormous symbolic significance to bank employees. Greenbaum also notes problems with similar routine systems such as the processing of welfare claims (Hughes J.A., O'Brien J. et al. 2001)

Greenbaum identified two reasons for the technology-user dichotomy. First, the rarefied practice of much software design is subject to commercial pressures, in the corporate or university testing laboratory where the interest in reality does not extend much beyond the keyboard. This contrasts with the potential for testing in more diverse and complex real world environments. This is a problem also particularly observed by Rose in the Information Systems area (see p. 189). Second, the industrialisation or commodification of information and knowledge has been coupled with an attempt to turn processes into replicable and rationalised components which work towards the generation of profit. This has resulted in a corporate environment where:

> The consultants' approach looks at *information flow* rather than social relationships, *problems* instead of workplace situations, personal-file *descriptions* rather than tacit knowledge, and rule-based procedures over on-the-job experience. (Greenbaum 2004: 70)

Greenbaum claims that her views have been informed by many in-depth interviews with white collar workers, but from a left perspective, her study would have been enriched by a deeper exploration of empirical and theoretical categories for identifying the multifaceted and complex causes which engender opportunity and constraints in the office and home.

Despite such limitations, Greenbaum presents a far more realistic picture of the unequal structure of the contemporary workplace as compared to the corporate and somewhat fantastic (Willmott 1996) views of Zuboff about technology in the workplace. Zuboff speaks of an 'informating economy' which would lead to an increase in skills and new more humanistic forms of management, where:

> New work depends upon a radically different approach to the distribution of knowledge and authority, according to principles of equal access and equal opportunity. (Zuboff 1988: 14)

In contrast, Greenbaum, Braverman and other writers (Dawson and Bellamy 1996; Meiksins 1996), take the view that except for a fortunate elite, new technology is by and large not about democratisation or new opportunity in the workplace, but rather, the restructuring, and in many cases, the degradation of skill and reinforcement of routine and degrading work. The halcyon days of the independent anti-authoritarian hacker, if they ever really existed, creating new systems and knowledge (since by and large co-opted into corporations), are over. As with other forms of technology, capitalism (including state capitalism as in China and until recently in Eastern Europe) can continue to be used to drive down the skill base and wages, and reinforce job insecurity.

Another body of innovative Marxist work is worth reviewing, centred on the work of Antonio Negri and the 'autonomist' stream in Italian Marxism. This work has particularly interested a number of Marxist theorists of modernity. In Marx's *Grundrisse*, in what is known as *The Fragment on Machines* there is a reference to the development of new forms of labour in a future stage of capitalism, where material wealth is replaced by a new form of wealth, the 'social brain':

> The development of the means of labour into machinery is not an accidental moment of capital, but is rather the historical reshaping of the traditional, inherited means of labour into a form adequate to capital. The accumulation of knowledge and of skill, of the general productive forces of the social brain, is thus absorbed into capital, as opposed to labour, and hence appears as an attribute of capital, and more specifically of fixed capital, in so far as it enters into the production process as a means of production proper. (Marx and Nicolaus 1973: 696)

This reference, and others in Marx, have resulted in a variety of speculations, including the suggestion that a fundamental shift has taken place in the condition of labour, now disassociated from traditional relations of production. The struggle over knowledge and information has replaced the struggle between labour and capital. The struggle takes place over the 'capital' inherent in the collective 'general intellect', representing the collective power of the 'social brain', from which, as Lazzarto, argued that:

> Not only has intellectual labour not only been subjected to the norms of capitalist production, but a new 'mass intellectuality' has been constituted between the demands of production and the forms of 'self-valorisation' that the struggle against work has produced. The opposition between manual labour and intellectual labour, or between material labour and immaterial labour, risks failing to grasp the new nature of the productive activity which integrates and transforms this separation. (Lazzarato n.d.)

Or in plain English, traditional Marxist categories which contrasted manual and white collar are no longer an adequate way to describe contemporary means of production: not factory tools, but information and knowledge. For such theorists, the majority of workers are no longer engaged in crude, Fordist-type factory work, but rather, in relations with the means of production that require some intellectual skill (in the bureaucracy and in the services industries). Many of them use new technologies, and this would appear to cover many workers now engaged in office work or service industries. Hardt and Negri have been the major proponents of this thesis, and proposed that:

> The immediately social dimension of the exploitation of living immaterial labor immerses labor in all the relational elements that define the social but also at the same time activate the critical elements that develop the potential of insubordination and revolt through the entire set of laboring practices. After a new theory of value, then, a new theory of subjectivity must be formulated that operates primarily through knowledge, communication, and language. (Hardt and Negri 2000: 29)

In a revolutionary parallel to Zuboff, they assume that a rhizomic spread of information power is inherent, but, it will undermine the capitalist system rather than reinforce it. A doctrine of immanent revolt is extended by Hardt and Negri into a doctrine for a general theory of labour—all jobs have potential for electronic conflict and emancipation from drudgery in the later stages of capitalism (Dyer-Witheford 2005). Thus, hackers, cyberartists, indymedia and other cyber-independent activity would seem to prove this thesis, and this vision of liberating technology is applied across the board to a vision for all forms of labour, in contrast to the more conventional, dystopic approach of Braverman and others. However, Dyer-Witheford has provided a reality check on such speculations. The idea of the immaterial worker or immaterial labour is at a true remove from reality: in fact, most work is captured in particular physical, and gendered environments in particular time and space conditions (for example, the traditional 9-5 worker, or home-based online worker with a more flexible schedule to be filled in a 24-hour day). The body is subject to continuing constraints in front of the screen. Hands and eyes need rest, and backs ache. We have not become cyborgs. Traditional relations of production—working on particular terms and conditions, subject to sanction if those terms and conditions are not met—continue for the vast majority of people.

Dyer-Witheford makes that important point that Hardt and Negri engage in an idealised reification and reductionism in his discussion of 'general intellect'. He speaks of the comparative absurdity of thinking that highly skilled and privileged (male) programmers in the West are comparable to Mexican women assembling computers on the border with the USA in a special industrial zone with low wages and bad working conditions. Thus, he concludes that 'immaterial labor theory is not well-fitted to distinguish those gradations of toil, all critical to an advanced techno-scientific infrastructure, and consequently risks universalizing experiences most available to labor insofar as it is both Northern and male' (Dyer-Witheford 2005: 150-151).

However, Hardt and Negri are attractive for the sensitising they provide into a better understanding of ICTs and the place of new forms of 'virtual' information and knowledge in the workplace. For many white (including 'pink', i.e. women) collar workers in the West (or the developing middle class in the third world), 'immaterial labour' is part of the work

done, though it is not always liberating in nature. The studies of Neighbourhood House workers presented below demonstrate the complex *situation* of technology within a series of relationships or circles of other forms of communicative and caring work, some more dominant than others —akin to Goffman's strips (see p. 132)—that heavily influence their lives. More fine-grained analysis is required.

Structural functionalism

Structural functionalists emphasise the role of belief, ideology and socialisation, rather than the instantiation of social order based upon control of the means of production as found in Marxist thinking. This view is familiar from Max Weber's emphasis on the emergence of social structures based not upon simple relations of production, but socialisation and the rationalisation of social status and including the potentially dead hand (the 'iron cage'[32]) of bureaucracy. Furthermore, Durkheim's emphasis on social solidarity as a form of social 'glue' also underpins this viewpoint (Giddens 1979b; Weber and Heydebrand 1994). For structural functionalists, a system works towards ultimate equilibrium, and in the words of Parsons, the key theorist in the area:

> The equilibrium of social systems is maintained by a variety of processes and mechanisms, and
> their failure precipitates varying degrees of disequilibrium (or disintegration). The two main
> classes of mechanisms by which motivation is kept at the level and in the directions necessary for
> the continuing operation of the social system are the mechanism of socialization and social
> control (Talcott Parsons, cited in Lockwood. (1970: 429)

Taking this view of the legitimising role of socialisation some steps further, for organisational theorists who work within a structural-functionalist point of view, the purpose of organisation theory is about engineering the control mechanisms and resources available to the social system of an organisation for such matters as the management of conflict, the promotion of internal knowledge sharing, or the creation and utilisation of resources (such as ICTs) for the maintenance of organisational equilibrium. However, final-

---

[32] As Weber wrote so eloquently: 'no one knows who will live in this cage in the future, or whether at the end of this tremendous development entirely new prophets will arise, or there will be a great rebirth of old ideas and ideals or, if neither, mechanized petrification embellished with a sort of convulsive self-importance. For of the last stage of this cultural development, it might well be truly said: "Specialists without spirit, sensualists without heart; this nullity imagines that it has obtained a level of civilization never before achieved"' (Weber, Mills et al. 1958: 181; DiMaggio and Weiss 1983).

order questions about the legitimacy of underlying systems of domination (including work-task rationalisation, downsizing, and other measures geared towards profit-making in contemporary business practice), are not part of the debate. The perspective of left management critics like Greenbaum discussed above is not part of the equation (see p.123). The individual is, therefore, for structural-functionalist thinkers, in the final analysis, a subservient and willing actor in a system, socialised through complex social restructures and relationships to accept the *legitimacy* of a consensus-building sets of norms, and *sanctions* or mechanisms for *social control*.

Interpretive traditions

Is there another way of understanding how people exist within complex structures? Are they simply cogs in a wheel, with limited agency? Part of the solution to this problem has come out of the phenomenological-hermeneutic tradition, in which primacy is given to the individual who has independent powers of self-determination and agency. As expressed by Schutz, a key figure in phenomenology:

> [W]e prefer to take as our starting point, not social action or social behaviour, but intentional conscious experiences directed toward the other self.

The limitations of such an approach are clear when we note Schutz's qualifications in the same discussion, in his statement that:

> The soldier keeping in step with the man in front of him is not engaging in social action…for, as a rule, he is orienting his behaviour not to the other man's consciousness but to his body, and then only to his bodily movements as such, and not as clues to his conscious experiences. (Schutz 1972: 144)

By only being concerned with intentional action, Schutz, and other phenomenologists decontextualise the world of recursive activity, thought and action, in which habit and agency—recursive practices—can be as important as intention. A focus on intention also removes the capacity to theoretically deal with unintended and unintentional outcomes. People do things, and other things unintentionally occur. Reed, in particular, warns of the dangers of such a perspective when applied to the study of organisations. Critiquing Boden, who argues that organisations are ultimately only the 'business of talk' and that they are

'only brought into existence as a temporary and negotiable reality through the conversational and linguistic conventions it instantiates', Reed firmly makes the point that such a perspective pulls a blind over the reality of a larger contextual environment involving real issues of control of the means and relations of production, power, and the resultant enabling and constraining opportunities in the reproduction of social practices (Reed 1997).

Thus, a focus on the phenomenon of mundane and micro-level interaction (the 'talk') alone, valuable as it is to describing the dynamics of small group or interpersonal activity as might be found in a CBO such as a Neighbourhood House, is therefore incomplete, a-temporal and a-historical with respect to how it relates to the problem of reproduction of organisational or institutional principles on a larger scale. It cannot explain the *origin* or *direction* of an institution or organisation, or the beliefs and practices (the modalities of structuration) structured in a particular time and place. As with Engestrom and Middleton, Reed is more explicit: a focus on the micro-level alone provides a single-level social ontology in which agency and structure are 'rendered down to localised social practices bereft of any institutional underpinnings or contextualization, insightful as it may be at the micro-level of interaction between players'. This is resonant of the 'postmodernist turn or sensibility' in which the search for methodological order and explanatory coherence is rejected as a fallacy'. In a post-modern theoretical jumble, people are 'stuck' in particular positions, and we cannot explain why, or how things change (Reed 1997: 25).

Reed finds a solution in critical realism, based on the work of Roy Bhaskar, who makes a distinction between human action and social structure: each has distinct properties. We are faced with two forms of reality: one is the reality of social and institutional order which has particular qualities, the other, the reality of human interaction with its particular qualities that can only be unmasked through interpretive or hermeneutic methodologies. As Bhaskar puts it, social structure and social activities are:

> Existentially interdependent but essentially distinct. For while society only exists by virtue of human agency, and human agency (or being) always presupposes (and expresses) some or other definite social form, they cannot be reduced or reconstructed from one another…The social

Reed proposes a solution through a 'nested' social ontology, wherein 'social mechanisms and practices operate at different levels of abstraction that tie into each other within a stratified, multilevel, and relational model of society' (Reed 1997: 31), resulting in an 'analytical dualism' which can account for 'positions-practices' and the means which generates them (Archer 1982).

However, is this less of a solution than a misconception of the problem? The key issue to be encountered with this perspective, perspicacious it may be, about the danger of a collapse into a flat, decontextualised relativism, is that it somewhat crudely exaggerates the need for a dualistic, manichaeistic conception of structure/action— that an absolute split is required for a valid existence.

Reed, for example, criticises ethnomethodologists such as Goffman. In the latter's defence it should be made clear that Goffman was well aware of pitfalls of such oversimplification, and argues that despite the apparently flat ontology of the face-to-face or person-to-person domain of what he calls 'interaction order', the 'human condition, that is, for most of us, our daily life', is well and truly *socially situated* (and taken up by Suchman and others in their ethnographic studies of workplace technology), dependent in the final analysis, on a range of grander social influences. This is entirely constituent on what Goffman refers to as 'loose coupling', a set of rules for transformation between the micro or co-present levels of interaction order and larger micro or macro-level social configurations. Thus, Goffman was well aware of the multi-layered nature of social contextualization, suggesting that life is the intersection of series of 'strips' as perceived by the actor, which contain the rules or premises of frameworks which constitute the interaction order of social activity (Goffman 1983: 2; Goffman 1997).

By extension, and given his dependency on Goffman and other ethnomethodologists, Giddens also sees an unnecessary conflation in the structural–functionalist concepts of system integration and system equilibrium, something already recognised by a number of earlier sociologists. Wrong, in particular, had spoken of an 'oversocialised conception of

man (sic)', which underplayed the capacity for human agency (Wrong 1961; Lockwood 1970). Furthermore, as Granovetter observed in a widely cited article, many economic theorists have a similarly thin, 'atomised' conception of the social dimensions of human behaviour, leading to an underplaying of human agency, in preference for an unreal model of human behaviour which operates with perfect intention and information, which does not match social reality of most intentions or behaviours. Interfering social relations or influences are conceived of as 'frictional drag' in a world which is theorised as one based on rational choice and allocation of resources. The reality of the interplay between social and economic behaviour (winners and losers) of course is much more complex (Granovetter 1985: 484).

Giddens' solution

Placing a different interpretation on the concept of system integration which lies at the heart of structural functionalism, Giddens suggested that integration only refers to the 'regularised ties, interchanges, or reciprocity of practices between either actors or collectivities'. Furthermore, he emphasises that *integration* is not synchronous with any *determinism* which forces cohesion or consensus, providing for a closed loop in which actions external to the system, or the process of change, come to be seen as deviant in structural-functionalist eyes (Giddens 1979a: 76). Indeed, society is the outcome of a 'skilled performance' by actors in manipulating ties and interchanges with others, in which there is always the capacity 'to do otherwise'. According to Giddens, labour process theorists such as Braverman have underestimated the capacity for personal agency: while workers can be constrained, overall, by particular and regrettable relations of production, they are still 'knowledgeable agents' who not only manipulate the division of labour, but constitute and give their lives meaning (Giddens 1982: 40). Social order (however unpleasant it may be), is constituted in every encounter, the reconstitution of the known and routine, to which it provides a 'master key' from which multiple opportunities beckon (Giddens 1984: 60).

The significance of Giddens on this issue is that he is allows for what is recognisable as the reality of institutional life: order, conflict, power and resource inequities, and disorder can coexist, with the setting of the playing out of particular structural principles providing for

133

the character of a particular system (for example, capitalism, the Ummayad khalifate, a Neighbourhood House), beyond a crude organisational or systemic determinism. Organisations and institutions are not just sets of written rules or strategic plans what people 'make' of them, but seesaws of competition for dominance.

However, one of the problems in dealing with Giddens is to decide whether his theories and concepts have any practical application. Giddens admits that he is not interested in causal and ultimate theories, and thus, that 'structuration theory is not intended as a method of research, or even as a methodological approach' (Giddens 1989: 296), and on other occasions, particularly in his most substantial and well-recognised work on structuration, *The Constitution of Society*, he adds that his theorising is not intended as a prescriptive methodology, but rather, 'the concepts of structuration theory, as with any competing theoretical perspective, should for many research purposes be regarded as sensitizing devices, nothing more' (Giddens 1984: 326). Making the empirical application of his theory appear even more problematic, he has added that:

> In a generic way, 'structure' does not refer to descriptive features of social life, situated in specific contexts of time and space. When we look for the stabilities or the 'continuities of form'…we are analyzing the reproduction of social practices'. (Giddens 1989: 254)

Of course, Giddens is aware that there is an ultimate reality, significant 'social influences which work behind our backs' (the prime movers of so much concern in Marxist analysis). At a personal and conscious level, people may only be dimly aware of such influences and conditions on our everyday life or the means by which they are implicated in the long-term formation/transformation of social institutions, even though the linkages may be profoundly significant (Giddens 1976: 157; Harvey 1990). Such a 'dimness' however, should not be confused with personal unintelligence about everyday life or an argument that lack of consciousness, or weak demonstrable links are irrelevant to empirical realities, thus privileging the individual actor in an individualistic fantasy world. The classic position here

was Margaret Thatcher's statement that: 'there is no such thing as society: there are individual men and women, and there are families.'[33]

Therefore, taking his cue from Marx and in language echoing Marx's own in the *Eighteenth Brumaire of Louis Napoleon* cited previously (see p.120), in a riposte to structural-functionalism, Giddens wrote in his first major statement about structuration that:

> The production or constitution of society is a skilled accomplishment of its members, but one that does not take place under conditions that are either wholly intended or wholly comprehended by them…The key to understanding social order …is not the 'internationalization of values', but the shifting relations between the production and *reproduction* of social life by its constituent actors. (Giddens 1976: 102)

Thus, socialisation into particular sets of values or structural principles, whatever the label, is not the ultimate key to social order. Rather, *situated relations of production and reproduction* are. It is Giddens' adroit adaptation of how to couple the insights of micro-level analysis onto the more abstract context of structure (including the use of modern technologies) that makes his work so valuable.

In this respect, his work, to the chagrin of some of his critics, is institutionally conservative: he is not engaged in developing a critical theory of society (Habermas 1972; Bernstein 1989), but ultimately, only flawed, if highly attractive theories about recurrent social practices which are instantiated through 'the communication of meaning, the exercise of power, and the evaluative judgement of conduct' (Bryant and Jary 2001: 13). Giddens admits that he has taken key elements of Marx, but without a radical orientation. Unlike progressive or radical critiques of social order, Giddens has not been concerned with promoting revolutionary change. In fact, he acted as an advisor to the Blair 'Third Way' New Labour government in the UK in the 1990s. In 2004 he was elevated to the House of Lords, where his maiden speech noted the continuing pace of technological change and its effect on the labour force[34]. This engagement with government contrasts to other academic critics who see their core intellectual responsibility as one of constant deconstruction and

---

[33] September 23, 1987, Interview with *Women's Own* magazine http://www.margaretthatcher.org/speeches/displaydocument.asp?docid=106689 (Accessed: 12 August, 2005)
[34] *British Parliamentary Debates*, Lords, vol. 664 (2004), part no. 121.

critique of the negative side of capitalism. This of course, is an old theme in the critical wing of sociology, going back to C. Wright Mills in the 50s, and even earlier to Staughton Lynd's pre-World War Two work (Lynd 1939; Mills 1959). Notwithstanding his political posturing, certain of Giddens' frameworks are therefore ripe for appropriation into areas where theories of structure are thin (Rose 1998). Structuration, as a practical analytical tool, could be just as well applied to the study of the dynamics of the Communist Party of North Korea, if there was an entry point into the party system. Conversely, if one is interested in critical theory, the practical application of his frameworks as an analytical tool could be used for the development of new critical theories.

At a practice level then, Giddens is engaged in what can be called analytical bracketing as a high level theoretical enterprise without a necessary radical outcome. In his own words, he is engaged in 'institutional analysis' (the study of the creation and reproduction of structural principles on a larger scale), and the analysis of 'strategic conduct' (the dimensions of human agency, though these are conducted as separate enterprises (Giddens 1979a: 80-1). The process of structurational analysis puts a freeze (a methodological *epoché*, as he puts it), upon each 'enterprise', though in reality, the relationship between the two continues, each drawing on the other in the process of social reproduction. Practically, however—and this is where structuration faces a difficulty—it is all too easy to emphasise one side conceptually or empirically, and therefore difficult to keep both panes or panels in mind at the same time.

I have represented the bracketing of institutional analysis and the analysis of strategic conduct in the figure below. The shaded middle area represents an 'analytical zone' into which either side is drawn or practically, the mixture of human conduct takes place at micro and macros levels. The 'boomerangs' represent, as it were, two 'eyes' looking at the problem in two different ways. In addition, a meso level can also be considered, something between the level of institutional analysis and the analysis of personal and interpersonal behaviour. The meso level could be represented, for example, by community organisations such as Neighbourhood Houses which operate at the boundaries of the personal and societal, and the macro level could represent the networked effects of such organisations at a larger social scale.

Institutional Analysis	Analysis of Strategic Conduct
The analysis of rules and the utilisation of resources for social reproduction	The ways in which people draw upon the modalities of structuration in social reproduction
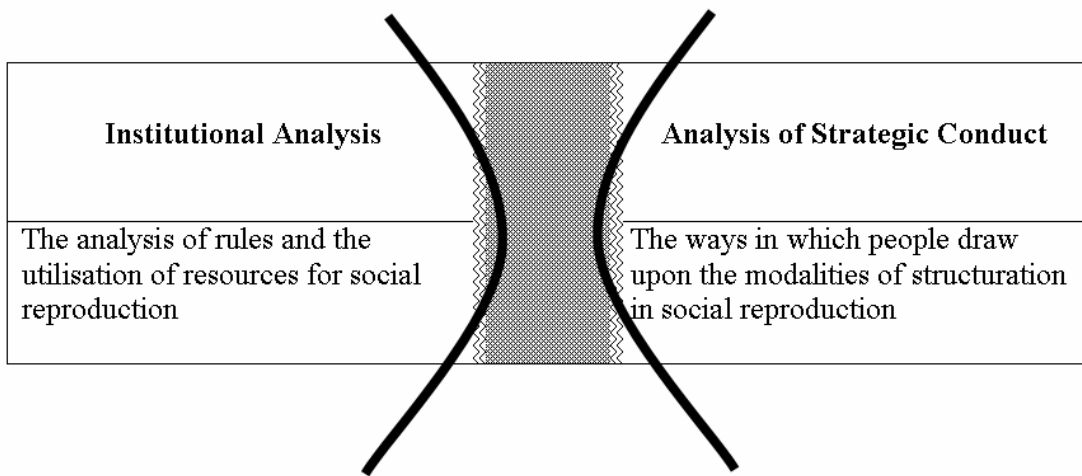
Figure 7. Institutional Analysis and Strategic Conduct

This analytical division can be easier to theorise than apply in practice. As an example of the difficulty, Giddens explained the context of 'sharp illumination' in Goffman's work and the conceptual imbalance which can occur. Goffman 'bracketed' institutional analysis in order to recenter the analysis of, and provide brilliant insight to people's conduct—their strategic conduct and agency—in all sorts of complex, micro-level social relationships and organisations (Goffman 1971). This arguably led to Goffman neglecting the development of a wider account of the life of organisations (the macro-level institutional analysis end of things), even though as can be shown, Goffman was well aware of the intersection of multiple and contesting 'strips' or 'frames' (see above, p. 132). However, Giddens wrote that in Goffman's world, 'institutions appear as unexplained parameters within which actors organise their practical activities' (Giddens 1979a: 81). Giddens' concern is to provide a balance to this neglect, the 'unexplained parameters', a new 'sharp illumination' for the reproduction of the institutional and strategic or agency dimensions of the duality.

Furthermore, a strong criticism has been made of Giddens that despite his desire for ethnography, he has never really engaged in such empirical work himself (a fact he admits), despite the considerable and detailed commentary he has offered into the work of others

(Thrift 1985; Giddens 1989; Gregson 1989). Notwithstanding his lack of immersion in practical fieldwork or action, he has elaborated a very useful theoretical frame for understanding the practice, known as the 'double hermeneutic', the iterative process between researcher and researched, through which change in both parties is effected.

Three key points are developed in his discussion of the double hermeneutic, and they are relevant to any empirical research, such as that conducted with the Neighbourhood House workers. First, Giddens claims that all social research 'has a necessarily cultural, "ethnographic" or "anthropological" aspect to it' (Giddens 1984: 284). The key implication of this statement is that the researcher needs to be thoroughly aware of the theoretical basis of hermeneutic and interpretive or qualitative methodologies. Through entry into the life-world and understandings of the researched, the researcher is discovering and illuminating his or her frames of meaning as well as those of the 'subject' via particular communicative and interpretive schemes and the mutual process has mutual effects on the researcher and the researched (see p. 20). Second, there is a requirement for the researcher to have a high degree of awareness of the complex skills which actors use in everyday life. Again, Giddens emphasises that while these skills are bracketed out in institutional analysis (thus, privileging macro over micro-levels of analysis), this is not only just a methodological issue. The danger is that a bracketing out of micro-level agency in a desire for modelling macro-level, abstracted, and simplified 'institutional' realities devoid of micro-level interference makes for a flawed picture of how institutions are constituted. The desire for abstract and templated, corporate and disciplined forms of knowledge (Foucault) with apparently objective and universal principles for application, forces a conceptual 'freeze frame' that excludes more messy and problematic realities that can de-legitimise power and authority relations, as suggested by Greenbaum in her criticism of the user/designer split in Information Systems (see p. 125).

Finally, Giddens emphasises sensitivity to the time-space constitution of life. By this he is emphasising the movement of people through time and space, which are themselves particular social and technological formations, a point that is too often ignored in the analysis of social order (Giddens 1984: 284-285). This latter issue is taken up in particular detail in the following chapter.

In another discussion, Giddens outlined what he called a 'structurationist programme of research for modern social science'. Giddens links this to a general study of 'society', as a 'politically and territorially constituted system' (Giddens 1989: 300) . Obviously, the aims in this thesis are much more modest, but the points he makes about a research agenda are highly relevant. The research agenda includes, in addition to sensitivity to the double hermeneutic:

- Research into the 'shifting modes of institutional articulation', and by this he means the particular character and qualities of institutions (as forms of social order, both formal and informal), that are manifested as regular social practices.

- Research that would be sensitive to the 'reflexive intrusions of knowledge into the conditions of social reproduction', that is to say, the way in which skilled actors (which we all are) think and act in our social settings.

The study of CBOs such as Neighbourhood Houses is a contribution to this research process.

Chapter conclusions

Structuration theory as proposed by Giddens attempts to reframe the problem of agency and order as particularly posed by traditional Marxism and structural functionalism incorporating insights of interpretive and hermeneutic methodologies. Indeed, while the foundations of his wide-ranging and synthetic theoretical frame remain controversial (and perhaps will be eternally debated), they are attractive to non-sociological specialists because of the potential for their application to the study of how action and structure play out in institutional settings, including settings which use ICTs. Perhaps his formulations about social order can be seen as an analytical 'ideal type', to be tested against reality[35].

---

[35] Max Weber conceived the concept of the 'ideal type'. 'An ideal type is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct (*Gedankenbild*). In its conceptual purity,

Agency is conceived of at several levels, but at its core is the idea of the 'duality', a chronic reproduction of 'memory traces' by individuals which cement themselves (and are subject to variation) in everyday interaction and practice as 'structural principles'. Across time and space, structural principles are seen to create social structures and social systems. In addition, the action-structure dynamic draws upon human and non-material resources, including different forms of technology. The ability to provide a dynamic way of studying the interaction between technology and social order is attractive to researchers in technology.

However, Giddens has also highlighted the difficulties of an analytical split between socially-sensitive macro and micro-level analysis, in which certain foci tend to be privileged. This artificial split is a problem which appears in many fields, including the study of information management and systems, resulting in a theoretical and practical weakness on their part. In the case of macro-level analysis, the focus tends to be upon agglomerated larger-scale realities, with a discounting of micro-level, personal realities that contribute to the interaction order. In fact, reality is constituted by sets of intersecting 'strips' or 'frames' (Goffman), which contribute to the duality of structuration in the dialectic between personal agency (frequently co-present, micro-level interaction) and the group (macro, and even meso-level), instantiation of structural principles to constitute institutional realities. Giddens' outline of the modalities of structuration is a contribution towards an analysis of simultaneous micro and macro-level interaction in the construction of reality.

Finally, Giddens has provided a framework for the conduct of empirical, and particularly qualitative research, emphasising the communicative relations which occur between researcher and researched and their and contingent effects on the research process.

However, particular aspects of Giddens' framework need to be examined in some detail in order to provide linkage to the work of researchers who have used his framework to the

---

this mental construct (*Gedankenbild*) cannot be found empirically anywhere in reality. It is a utopia' (Weber, Shils et al. 1949: 90).

study of technology (primarily material artifacts and technical processes), in organisations. This takes place in the following chapter.

7   Relevant concepts in structuration

There are a number of key concepts in Giddens of particular relevance to understanding institutional and organisational dynamics and the place of ICTs in them. These will be discussed with the intention of highlighting particular theoretical innovations relevant to the study of ICTs. These innovations have been addressed by other theorists whose work will then be discussed in more detail in the chapter following.

Knowledgeable agency

In institutional settings, people reproduce and otherwise respond to the means of communication, power relationships, and ways of behaviour around them. Institutions can be conceived of as the setting for multiple reproductions of structural principles by agents. People ('actors') in structuration theory, are 'knowledgeable agents' with the capacity to transform situations. They are not merely passive victims or 'cultural dopes' of institutional or structural arrangements. They are what Goffman refers to as 'skilled actors' (Goffman 1983; Goffman 1997) The same criticism can be applied to Marxist or structuralist approaches which have 'de-centred' the subject's (i.e. the agent's) capacity to act independently, akin to the bracketing out of human agency in institutional analysis and modelling (Giddens 1979a: 3).

As knowledgeable agents, humans use interpretive schemes to constitute and communicate meaning and then take action with intentional and unintended consequences, 'from the core of mutual knowledge whereby an accountable universe of meaning is sustained through and in processes of interaction' (Giddens 1976: 83). Orlikowski, one interpreter of structuration emphasises that:

> From the perspective of institutional properties, interpretive schemes represent organisational *structures of signification* (her italics), and from the power perspective, power enters into human interaction through providing organizational capabilities for humans to accomplish outcomes. (Orlikowski 1992: 404)

Giddens is less concerned with explaining the unconscious but rather rationalising what people *do.*

People have two forms of consciousness, which allows them, on a day-to-day basis, to make choices. Practical consciousness is akin to tacit knowledge or 'practical' knowledge, things known but which at times are difficult to explicate. For example, a skilled tailor may find it difficult to describe or write down how she makes a superb suit, or a community worker can find it hard to explain in the abstract how she conducts a particular community development game. Many of the interviews with community workers, as will be shown, demonstrate a deep, frequently tacit, and complex web of knowledge which is used to implement particular 'technologies of care', that is, skilled processes involving the deployment or embodiment of particular skill sets. However, these processual technologies (see p. 87) cannot be easily replaced by a machine such as a computer or a software program to simply replicate discrete processes, when there are multiple contingencies or possibilities to be taken into account. If anything, ICTs function as an augmentation device (see p. 243)—but not the centre of activity.

On the other hand, discursive consciousness refers to things which people can describe, and their reasons for performing them. This is the knowledge that we often find in instructions, and ideally, what the practice of knowledge management is able to draw out of employees in an organisation to 'engineer' better practices.

However, the barrier is not firm between practical and discursive consciousness: 'Between discursive and practical consciousness there is no bar; there are only the differences between what can be said and what is characteristically simply done' (Giddens 1984: 7). The dynamic between the two is instantiated as actor knowledgeability and agency, and is represented in the figure below in which the 'mind', with all its depth can be seen to be represented by the sphere.

Unconscious motivations

Practical Consciousness

Discursive consciousness

Actor Knowledgeability
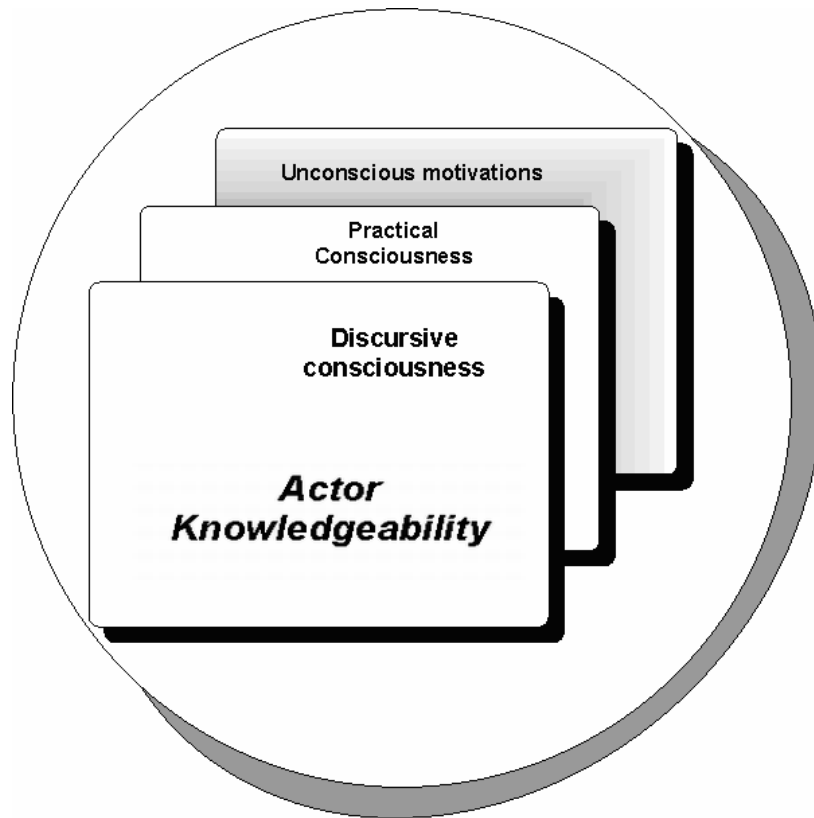
Figure 8. Conceptualising Knowledgeable Agency

Structural properties of social systems: a theory of power

Structural properties can be regarded as a more 'permanent' or seemingly objectified instantiation of the duality, leading to particular ways of doing things in an institution or organisation. Sewell also calls these 'schemas', and his insights are incorporated into the discussion which follows (Sewell 1992). We live with multiple structural principles or schemes (many contradictory) at different levels of tacit or discursive knowledge, commitment, understanding, and social embeddedness. This idea is also familiar from Goffman's notion of intersecting 'strips', whatever the depth of linkages to grander structural forces (above, p. 132). The existence (as memory traces) of complex structural properties or schemas is very familiar—chronic—within all forms of formal and informal life. For example, families (of whatever composition), or organisation of all sorts establish their private practices, languages, symbolic gestures, and understandings of 'what goes', which take time for any visitor to understand, or which are hidden from the public. A quite

striking example of a private/public practice split (Goffman's personal 'back' and front' region), can be seen in the public and private behaviour of police (Goffman 1971; Giddens 1984; Manning 1997).

Furthermore, structural principles, as 'mental' concepts are inherently transportable and transposable, and we constantly move and adapt them from one situation to another. Thus, for example, I leave one organisation and join another, and have fair idea how meetings are conducted, though the intersection of 'my' structural principles with 'theirs', may not always be a close match and require investigation and negotiation. As another example, organisations such as Neighbourhood Houses are 'inhabited' by paid staff and volunteers, bound by particular understandings and contingent practices. Of course, such understandings and practices can also come into conflict or be contradicted and can be understood analytically at least, as the interplay between the different modalities of structuration.

The three key dimensions of structuration are the structures of signification, domination, and legitimation (at the highest level of analysis). Giddens' discussion on this point is particularly abstruse, and revolves around the theory of the communication of meaning, but it appears that one interpretation that can be placed upon his development of what he calls a 'valid [analytical] procedure' (Giddens 1984: 30), is that through the vehicle of language in particular (as the major means of communication), particular patterns of domination—of the dominance of particular forms of institutional order—are set in place. Thus, the three key modalities of structuration which 'analytically' are equal, in reality, do not exist in a homeostatic, functionalist balance as equal parts of a whole. In fact, asymmetry is part of the natural order of things, depending on the particular character of the system being analysed. These distinctions can be represented by the following figures, as they exist in a time-space continuum (in which they are both a vehicle, and which they help to construct, see below, p. 158).
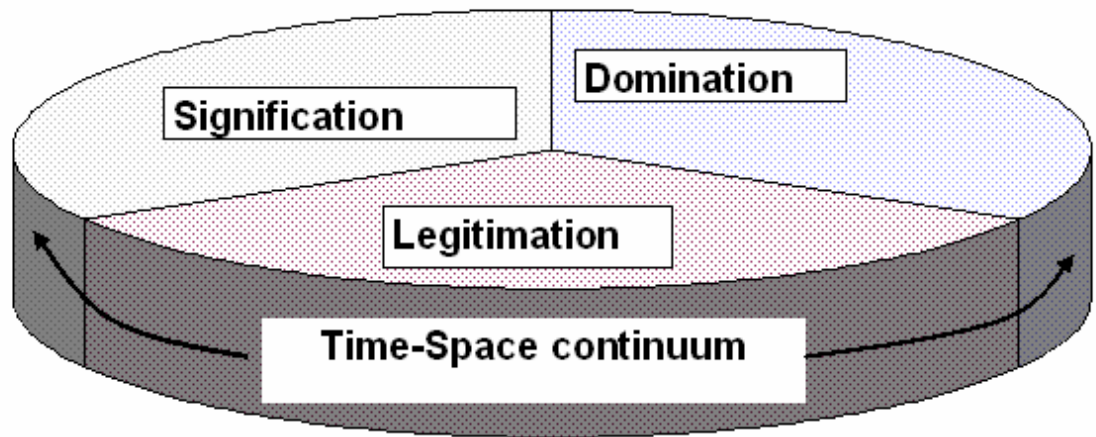
Figure 9. The Analytical 'Balance' of Structuration

In contrast, in real social systems, some domains are more prevalent than others. Thus, Giddens outlines a 'classification of institutions', with the 'directions of analytical focus' (Giddens 1979a: 106-108). This is not well explained by him, but it appears that the ideas of 'embeddedness' and 'systemness' (see p. 156) go some way in reflecting degrees of asymmetry, reciprocity or integration between actors in either co-presence or across time and space as they draw upon resources in the reproduction of social order. These concepts provide a way of describing the specific and unequal intersection of signification, domination through the facilitative capacity of resources, and legitimation—relationships of autonomy and dependence (Giddens 1979a: 110)— in the real world activity of what Giddens calls reflexively monitored social conduct, the practice of agency on a recursive basis through life (Giddens 1984: 30).

Thus, in reality, a modelled picture of the relationship of the different domains of structuration might be represented by the following figure, in a setting where the interpretive schemes of signification and normative dimensions of legitimation dominate the regulation of resources, or alternatively, in the absence of dominating significant material or institutional facilitative and authoritative resources, priority is placed upon the symbolic and normative/legitimating regulation of human conduct.
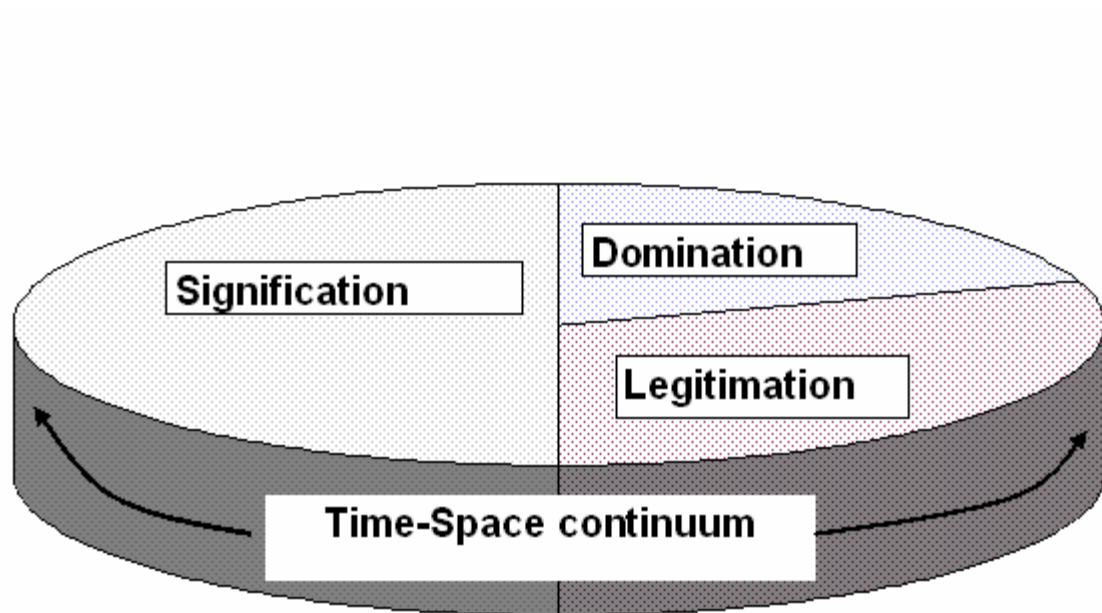
Figure 10. A Putative 'Real' Picture of Structuration

In such a system, structural properties are therefore primarily communicated and institutionalised through particular forms of language, and secondarily, the use of resources as means of control and domination (authoritative and physical), as well as the use of normative means (for example, the love—punishment continuum in families, or approved and disapproved forms of behaviour in organisations). Thus, the practice of parenting in this case could be seen to be conducted through an emphasis on communicative means, inculcating the groundwork for the creation of interpretation of social rules, and secondarily via 'correction' and modification of rules in response to children's prompting and

147

behaviour. At a meso level, when a person joins a new club or takes a new job, new patterns of language are imparted (workplace slang with particular 'insider' meanings), particular media may provide semiotic clues (e.g. uniforms, affiliate badges such as those worn by Neighbourhood House members, or in another case, markings of rank on police), and rules are enforced through differentially embedded sanctions (formal and informal inductions and rituals, or negatively, a first warning, verballing, or detention), and use of resources (for example, in a school, withdrawal of privileges to use particular materials, or email protocols). These cultural patterns, which can be extremely subtle and difficult for participants to describe (as forms of practical consciousness), are way and beyond what might be found in the induction manual or other formalised materials.

However, the rules which underpin the emergence of structural properties cannot be 'blindly' applied, and never exist in isolation from interaction with the real world. As Taylor suggests, rules don't apply themselves, they are applied by people, subject to infinite (and Giddens would claim, knowledgeable) application. Practice (i.e. praxis) is a continual interpretation, reinterpretation and testing out of what the 'rules' *really are.* We all know of instances where the formal, documented rules (rules with a capital R) are in no way an adequate representation of the actual, instantiated interaction between people in 'dialogical' rather than 'monological' or individual acts in particular situations in time and space (Taylor 1993). Extending this metaphor we can claim that organisational and institutional practice is not just dialogical, but '*polylogical'*—many actors, many situations, many different resources (including technologies).

The point made by Taylor previously is a significant one, as it indicates the difficulty of trying to document the dynamic instantiation of rules and structural principles, and the conceptual slippage into deterministic categorisation for the sake of 'efficiency' and 'replicability' of outcomes. This puts a clear limitation upon attempts to quantify and regulate knowledge within particular mechanical or technical procedures and information systems, and is reflected in the 'problem' of knowledge management found in welfare community services, as discussed previously (see p. 87). While regularity and regulation are obviously central to the correct operation of particular technical systems such as a computer or its software, the blanket extension of such principles into the management of

organisational behaviour—including CBOs—is obviously the stuff of a dead hand, particularly when there is an inter-system clash of value systems and principles that cannot be easily resolved.

Modalities of structuration

> Actors draw upon the modalities of structuration in the reproduction of systems of interaction, by the same token reconstituting their structural properties. (Giddens 1984: 28)

As observed previously (see p. 137), the bracketing of institutional analysis from what is called the analysis of strategic conduct can be somewhat confusing, since they are two aspects of the same coin. The former category can be seen to focus on macro level issues around institutional order, while the latter is concerned with understanding the process of human agency.

However, how are such processes best represented? The laconic nature of Giddens' diagrams and variations in explanatory language or emphasis over the decades means that his general model can be subject to various interpretations, and this includes pictorial representations, of most interest as tools for teaching, enlightenment, or as already discussed, as a theoretical simplification for further representation. Thus, a modification of Giddens' representation of the modalities of structuration (Giddens 1984: 29, Figure), modified by Gregory has been adapted by me. I have chosen it rather than Giddens' original (which I believes is a logical derivation figure featured on page 137), because it has a greater sense of conceptual dynamism. Gregory, in his original, has substituted 'Resources', without explanation, as label for the means by which structures of power are conducted. I have reverted to Giddens' original language in my representation for the sake of consistency.
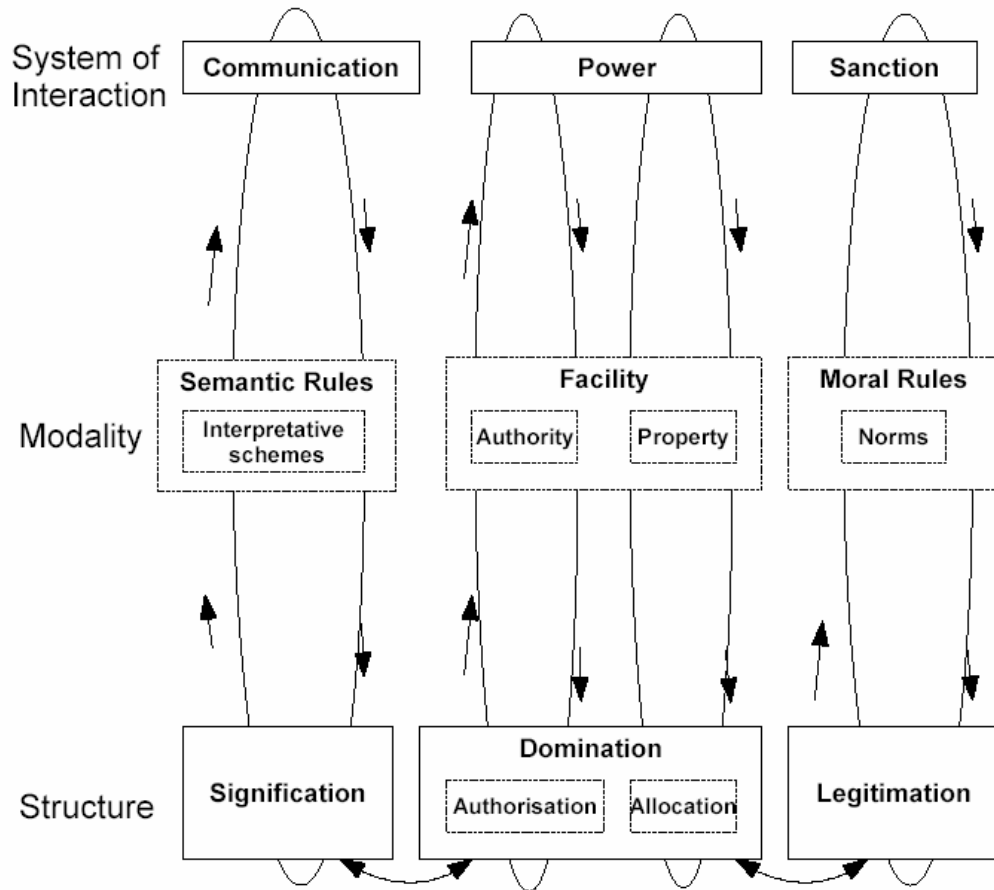
**Figure 11. Dimensions of the Modalities of Structuration
(Modified from Gregory (Gregory 1986: 465)**

It should also be observed that Gregory has reversed the order of Giddens' original figure, putting overarching structure at the bottom rather than top, and systems of interaction at the bottom, but conceptually, this makes no difference to the understanding the process that the diagram contains. The label 'Structure' (at the bottom), represents overall *systemic characterisations* of processes of social reproduction, while the top line (interaction), refers to the *properties* of what can be frequently regarded as micro-level co-present or personal electronic interaction. The middle row represents the means by which these are instantiated.

Dimensions or modalities of structuration—the theoretical elaboration of how power is used— include *patterns of communication* (signification), *use of power* (the capacity to dominate), *and norms of behaviour and conduct* (means of legitimation and morality). Power is the *regular and routine* mechanism for achieving sets of transformations. Power is generative: it provides the capacity 'to do otherwise'. Power is conducted through

150

communication, the use of resources, and the norms/sanctions for particular beliefs and practices. The use of power could be otherwise known as praxis (Giddens 1976: 111). Interpretive schemes draw upon what Giddens calls 'stocks of knowledge'. Such stocks 'form the core of the mutual knowledge whereby an accountable universe of meaning is sustained through, and in processes of interaction' (Giddens 1979a: 83). As a consequence, by drawing upon stocks of knowledge, actors use their power, within particular moral or normative frameworks. Thus, 'actors draw upon the modalities of structuration in the reproduction of systems of interaction, by the same token reconstituting their structural properties'(Giddens 1984: 28-290).

At the level of *interaction* (i.e., the micro level), actors or institutions (the constituent, emergent practices across time and space) draw upon means of communication, power and sanction (or forms of behaviour) in the reproduction of structural principles. The means, or modalities they do this with (in the middle row) are via different interpretive schemes (or media, such as speech and other forms of communication), ways of using different facilities (for example, patterns of power in institutions, drawing upon particular resources, or in a material sense, the use of ICTs), and what Gregory frames as 'moral rules' rather than Giddens' norms, though in earlier versions of his diagram, Giddens had also used the term morality. As a theoretical abstract, at the highest level, 'structure' is therefore the highest systemic or normative level or characteristic representation of particular forms of order ('the voluntary organisation', 'the church', 'the university', 'the school', 'corporate values', community of practice' or 'Neighbourhood House values'). The institutionalised practices which emerge are at the interstices of rules and resources, subject to the relations that are instantiated between them. Furthermore, the disciplining effects of different human and artifactual techniques or technologies, as highlighted by Foucault (see p. 108), can be considered as another way of conceptualising the effects of Giddens' elaboration of the modalities of structuration—interpretive schemes, uses of facilities and resources, and the effects of moral codes (norms, sanctions, and other disciplining practices). They also provide further depth to the multiple ways in which technology can be conceived, around the issues of the meanings imputed to technical systems, and the operation of power as a means of domination over both communities of practice and individuals. The fact that Giddens has been able to develop some 'circuit diagrams' of the process (laconic as they

are), in conjunction with his other remarks about technology in modernity might also explain why his schema has been more appealing to students of technology looking for a practical scheme than Foucault's discourse about the technologies of power (see p. 108).

From a theoretical and analytical perspective, adapting Giddens, we are provided with a powerful framework with which to consider different levels of personal and institutional structuration. Particular empirical qualities for particular modalities can then be matched and tested theoretically, and vice versa, even though, strictly speaking, we are dealing with abstractions of complex constructions of reality. In the context of Neighbourhood Houses (and potentially, other CBOs), the following table, derived from one in *The Constitution of Society* (Giddens 1984: 31) can incorporate the following themes, to incorporate the following factors for further theoretical investigation. These factors, categorised under the heading of institutional order, can be used to inform the development of a schema to represent community in practice, incorporating a community development perspective, as suggested by Hustedde and Ganowicz (see p. 72). This schema is also incorporated in a final elaboration of concepts to be considered against fieldwork findings (see p. 213ff.)

Table 4. Theoretical and Institutional Aspects of the Modalities of Structuration
(Giddens 1984: 31, adapted)

Structure	Theoretical Domain	Institutional order open for empirical investigation
Signification	Theory of coding	Varieties of community development and community education 'stocks of knowledge' communicated in informal/gender/needs friendly ways. Neighbourhood House as 'sites of enaction' at the intersection of public & private citizenship (see p. 69).
Domination	Theories of Power; positive, negative, generative Theories of authoritative and allocative resources (including ICTs)	'Technologies of care' (p. 87): Authoritative resources. Legitimated participation and empowerment; community development principles. Allocative resources: ICTs and other physical resources drawn upon for community education and development.
Legitimation	Theories of normative regulation	'Solidarity and agency' in community development (see p. 66); community-based culture; emphasis on collaboration, self-empowerment and participation as sanctioned forms of behaviour.

The duality and the sedimentation of recurrent social practices

A critical aspect of the dynamic of structuration is the fact that in contrast to the dualism inherent in a picture of order constructed around the opposition between agent/agency and structure as found in Marxist or structural functionalist analysis (see p. 119ff.), the duality is a vibrant conceptual 'twosome' in which 'the structural properties of social systems are both medium and outcome of the practices they recursively organize' (Giddens 1984: 280). To Giddens, action, based on memory traces, forms structures based on memory traces, and these structures or schemas, in turn, are channels for the transmission of action. The duality is an analytical category which does not exist as a distinct, real and tangible product of social exchange: instead , it only exists in what Giddens calls 'memory traces', instantiated in particular social or 'situated' (Suchman) environments within the boundaries of formal and informal social and institutional arrangements across time and space. Despite Giddens' emphasis on the artificial nature of the duality, it has great analytic utility.

In examining how the duality applies to an institutional setting we can propose that the memory traces that exist between human agents concerning an institution and its situated practices, or with which we need to deal (for example, a desire to utilise and enhance social capital, or to use a particular artifact of technology in a particular way) are at the same time contributory to but structured within the institutional principles (held by other individuals, or attributed to different resources) which of themselves dynamically relate to what individuals know, think and do, and onwards in a cycle, relating to what has been habitual, and in response to both foreseen and unforseen circumstances. As we shall see, researchers such as Orlikowski have adapted the principle of the duality to the dynamics of human-technology interaction. At the same time, though it is of less direct concern for the discussion of structuration, Information Continuum theorists apply the same perspective to their study of non-human agents in institutional settings: the memory traces (such as meta-data), applied to information objects (such as computer files), accompany an object on its changing information journey. Both the meta-data and the object can be transformed in this process, as the example of writing a thesis, discussed previously, illustrates (see p. 45).
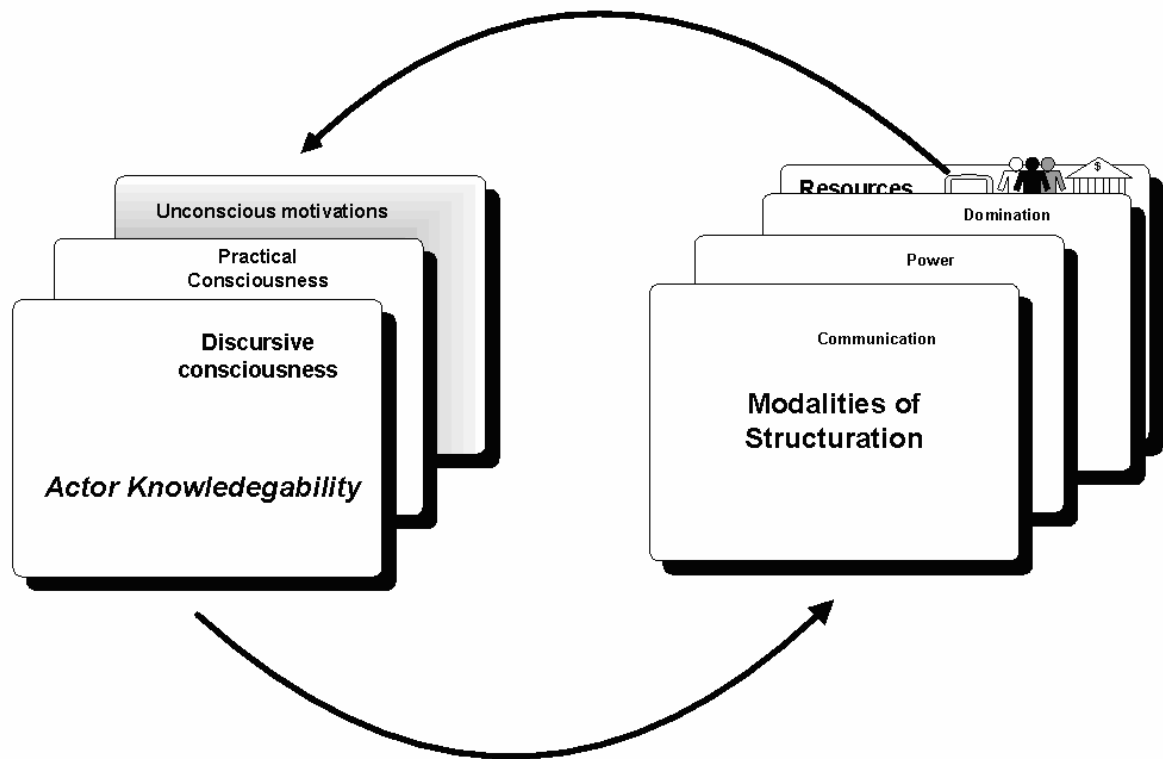
Figure 12. The Duality at an Individual Level

In the above diagram, actor knowledgeability (utilising the figure presented above, at p. 144), draws upon discursive and practical consciousness. Actors interact with culturally-present institutional rules and practices as developed over time, which Giddens recognises as 'structural principles' (Sewell's 'schemas'). Shading indicates the sedimentation or embeddedness of particular practices: the commitment to particular rules. 'Stacking' is also an indicator of the variability and density in the coverage of rules across time and space. When multiple actors meet, a 'circle of interactivity', emerges, as a network of reactions to the reproduction and instantiation of memory traces as actors go about their (most frequently) mundane activity. Different versions of structural principles constantly come into play. For example, the 'rules' in a bureaucracy about the use of ICTs in a community project can come into opposition to the 'rules' of a community-based organisation, leading to project failure. For the bureaucracy, a community project could be conceived of as something prescriptively signed off in a legal contract, but to the community-based

organisation, this could be interpreted as only the starting point for community development (echoing Rothman and Tropman's discussion of different conceptions of community development, see p. 67). Each *Weltschauung* is based upon particular interpretive schemes or principles for communicative transactions (for example, contrast how people talk informally, as to what is 'minuted' in meetings), rules about the use of resources (tight as opposed to 'community controlled'), and norms and sanctions (formal contracts as opposed to negotiation oriented).

Allocative and authoritative resources

Giddens' analysis attaches the differential uses of facilities as a key to the reproduction and reconstitution of structural principles and properties. Two key sets of resources are identified, which 'form the media of the expandable character of power in different kinds of society' (Giddens 1984: 28). While these can also be labelled as human and non-human resources (Sewell 1992:10), they are referred to as allocative and authoritative resources by Giddens, and are represented in the table below.

Table 5. Allocative and Authoritative Resources (Giddens 1984: 28, adapted)

Allocative Resources	Authoritative Resources
Material features of the environment (raw materials, material power sources)	Organisation of social time-space (temporal-spatial constitution of paths and regions)
Means of material production/reproduction (instruments of production, technology, including ICTs)	Production/reproduction of the body (organisations and relation of human beings in mutual association)
Produced goods (artifacts created by the interaction of the above)	Organisation of life chances (self-development and self-expression

Significantly, the reference to resources is not to the materiality of an object, or capacity to organise in a particular way, but rather, to the *capabilities or capacities of agents to command either allocative or authoritative resources* (Giddens 1979a: 100). More accurately, 'commandeered' resources can be regarded as 'resources-in-practice', akin to Orlikowski's concept of 'technologies-in-practice' (see p.193). More specifically,

inanimate material resources of themselves have no structural bearing *unless* they are instantiated in situations underlain by structural principles.

This idea can be confusing at first since it appears obvious that, for example, a particular technological artifact or system has a tangible material existence (the PC, the wires, the electronic network). However, if the PC is unused, or software remains shrink-wrapped in its box on the office floor), or an online portal designed, uploaded and not used, then, in a structurational sense, these are not utilised resources for their intended communities. They have no part in the transformative process. The same problem can be applied to human resources. An organisation may formally or 'technically' have staff, but if they are not doing their jobs or are not allocated responsibilities, then in a theoretical and practical sense, they are non-contributory. As Giddens puts it,

> "Some forms of allocative resources (e.g. land, raw materials etc.) might seem to have a real existence…. In the sense of having a 'time-space' presence this is obviously the case. But their 'materiality' does not affect the fact that such phenomena become resources…only when incorporated within processes of structuration. The transformational character of resources is logically equivalent to, as well as inherently bound up with the instantiation of…codes and normative sanctions. (Giddens 1984: 406)

This certainly goes some way to explain the potential confusion between valuing the technology ('the shiny new computer', or the 'community portal') as a 'solution' to particular organisational communication or knowledge goals and the reality that unless integrated into organisational culture, the effectiveness of ICTs can be very limited. This distinction disabuses the techno-enthusiastic assumption that possession of a resource is equivalent to technological and linked social achievements. The relationship of people to what ICTs are supposed to offer as a solution can be equivocal and ambivalent, to use Weick's language.

Embeddedness and systemness

Giddens has developed a conceptual vocabulary to discuss the attachment or 'stickiness' of structural principles in different institutional or social system settings as a sort of measurement for the embeddedness of different structural rules and principles which come

to constitute order. Giddens' concepts of embeddedness and systemness are reminiscent of Suchman's concept of 'situatedness' in particular territories (Suchman 1996), and it is also similar to Granovetter's concept of strong and weak ties in social networks, as well as his corresponding principle of embeddedness in economics, corresponding to degrees of trust and confidence in social relations resulting in particular behaviours (Granovetter 1973; Granovetter 1985).

The dimensionality offered by additionally conceptualising this sedimentation across the time-space dimension thus provides a reality check about 'what really counts' in institutional order. If neither systemness nor embeddedness can be achieved, then integration and permanence is unlikely. Embeddedness and systemness reflect the degrees of reciprocity or integration between actors in either co-presence or across time and space. These concepts provide a way of describing the specific intersection of signification, domination, and legitimation in organisations, and Giddens also speaks of the 'positioning' of actors in this intersection (Giddens 1984: 83ff).

Specifically, integration refers to the *degree* of interdependence of action, or 'systemness'. The same perspective applies to the discussion of conflict and contradiction: we are not speaking of absolutes, but degrees of 'systemness' on both micro and macro-social levels (Giddens 1979a: 76ff). Such 'systemness' can be gauged through both qualitative means (such as the interviews in this thesis), or given a stochastic quantum through quantitative research. Lewandowski, in his discussion of embeddedness in Bourdieu, defines the issue as follows:

> Embeddedness is both the implicit matrixes of empirical relations in which actors find themselves and the interpretive location from which actors make such implicit ensembles of relations explicit in their everyday practices. The thematization of various forms of embeddedness—linguistic, cultural, economic, political, historical, and so on—is how actors are involved in and appropriate the structured world in which they live. Put in more Bourdieuean terms, thematizing embeddedness is the way we, as context-sensitive bearers of structures, explicitly 'make sense' of and 'play' the social 'games' in which we find ourselves. (Lewandowski 2003: 57)

People's and institutions' lives are finite, yet they strive to 'hand on' particular sets of structural principles to others, yet how they do so is highly variable. ICTs offer new

communication possibilities (see above, p. 117). Contrast, for example situations of co-presence (or face-to-face shared knowledge) in 'traditional' societies or at least societies with very limited communication links, to a globalised information society. In the latter, everyday information and knowledge exchanges take place across time and space with strangers in an environment characterised by systems of calculated risk and trust in online banking, or systems like Ebay or Paypal. The open source movement and the development of the Creative Commons licences for free information and knowledge sharing (as well as Wikipedia, see p. 99) are further examples. These new systems represent a vast expansion of the cultural change in systems of trust in the sharing of information and knowledge that have occurred since Giddens first wrote about modernity (Giddens 1991; Giddens 1992). Yet online banking is not trusted by everyone despite equal amounts of technology being 'served' up to people. Wikipedia's accuracy and authority are challenged in contrast to the canonical status of other encylopedias.

The variety of cultures present and the sedimentation or embeddedness of particular sets of social rules in communities or organisations, serves to explain why identical technology can be understood and used in distinct ways in different organisations or different situations. In Barley's path-breaking study (detailed below p.184), the different sets of relationships between professional and technical staff in two hospitals reflect embedded and enacted structurated rules and principles— a form of interaction order (Goffman)— about practice with particular forms of technology, and these varied according to the different workplace environments (Goffman 1983; Barley 1986). The studies of Neighbourhood House workers in this thesis also present an opportunity to consider the embeddedness of relationships and use of technologies at various levels.

Time and space distanciation

Theorising time and space

> The organisation exists, but you can't see it. It is a network, not an office. (cited by Dutton (Dutton, Peltu et al. 1999: 236).

Writing at the beginning of the era of electronic networks, Giddens clearly perceived of ICTs as a more modern and extremely powerful form of other forms of communication

storage (the cuneiform tablet, the ledger) providing administrative 'containers' in the development of modern organisations across space and time. The frequent allusions to electronic communication, embedded within the theoretical frame of his later work, demonstrate Giddens' acuity in recognising the transformative dimensions of ICTs (Giddens 1991; Giddens 2000a).

Thus far, a minor theme in the thesis has been significance of time and space as having both theoretical and practical importance as conduits for social order (events take place in time and space). Giddens has particularly emphasised the importance of accounting for time and space in the creation and transmission of social and institutional order. He has built on the work of classical theorists including Durkheim, Marx and Simmel, as well as social theorists and geographers interested in the emergence of new social forms disembedded from traditional relationships and physical locations (Urry 1985; Urry 2000). In particular, Hagerstrand's work on time-geography, as a means of understanding and representing the movement of people through time and space in the course of everyday life has been of theoretical and practical interest to Giddens (Hagerstrand 1970; Hagerstrand 1975; Giddens 1984: 110ff.).

Indeed, space and time are placed front and centre within Giddens' theoretical scheme rather than as side dimensions, though his adaptation has, typically, not been without controversy, characterised as 'blunt and insufficiently integrated' with other theoretical frameworks (Urry 1991: 175). Notwithstanding this criticism, and taking into account the work of Urry, Gregory, Harvey and others, Giddens' work is useful for the non-specialist as a problematicising tool. Thus, Giddens introduces the problem as follows:

> Most forms of social theory have failed to take seriously enough not only the temporality of social conduct but also its spatial attributes…Neither time nor space have been incorporated into the centre of social theory; rather, they are ordinarily treated more as 'environments' in which social conduct is enacted…rather than as integral to its occurrence. (Giddens 1979a: 202).

Spaces and places are inhabited by people, who have the capacity to both create space and give meaning to that space (think of the aesthetic importance to many people of interior

furnishing)[36]. In addition, they can *move beyond* particular locations. The capacity for personal extensibility is important, since it helps give a fuller picture of the person at home and work. We can distinguish between the physical *body* and a constructed *person*, who, as Adams has suggested, is:

> any number of fluctuating, dendritic *extensions* which actively engage with social and natural phenomena, at varying distances. This dynamic entity depends on media—tools, instruments, economic exchanges, symbolic systems, and institutional-technological compounds such as the postal system—which he/she uses both deliberately and inadvertently. (Adams 1995: 269)

Adams has thus suggested that new ICTs offer profoundly new way of extending the agency of a physical person beyond place and locale. A physically disabled person, for example, can be an entirely 'whole' person online, without others knowing that there is any difference. The body accrues a new electronic persona online in electronic 'locales' adapting Giddens' point that locales provide uses of (electronic) space to alternate settings for social interactions (Giddens 1984: 119).

Time–geography

In *The Constitution of Society*, his most complete formulation of structuration theory, there are many references to ICTs, and the following quotation indicates Giddens' commitment to ICTs as part of modernity:

> [T]he most radical disjuncture of relevance in modern history (whose implications today are very far from being exhausted) is the separation of media of communication, by the development of electronic signalling, from the media of transportation, the latter having involved, by some means or other, the mobility of the human body. (Giddens 1984: 123)

From an even more directly Marxist perspective, control of the resources in particular time-space constructions or Hagerstrand's bundles and cylinders as discussed below (for the accumulation of capital), is the basis of power (Harvey 1989). New signalling media must be considered as a key resource, since they contain the fruits of derived labour power, as 'immaterial labour' (Dyer-Witherford 2002). As Marx put it, 'moments are the elements of

---

[36] See also p. 224, where one interviewee emphasised the for aesthetically-pleasing, rather than depressing Neighbourhood House environments

profit', referring to moments of alienation of the skills of labour (Marx 1867: Chapter 10, Section 2).

However, this important macro-perspective is not fine-grained enough to explain the structuring of everyday life through time and space. We are assisted by Hagerstrand's insights, developed to provide a picture of human movement through time and time and space. He studied and modelled what he called 'life-paths', the regular habits undertaken by people in moving from home to work, to home and elsewhere (Hagerstrand 1970). By constructing life paths as a series of intersections between particular 'bundles' and 'cylinders' of activity, he was able to notate the 'boundaries' for people's activities. One of his key representations of the bundling and movement across time and space process was the following figure (redrawn):
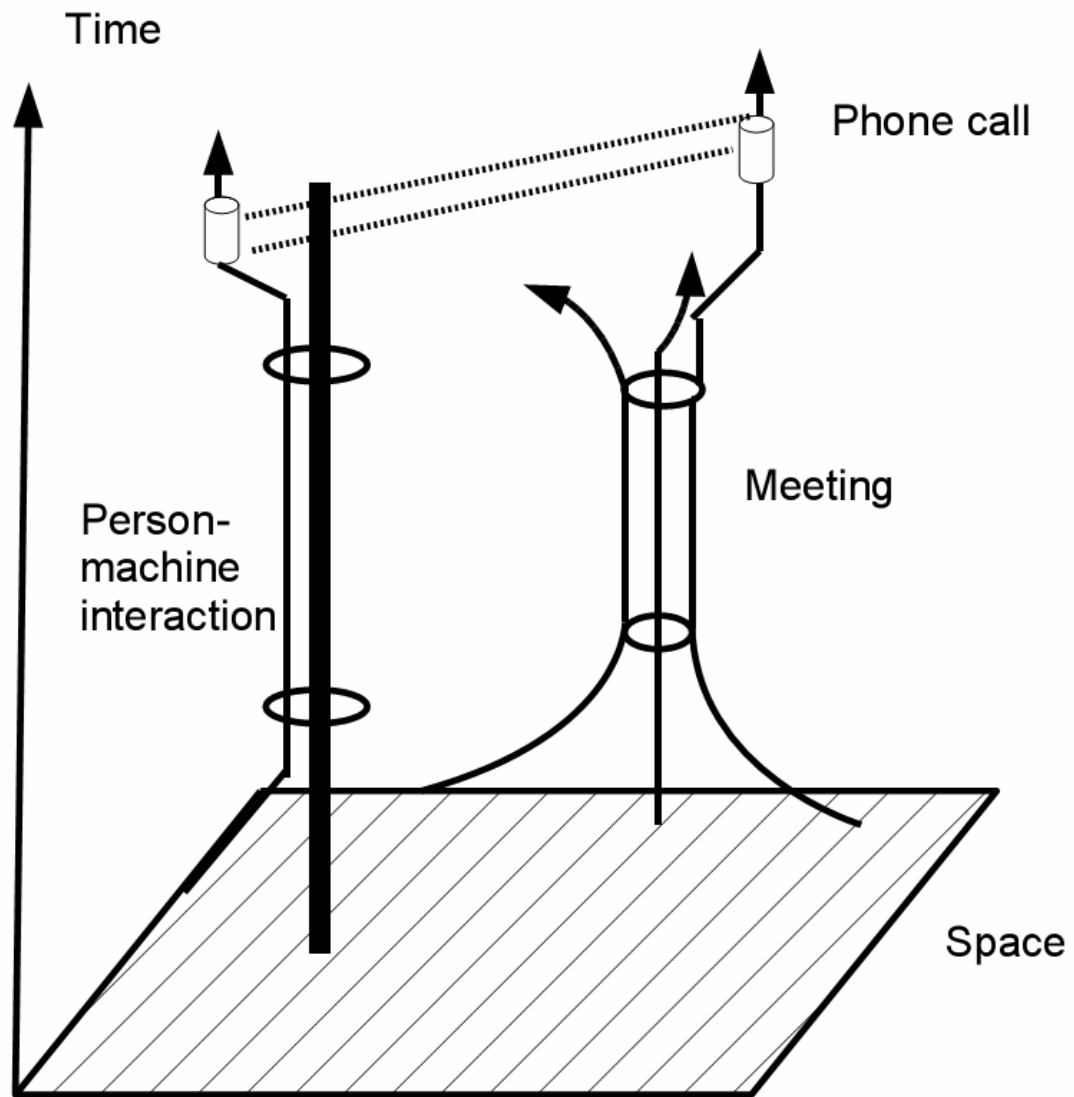
Figure 13. Time-Space Bundling (Hagerstrand 1970: 14, Figure 2)

Each vertical line represents a particular time-space path undertaken by a person/actor. The diagonal lines represent time-space traverses. People become 'bundled together' for particular activities. As can be seen, the person on the left is by and large 'bundled' to a particular machine for some form of action, though at a later point in time, engages in extended communications through the means of a telephone conversation with another person. To the right, the other person, moving down through his/her path, has also been engaged in 'bundled' or 'tubed' activity with other people in their own time-space paths, though they too have moved from, and onto different trajectories. From a structurational

162

point of view, the reproduction of the modalities of structuration (communication, power, and behavioural norms), draw upon the resources available to each encounter to instantiate that episode. For example, going to work involves communicating to a tram to stop (hand extended in the air at a tram stop—a recognised way of 'hailing a tram'), using money to legitimise a ride, and obeying other transport rules (such as no feet on seats). I do this everyday, but I do not have to do the same thing everyday. If I don't pay, I can attract the ire of the transport police. However, the subtleties of the day-to-day interaction are not consistent, and thus the endemic tension between what consumers think is legitimate behaviour and the 'authorities'. If a ticket machine fails to work, is one obliged to pay?

Hagerstrand's inclusion of the telephone in his diagram was insightful, as he was aware (in 1970) about the impact of communications technology on breaking down spatial and time boundaries. However, the physical constraints of the body still remain central in his model. The constraints which metaphorically, are a series of 'tubes' around the body are:

- Capability constraints (the physical body and tools at a person's command, and the series of 'rings' or 'tubes' which surround the body within which all physical operations and co-present activities must take place. This is what Hagerstrand also refers to as the 'daily prism'). This is a reference to the spatial dimensions and limitations of the physical aspect of existence. Thus, walking can only take us so far, we can only reach an arm's length from a desk, or travel so far in day by car or public transport. A person can be stuck next to a machine in a factory or a typewriter and therefore unable to participate in linking with people in other parts of a building.

- A modification of his representation can incorporate other technological capabilities and extension of movement and resultant communication. Adams' concept of 'extensibility' has already been noted (see p. 159). For example, visually impaired people can independently access information and engage in a wide range of interactive communication activities due to adaptive technology, when in the past they were totally dependent on Braille or a personal amanuensis to read material that could not be brailed. They can send emails as easily as the next person. Taking the

idea of extensibility further afield, a person with the latest in handheld devices can communicate through wireless networks on the move.

- Coupling constraints are what defines, for how long, where, and with whom, and by what means interaction with others takes place. The clock and the calendar, as he notes, 'are the supreme anti-disorder devices' (Hagerstrand 1970: 14). On the other hand, ICTs offer the opportunity to decouple such relationships, and Hagerstrand indicated the potential for the telephone to create new couplings, and indicated this in his diagram. The 'friction' of time-space distanciation, which formerly separated people and institutions, is reduced or manipulated (for example, emails can 'sit' in time and space until called upon). Janelle established that with transport innovations (railroad, car etc.), the significance of travel-time between people and places becomes reduced, and 'places approach each other in time-space', and the same principle can be certainly applied to the use of ICTs (Janelle 1969: 351) 351. Yet for a young mother with a baby in tow and no car, physical geography is a limiting factor—she can only walk so far to a Neighbourhood House or shops with children in a pram. But even if she can go on line at the Neighbourhood House, her 'free' time to engage in cyberspace is limited by how long her booking for child-care lasts.

- Finally, authority is recognised as the third constraint—which spaces, places and times are available to people by reason of power, and this corresponds to the use of power in the structurational framework. On the other hand, spaces, and time, also offer the opportunity for agency on the part of people: if we think of them as allocative resources of the sort outlined through structuration theory.

However, the 'project' of everyday life demands further explanation. People do not move from one spot to another like machines, or come out of nowhere. Our existence is historically-bound. Agency is critical. However, Hagerstrand's treatment of people's movement is something akin to plotting the movement of traffic, without really investigating why and how traffic is created though the agency of people riding on their bicycles or in their cars. Thus, Giddens argued that Hagerstrand had a 'naïve and defective' picture of the capacity for human agency, particularly because he seemed to stop at the

164

physical limitations of the body, rather than seeing that people have 'projects' within, and now beyond, particular time-space walls or tubes and bundles of activity in which they can draw upon resources to conduct their lives (Giddens 1984: 114).

Giddens also modified Hagerstrand by emphasising the recursiveness or '*seriality*' of most life activity. There is a general return loop at the end of each cycle or pathway in life-behaviour, that is, the regular patterns which are set in place through the actualisation of structural principles (familiar behaviour in the office, driving rules, and particular use of language in certain situations). Giddens has, as a consequence, attempted to emphasise the existence of 'reversible' time, the possibility that things are repeated in everyday conduct, though of course, there is the possibility of variation (Giddens 1984: 133-134 and particularly Figures 10a and 10b). A crude variation on the previous figure represents this recursiveness. Through the study of the reproduction or modification of seriality we therefore come to understand the structural principles and modalities of structuration applied to the study of institutions and organisations.
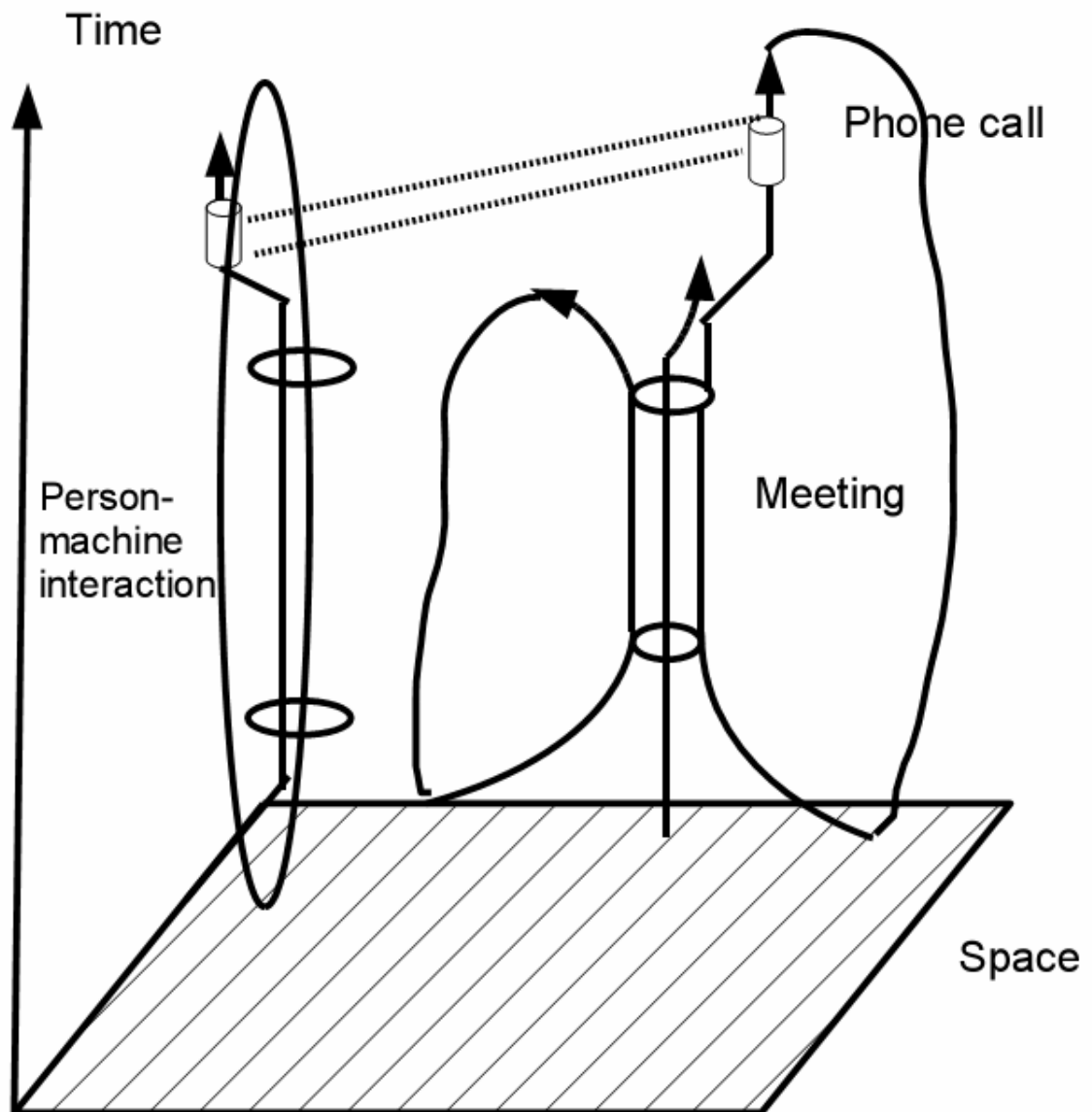
Figure 14. Time-Space Bundling, modified

Thus, activities in the context of time and space are *emergent*, *distributable*, and *contingent* upon constraints and opportunities, and new technologies greatly extend that 'spill' and in fact, re-invent the person in new, and what he characterises as 'extensible' ways. As Adams has suggested, people's locations in particular time/space intersections 'leak' into 'distant processes, both social and ecological' (Adams 1995: 270). The use or abuse of the mobile

phone is a good example of the leakage of work and social interaction in public space and time-zones, sometimes to the discomfort of other people (on a crowded tram for example).

Structurated social relations in time and space

However, Harvey commented that Hagerstrand does explain why 'certain social relations dominate others, or how meaning gets assigned to places, spaces, history and time' (Harvey 1989: 212). In addition, the social dimensions of causality are absent in Hagerstrand, though space and time are not just places for *becoming*, but they also help produce *being*. Further developments in critical geography provide an explanation of the production of *being* as a product of situatedness in time and space in addition to being as a product of particular economic, social, and cultural circumstances. For Harvey, the following proposition appears obvious:

> Each social formation constructs objective conceptions of space and time sufficient unto its own needs and purposes of material and social reproduction and organizes its material practices in accordance with those conceptions. (Harvey 1990: 419)

Harvey's statement deserves to be qualified, and some have found his work unoriginal, given Lefebvre's explorations many years earlier (Gottdeiner 1993). Harvey's Marxist orientation leads him to an emphasis on purported structural and apparently objective material processes in the construction of order. In contrast, a more fine-grained and multi-dimensional structurational or interpretive approach would suggest that more accurately, each social formation also includes *subjective* conceptions of space and time as well as strong material affordances.

This modification allows for the incorporation of powerful, pervasive, and symbolic meanings given to particular geographies and time-spaces that cannot be crudely dismissed as mere erroneous false consciousness (Urry 1991: 173). They are 'objectively' instantiated through discourse and material products. Examples include, for example, two-dimensional maps, which represent particular three-dimensional, time-located ideological frameworks (for example, the British Empire marked in red ink), that exclude others from 'inhabiting' that paper territory. The principle of 'terra nullius' in Australia, which denies indigenous inhabitants any property claim, reflects such principles, excluding other interpretations of

the meaning of time and space (Charlesworth 1984). Other examples include particular constructs of historical exclusivity over time and space (via religious and political covenants) in the Middle East and the Balkans, reflected symbolically in art and printed matter, including maps or postage stamps.

Another difficulty is the 'location of the time-space dimension as the medium and outcome of social existence within the duality (action-structure dynamics). This problem was noticed by Urry (1991). While Giddens clearly sees life and activity happening through and with time and space, time-space appear to sit outside the modalities of structuration (communication, power, norms/sanctions), when in fact for example, time is drawn upon as a resource that impacts on all three of these dimensions. Capitalism and industrialisation have divided time in new ways (hence the invention of accurate clocks in the eighteenth century), and treats time as a calculable commodity which can be wound down (the watch analogy), or sped up in the development of particular means and outputs of production to annihilate the tyranny of distance (Blainey 1968). Thus, in industrialised economies, we speak the language of time ('work time, play time', 'family time'), and use time as a resource —the introduction of the partitioning of time and time clocks in the workplace ('punch-in' clocks linked to remuneration, the development of speed and motion expertise, or the importance of speed in computing). On a social level, sanctions are associated with wasting time when time is a valuable commodity.

Despite its limitations, Hagerstrand's model presents a tremendous theoretical opportunity. Hagerstrand's bundles are a power container, mapping out the relationships and structures of particular activity (for example, a bundle could contain the time and space activities of people who work in a Neighbourhood House, and close ethnographic work could map the details of physical and electronic movement). Power is generated through activity, as actors draw upon particular resources to create particular things within and via the means of particular time/space locations (for example, computers, are used for teaching, and documents are both accessed and created synchronically and asynchronically at particular locations or 'virtually'), and the resources used to create these activity bundles (such as ICTs) can be stretched over time and space. The 'bundle' as an ICT can also shape the

outcome of such activity, for example, through particular software or formatting requirements.

Thus, ICTs allow us move blocks of 'timeless time' across geographic space in a way that was barely conceived of a few decades ago, for example, reflected through the capacity to work at home, through being able to store and move around blocks of information for allocated 'work' time, rather than being timetabled into a particular geographic spot dependent on co-present relationships with other workers (Urry 1999). Video-communication has the potential for new forms of co-presence which re-introduce non-verbal communication into communication across distance (as the pornography industry realised early on in its rapid adaptation to the World Wide Web). As a consequence of the complex relationships between person (Adams) and place, Giddens shows a preference at one point for abandoning the notion of 'place' for 'locale', an indicator of the context of particular chronic interactions between the body and place, extending from co-presence into virtual relationships (Giddens 1984: 118).

An attempt to represent this relationship figuratively is as follows, and explained below:
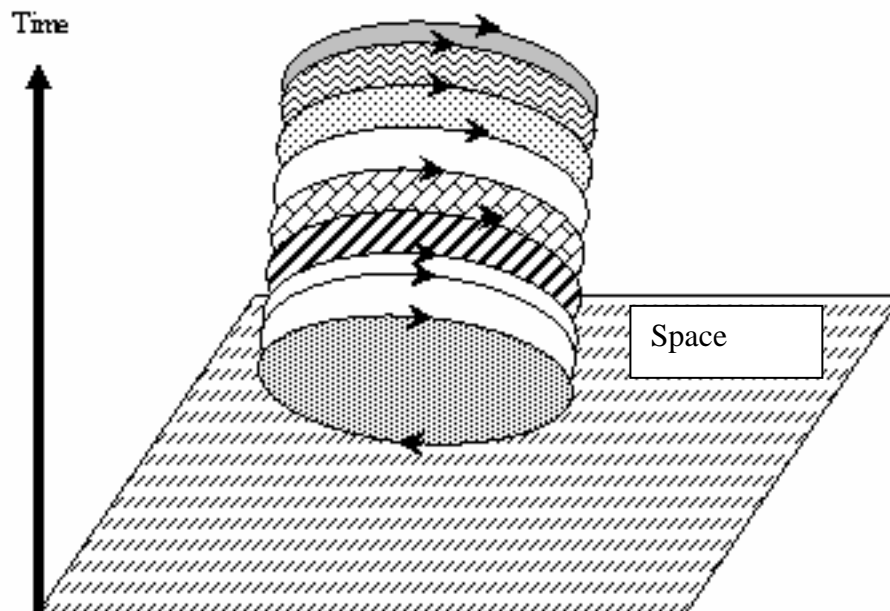
Figure 15. Structurated Principles in Time and Space

Consider the depiction of the duality in Figure 10 (see p. 153), but now, remodelled in a 3-D time-space continuum. The arrows and different hatching for each 'cut' represent the emergence of different bundles or containers of structural principles for communications, the facilitating opportunities of resources, or norms and sanctions, represented by the duality as they are located and produced within socially-constituted time and space arrangements. Arrows crudely indicate 'movement' of such processes, though arrows need not all go in the same direction (and thus could represent a failure, regression, or stoppage of particular processes).

The 'geometry' of social reproduction

Each 'cut' of the above diagram is constituted by the duality, the dialectic between agent and the modalities of structuration: patterns of communication, power (including the facility of physical and authoritative resources), and the normative dimension. Reflecting on the above figure again, social reproduction (of which institutional and organisational behaviour are a medium and outcome), occurs through a cut 'geometry' of space and time 'and also its lived practices and the symbolic meaning and signification of particular spaces and spacializations (sic)' (Massey 1992: 67), crossed with similar insights into the construction and production of time. Thus, while Massey argues that because space is a socially constituted moment and not 'flat', but embedded with the dynamism of social relations which occur within, through, and beyond it (ibid. 80), it can be argued that time is of the same essence. For example, as Harvey indicated (Harvey 1989: 216), the organisation of space in the contemporary (traditional) household says a lot about gender. The structuring of time in the contemporary family is linked to the break-up of 'family time' into much smaller components, linked into school, work, and use of new media such as the Internet. To complement the previous discussion, different social systems and relations produce different conceptions of time, as they do with space: cultural anthropology is replete with examples of different constructions of time and space. As an example, Edward Hall documented many decades ago future orientation of Americans in contrast to the continuing relevance of time and tradition in other countries. This difference is contributory to many cross-cultural misunderstandings with Americans, because of

continuing deference to particular traditions and institutionalised practices in other cultures (Hall 1959; Steward 1972).

Furthermore, the concept of space is differently understood and produced in different cultures: the encounter with 'personal space' is quite different between Westerners and Middle Easterners, as anyone who has lived in the Middle East quickly finds out. In the Middle East, people (of the same gender) stand much closer together, and male intimacy such as embracing and handholding is not necessarily a sexual signal. Hall's description of different placement of office furniture in different countries also reveals the duality of space—in being a medium and outcome of particular 'principles' which reveal different senses of hierarchy, communication, power, and use of resources (Hall 1969). The interviews with Neighbourhood House coordinators demonstrate the particular construction of space—as a special intimate place—in their local communities (see p. 222ff.).

Positioning and practice in time and space, cannot, therefore, be considered deterministically, given the intersection of particular cultural (in the broad and micro-sense) values. There is personal agency at work: *when, where* and *how* one works is caught up in the context of particular structural principles and their interaction with others. Schemas can come into contradiction, for example, different work patterns for multinationals working across time zones (Orlikowski and Yates 2002). Furthermore, within the one company, the pervasiveness of particular structural principles can lead to odd situations. Brockelhust has shown that there can be a variety of responses to the availability of teleworking and the management structures which accompany it. Some people want to remain in the office, and some work at home—dressed in office clothes (Brocklehurst 2001). Whether or not this practice is at all pervasive today demands investigation, but Brockelhurst's example shows how powerful normative behaviours can be. In another case, Adams' careful ethnographic study of one home-based worker also shows that in fact, despite the generally dystopic assessment of low-skilled work in the literature, his subject's life was full of agency, the home transformed by technology, with a capacity for *extensibility,* already suggested previously:

> The dwelling is no longer a solid container: inside and outside, private and public are increasingly brought together by television and other media. Physically the home may approach the ideal of

containment, but socially it is a permeable or 'leaky' capsule…constantly coming into contact with the outside world through such media as television, radio, newspapers, books, and computer networks. (Adams 1999: 361)

The same must also be said of any organisation engaged in boundary relationships: there are 'leaks', with the potential for differently patterned relationships and exchanges synchronically or asynchronically, through both co-present and extended media. The following figure is suggested by Adams' idea of extensibility, in conjunction with Hagerstrand's representation of time-geography, the remarks of his critics, and my own interpretation of his ideas. An explanation follows.
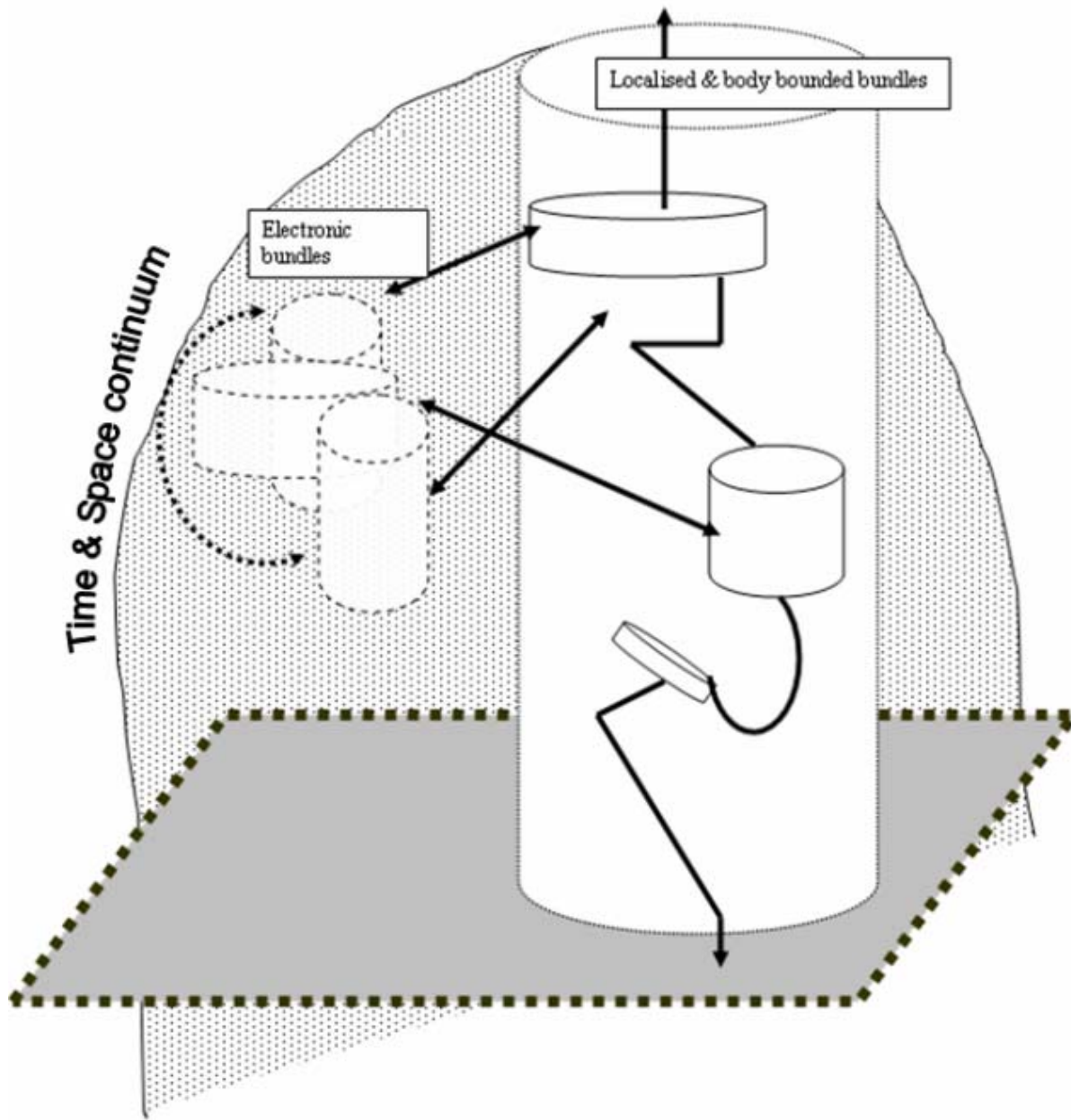
Figure 16. Electronic Extensibility

In this figure, the background 'landscape' represents the continua of time and space which can be constructed and reconstructed through different media (principally electronic means).

Starting on the right-hand-side, an individual's time-space path (which is recursive, hence the double-arrowed lines) is represented by the thick black line. A multiplication of the

black lines could represent the activities of other individuals (and for that matter, *collective* agency). A person moves in and out of particular bundles of time-space relationships, in which particular forms of communication engage with particular uses of power (electronic and data or knowledge resources), which also engage with particular moral or normative standards: for example, an 'always on' work ethic which puts pride of place upon 'customer service' (or on the other hand, an 'always on' set of punitive sanctions which leads to deteriorating quality of service in a customer call centre).

In the case of a Neighbourhood House, extensibility affects the capacity of many individuals to communicate in new ways, out of their neighbourhood, using ICTs, to engage in social capital and community-building activity. Agency around these modalities is specifically represented by the cylinders—some large, some small, some angled, as a mean of representing different types of situations or 'strips' of interaction (contrast a multinational corporation with an isolated community organisation). The left-side 'hatched' bundles present virtual communications and new forms of bundling that may occur (for example, through listservs, or databases). Organisations engage in a relationship between the left and right-hand sides of the diagram. Relationships can occur within a particular boundary, or on 'time-space edges' (Giddens 1984: 164), with other institutions and organisations, but the same principle could be applied to the study of an individual's communications and life activity.

The largest tube of all can be considered as a particular, macro-level social system within whose overall structural principles many individuals and institutions exist, drawing upon the resources available to that system. And of course, in a globalised (and electronic) world, this diagram can be reproduced any number of times in the time-space continuum for any number of players, but even in less globalised and localised environments (such as the Neighbourhood House), the extensions and relationships between people and technologies (and here we can include human processual technologies as well as artifacts), the same principle of representation and analysis can be applied.

Chapter conclusions

Notwithstanding certain theoretical controversies, structuration theory as developed by Giddens is a substantial basis on which to build a theory of social reproduction, including organisational reproduction.

Human actors are conceived of as knowledgeable agents, who work with, reproduce, and create information and knowledge. Social practice, including the life of organisations can be conceived of as the reproduction of structural principles or schemas and use of resources to achieve them, which intersect with different sets of structural principles, instantiated as institutions and organisations. Different instantiations of structural principles through the action of agents leads to the creation of the different characters and cultures in institutions (in the sense of institutions as discrete organisations). However, this reproduction is in no way a closed, functionalist loop. There is no universality; multiple schemas come into action, obviously, some are more dominant, and regression and conflict can occur. That is how the particular character of institutions is formed, based on the intersection of different structural principles and schemas.

However, the knowledge which underlies the emergence of structural principles should not be conceived of as an easily identifiable commodity. Much knowledge is tacit, and can be difficult to describe, quantify and incorporate into 'mechanical' operations (such as that which might be taken over by ICTs. Institutional practice can therefore be conceived of as not is not just dialogical, but '*polylogical'*— there are many actors, many situations, many different resources (including technologies). Additionally, the concepts of systemness and embeddedness offer a way of conceiving of depth of attachment to particular structural schemes—akin to weak and strong ties.

Agents draw upon resources in the creation and reproduction of human order, but in structuration theory, the focus is upon use of powers to utilise and transform, not just the possession of either an authoritative resource (i.e., the capacity to order or command), or allocative resources (such as property and artifactual technologies).

Time and space can also be considered as forms of resources which are both drawn upon and structured in particular relations of production. Time and space are the vehicle for the

175

reproduction of social practices (including organisational practice), but Giddens' discussion of them, using the perspective of geographers, can be supplemented through the consideration of other researchers. As Janelle suggested, modern life is characterised through the use of transport technologies leading to a reduction in the 'friction' of space and time (Janelle 1969). This principle can be easily extended to consider the 'extensibility' of modern forms of communication and institutional life (as well as personal activity) through a consideration of recent ICTs. Thus the capacities for space and time distanciation and information storage were recognised by Giddens as central to the life of modern organisations. Furthermore, space and place can carry great symbolism and meaning to actors and at the same time, 'space' and 'time', now have particular, electronically-formed extensibility and structure and can be regarded as 'leaky' containers into which other personal and institutional relationships permeate.

8   Structuration theory and forms of technology

On a number of occasions, Giddens has discussed the significance of contemporary ICTs and their role in the modern organisation (see p. 158). As has already been suggested, his remarks have been of interest to a number of theorists, whose work will be reviewed in some depth at this point. However, Giddens lacks a developed theory of agency for such technology, despite its recognised significance in contemporary society. Variations in structuration theory which account for the agency of technology have been addressed by writers such as Barley, Rose, and particularly Orlikowski. The incorporation of an agency theory of ICTs into structuration theory thus improves structuration's analytical usefulness. In addition, the insights of other bodies of research and theory (drawing upon time-geography, and feminist perspectives), offer more depth, theoretical latitude, and the prospect of practical application in organisational analysis.

The following discussion therefore provides a way of reconceptualising the relationship between human agency and the place and significance of ICTs such as those found in the workplace, as well as the 'technologies of care' found in community-based settings.

Giddens' position

For the student of ICT use in organisational settings, a key question to study is how people interpret, integrate and use different forms of ICT for the creation, storage, and distribution of information and knowledge across space and time in differently 'characterised' and 'chronically reproduced' systems. As Giddens put it:

> [A]n organization is a social system which is able to 'bracket time space' and which does so via the reflexive monitoring of system reproduction and the articulation of discursive 'history'. (Turner 1987: 153)

Furthermore, he argued that:

> [I]f the modern era is the era par excellence of organisations, it is by the same token an era of maximising of information, employed in that bracketing of time and space upon which time-space distanciation depends'. (Turner 1987: 149)

How an organisation brackets time and space is reflected through its integration of different system characteristics which provide, in Giddens' words, its 'systemness', its degrees of integration, sedimentation, and reciprocity with other actors and structural principles or 'schemas' (see above, p.156) (Giddens 1984: 74, 275). Giddens has emphasised the development of information storage capacity that enables the collation, analysis and retrieval of information and the use of such storage capacity and technology for both positive and negative surveillance effects. Information can be lifted out of one time, stored, and distributed at different speeds in another. While traditional means of storage such as paper files did a similar thing, computers offer much more temporal and spatial variety. What might take months of human input can be sorted and distributed globally at any time in a different format through a variety of technologies (phone, screen, paper, voice).

This type of structure is consequently the outcome and a vehicle, via ICTs for the transmission and creation of social practices and memories, a concept particularly developed by Orlikowski (Orlikowski 2000). The 'character' or particular features of a system—the network of shared and transmitted understandings about structure—can be regarded as a 'chronically reproduced', at least in part, via different implementations of ICTs, which also provide extensibility to the agency of people through the medium of the technology (also see above p. 159).

When instantiated, ICTs are consequently a vehicle for conveying institutional memory with agency that can be drawn upon by agents in both intentional (and conversely, unintended), ways. Such 'containers', as Giddens refers to them (an unintentional but prescient metaphor for the hard-drive), actually store authoritative resources—different forms of formal and informal memory—through such means as email records, databases and any number of storage applications. How these resources are structured is influenced by the institutional relations and cultural practices through design and use decisions, as well as the recursive influence they have on how these practices are carried out via the technology itself (Yates, Orlikowski et al. 1995; Yates and Orlikowski 2002). To reinforce the principle of electronic extensibility, many electronic memories are no longer stored on personal, or even institutional hard-drives through the use of off-site systems such as

Hotmail or Gmail, where the physical location (in fact, multiple, networked locations), is unknown except to backend technicians.

Deepening the understanding of Agency

Giddens regards ICTs as an inanimate resource, dependent on human agency for incorporation into the structuring of human institutional life (see p. 155). At the same time, as already suggested, Giddens is well aware of the key role that new technologies play in contemporary life, particularly as a means of providing communication and stored memory across disembedded institutions which exist across time and space (Turner 1987; Giddens 1990). But the *strength* of the *agency* of such technologies is not well-developed in his theoretical scheme.

Thus Rose makes the point that for Giddens, the 'evolution of structure and agency is located in the minds of knowledgeable human actors, not embodied in artifacts' (Rose 2000: 5). As a consequence, Giddens has an underdeveloped theory of how non-material agency contributes towards 'constituting the social'. This is a significant point, since from a research perspective, a more developed understanding of technological agency within structuration theory permits a greater degree of insight into the relationship between humans and technologies with strong or powerful agency—those that have both embodied or programmed, as well as emergent technical power—or as Orlikowski would put it, embodied and reconfigurable technologies (Orlikowski 1999).

This is not a new idea and in fact, the imputation of agency to modern technology is not a new concept, and was familiar to Marx himself:

> [I]t is the machine which possesses skill and strength in place of the worker, is itself the virtuoso, with a soul of its own in the mechanical laws acting through it; and it consumes coal, oil etc. (*matières instrumentales*), just as the worker consumes food, to keep up its perpetual motion. The worker's activity, reduced to a mere abstraction of activity, is determined and regulated on all sides by the movement of the machinery, and not the opposite. The science which compels the inanimate limbs of the machinery, by their construction, to act purposefully, as an automaton,

does not exist in the worker's consciousness, but rather acts upon him through the machine as an alien power, as the power of the machine itself. (Marx and Nicolaus 1973: 692)[37]

It was Alan Turing, of course, who took the notion of independent alien intelligence one step further, and who proposed that a computer (of the simple sort he developed for a thought experiment) could think. 'Thought' in this case meant that if the processes contained within the machine's mind (a 'discrete state machine'), exactly replicated that of a human being, then the two could not be distinguished for the purposes of considering processed outcomes (Turing 1950). The machine would no longer be alien, but 'real'. However, one continuing objection to his thesis is 'intentionality'. Devices, as Searle has claimed (Searle 1990), do not have sentient self-consciousness in the human sense. They follow their programs exactly, notwithstanding the speculations of science-fiction writers (Hodges 1999: 23). The reality of the hypostatisation of ICTs into a living and breathing being with independent intentionality can obviously never be taken seriously as an ontological truth, but as an analytical category for considering the *degrees of association of agency*, modern technology does present as having independent agency, because of the *perceived power and determination* it has over many things in our lives. A vivid example is my personal encounter with 'HAL'[38] of the film *2001* at a recent Stanley Kubrick exhibition. While 'he' only constituted a piece of aluminium and lens, fixed into a wall, the psychological association and affect was quite strong, to the extent that I walked around to the other side of the display wall, just to check if HAL's memory banks were there (and of course, they were not—but my mind kept thinking, what if…).

Drawing upon Actor Network Theory, a more sensitised understanding of human-machine interaction is provided. By emphasising the agency effect that non-animate objects have

---

[37] It should be noted in the context of the development of such ideas by Marx that comments and references to Charles Babbage, one of the inventors of modern computing are scattered throughout his works in the 1860s. In 1865, during the Chartist debates, Marx said, in line with his concern about the fetishization of commodities, 'All our invention and progress seem to result in endowing material forces with intellectual life, and in stultifying human life into a material force'. (Marx 1856). For an alternate, fictional view of what might have happened if Babbage's engine had come to fruition and Marx and others were alive to participate in a nineteenth century hi-tech world see *The Difference Engine* (Gibson and Sterling 1992). For a less than serious, but socially accurate speculation about animate machine agency in an academic institute, see *Tin Men* (Frayn 1965).

[38] The acronym for (**H**euristically programmed **AL**gorithmic computer)

active role in the constitution and reproduction of social order, much can be contributed towards understanding techno-human relationships (Latour 1994; Latour and Akrich 1994). A problematising perspective can be developed from the observation that informational existence today is particularly dependent upon complex, asymmetric and heterogeneous networks and relationships which involve personal computers, mobile phones, and other devices such as networked supermarket checkout terminals which link into not just banks, but databases about shopping preferences.

Agentic relationships in community-based organisations such as Neighbourhood Houses, which form part of broader networks of social support can be considered afresh from this perspective. Is the potentially 'strong agency' of a computer necessarily a good thing, even if it can offer informational efficiencies and accountabilities that result in a glowing report from a bureaucrat in a ministry? If a worker becomes desk bound and obsessed with the formatting of the perfect report, rather than sitting outside and supervising community development activity of a young offender's group, is the value added or lost from her work? To the bureaucrat, a messy handwritten and mailed report prepared on the run is inefficient and does not meet normative standards. On the other hand, a worker stuck in the office preparing perfect computer reports instead of being outside with her youth group is a social loss. The community development worker may feel pulled between her people-orientation (group work), but on the other hand, find aesthetic satisfaction in mastering 'dot points' in Microsoft Word for an impressionable bureaucrat. We can also say that in this case, her attachment to the machine—her dependency on it—has limited her local extensibility, but improved her virtual capacity for extension (see above, p. 159).

Rose and Treux use a combination of Actor Network Theory and structuration to elucidate different understandings of technology in organisations (Rose 2000: 12). To their way of thinking, a more useful exercise is to toy with the idea of limited technological agency within a cycle *of perceived autonomy* and *degrees of agency* in which there are *degrees of attribution* of agency to non-human objects such as ICTs.

A rich picture can therefore be considered by passing through a sort of Alice's Looking Glass to view the relationship between people and machines from the perspective of the

machine itself. When we study how people relate to each other though the assemblage of people and networks in the Neighbourhood Houses, human values permeate the technologies—the technologies of care and appropriation of artifactual technologies.

Thus, the findings in later chapters demonstrate that Neighbourhood House workers are strongly embedded and provided agency by a particular normative, strongly gendered framework around helping, care, and informal, community-based education. This leads them to value certain forms of communication in particular locales, as part of local networks of care and support. Their human technology, as a form of recursive and chronically-reproduced skill is a process of maintenance and creation on a regular basis of certain processes (i.e. community development and educational activity), which on occasion, draws upon material artifacts (such as paper, knitting needles, dictionaries, and computers). Technology for them is the regularised or chronic constitution of a range of knowledgeable practices *performed by humans and non-humans*, which in the everyday world constantly draw upon resources, human and non-human, in response to particular situations (see above, p. 87ff.). ICT technology (one of the technologies they use), is not just a community technology, but a *governance* technology as well (see p. 90ff.). The dependence on, and autonomy from the constraining aspects of artifactual technology as distinct from the creative forces associated with community computing is explored in later chapters.

How can this attributive process be better understood? Experiences of attribution can be contextualised and strengthened or grounded in a real-world epistemology in two ways. First, as 'experience near' at particular and synchronic points in time and space, and second, as 'experience distant', picking up on Geertz's trope, helping us to understand the process through a sociological or historical lens, of the sort suggested by Giddens (see p.137).

From the 'experience near' perspective, the 'virtual order' that is created in the experience near or close-up practice of person-machine action (the 'black box'), can seem very real, intentional and autonomous (Giddens 1984: 17), providing for a perception of strong, up-close of agency when, for example, the computer 'refuses' an 'order' to print or it freezes

up. One of the interviewees for this thesis was particularly articulate in describing her frustration with ICTs (see p. 236ff.). She said, 'it's like everything else, it's like nothing else'. She also dismissed the computer as 'just another tool', but in fact, it's like nothing else in that it's such a *powerful and strongly attributive* tool. She has been frustrated by the agency of her computer: it might be that while it can offer a hundred different fonts and infinite colour variations, the computer's powerful agency undermines her artistic capacity and her control over her students. Instead of her brain and hands and the students' brains and hands directly interacting with shared, physical objects, they are displaced or mediated by processes and images on the screen put into place by the computer algorithm and hardware.

The lens of 'experience distant', utilising the agency of the researcher's skills, tells us that in fact, the machinery is really not doing the pushing. We can see that ultimately, the community worker's frustration is bound into a range of intersecting relationships and structured embodiments of technologies, including the particular design decisions and assumptions built into her software by thousands of engineers and others in Redmond, Washington (where Microsoft is based), acculturated into Microsoft's interpretive schemes (including technical ontologies), and normative frames for working upon, and with technological artifacts. The community worker's different interpretative and normative assumptions about aesthetic values and teaching are based upon her life in certain cultural and social structures which value particular communicative styles, processes, and actions with the things of art. These in turn intersect with the ICTs that are used, and the student's own personal orientations, expectations and personalities. Furthermore, the learning process is affected by her conflicted feelings and opinions about how to draw upon the particular resource of the computer in the creative learning and teaching process. While engagement in the experience near/distant perspective is a challenge to rationalisation and simplifications that may be desired from a design or management perspective, they provide valuable insight into the actual, ground level cultures that help to determine attitudes and practices with and towards ICTs.

To take another example, when we consider the administrative and governance component of the management of community work, a spreadsheet and reporting scheme may require a

particular form of data entry and categorisation, and at a desktop worker level, this is perceived of as strong controlling agency. Stepping back, or applying an experience distant framework, we see that the attribution of control by machine (by and large understood as an extension of a bureaucrat) by the worker, can be reanalysed as part of a controlling network effect of wider patterns of governance though particular conceptual schemas (Foucault, Nikolaus Rose), that can be characterised as the 'contingent result of a multiplicity of translations of different programs and interests' (Vandenberghe 1999: 824). This leads to leading to particular sets of administratively and electronically-enacted or shaped discourses and actions, themselves embedded in particular time-space structures and relationships, incorporating the insights of Harvey's investigations in time-geography (see p. 167).

Other structurated theories of technology

Barley: Behavioural Grammars and Scripts

Barley's adaptation of structuration theory is an attempt to explain, and represent, the divergent uses of similar technologies (in his case, CT scanners), in different institutional settings (hospitals). Giddens' notion of a duality had particular appeal to Barley because it shifted attention to *processes* in the creation of institutional order: the divergent use of technology could not be explained by the idea of static structures (rules, understandings, roles, behaviours). Something had to be giving way, or changing, in the way the people in different settings interpreted the same technology. Technologies were therefore regarded as a type of 'trigger':

> Technologies are better viewed as occasions that trigger social dynamics which in turn, modify or maintain that organization's contours. Since these dynamics are likely to be multifaceted, to vary with time, and to reflect the situational context, it is quite likely that identical technologies used in similar contexts can occasion different structures in an orderly fashion (Barley 1986: 81)

Barley developed the concept of 'scripts' as a trope for standardised or recursive patterns of interaction order, or a behavioural grammar, and thus, 'what we traditionally call formal organization can be viewed as the grammar of a set of scripts' (Barley 1986: 84). Through careful analysis of speech and observed activity, he was able to establish the different

184

scripts in 'interactional episodes' and their changes, and argued for the study of 'behavioural grammars' in the study of institutional order (Goffman 1983; Barley 1986). As part of a wider discussion about institutional theory, Barley also proposed that institutional behaviour can be regarded as 'abstract algebras of relations among members of social sets. From this perspective, institutions are to social action as grammars are to speech' (Barley and Tolbert 1997: 96).
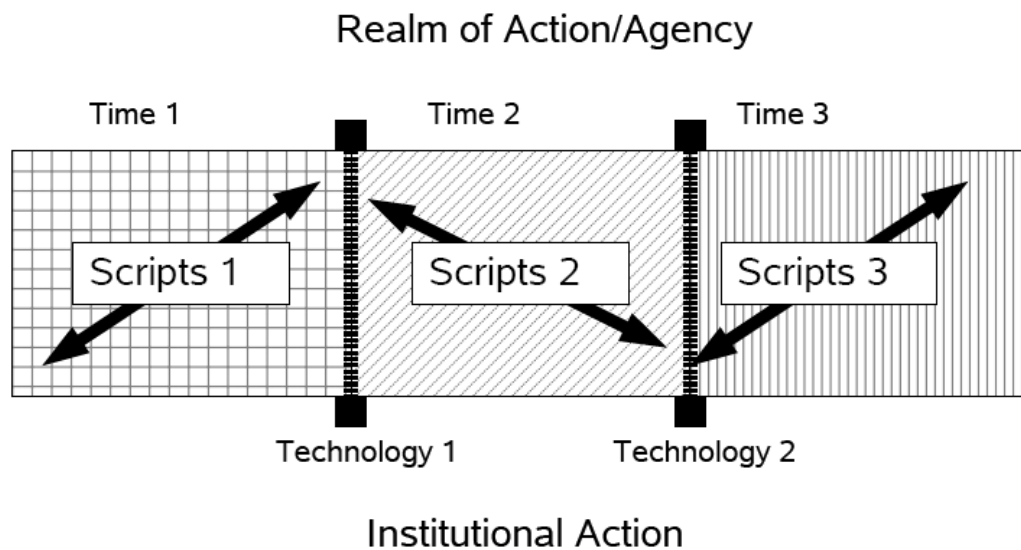
Figure 17. Scripts and Technology (Barley 1986; Orlikowski 1992)

The relationship between agency (called by Barley the 'realm of action'), and the emergence of institutional structures can be represented as above, derived from Barley and Orlikowski. Agency and institution are always in a dynamic relationship. Over time, a particular situation, or 'script' of behaviours and cultures emerges. The trigger is the introduction of a new technology (represented as a vertical line), which sets in place new sets of scripts (arbitrarily represented as diagonal lines going in different directions). Technologies 1 and 2 (represented by the vertical lines), represent points at which different 'scripts' are set in place. While the scripts are represented diagonally, the actual course of a relationship does not need to be a lineal one-dimensional process. Different

185

institutions/agency relationships will have 'scripts' which move in different space-time directions because of variant cultural dynamics between agents.

In Barley's particular set of studies, different cultures of communication (formality-informality), power (the changing conduct of technical operations between professional radiologist and 'lowly' technician), sanctions and norms (acceptable behaviour) in different hospitals resulted in dissimilar relationships around use of the machine and its results. Actor's behaviours were reproduced in their interaction with the ongoing presence of over-arching structural principles that governed interpersonal attitudes and behaviours (manifested as institutional order), with the particular technology (the scanner) acting as a trigger or springboard for the elaboration of particular structural principles.

Two observations can be made of the relevance of Barley's work. First, his interest in longitudinal research about the introduction of particular technologies is difficult to apply in community practice where resources and support for long-terms projects are scarce. There are few opportunities for viewing the introduction of new technologies, unless the researcher is in the position of being able to be in the right place at the right time and funding and other resources, including authority to come in an out of an organisation over time, must be available (Barley and Tolbert 1997: 103). Furthermore, while Barley documented changes in response to technology across workplace time, significantly, there is little, if anything, in his work to address the broader concerns of structuration about the positioning of particular technologies within the political, social, and economic relations. The problem with this approach, as with many theories of management, is that does not take into account the impact of inequitable relationships of production upon workplace relationships and structures. In this particular case, the political economy of medicine could be used as another sensitising analytical and contextualising dimension (Navarro 1977). For example, it might well be that the two hospitals chosen for his study of CT scanners are located in physical communities that reflect particular socio-political opportunities and constraints in the practice of medicine, including the hospitals' relative wealth or poverty, or, for example, the highly-segregated neighbourhoods which continue to exist in Boston. However, such 'non-medical' or 'non-technical' issues are not accounted for in his study (perhaps an example of disciplinary exclusion, see p. 105). Nor does Barley speak of

gender, despite the significance of gender in the practice of medicine and ancillary medically services[39]. Despite these limitations, his research was incorporated by Orlikowski (see below), into a more elaborate picture of the structuration of technology.

De Sanctis and Poole: Adaptive Structuration Theory

The work of De Sanctis and Poole offers another technology-focussed version of structuration theory (De Sanctis and Poole 1994). Accepting that new and innovative (what they term as 'adaptive') technologies have a major role to play in information processes in organisations, they discussed the relevance of different sorts of analytical frames used in understanding the effects of technology, and the effects that these have on understanding technology.

A number of analytical 'schools' were identified as particularly relevant to their research. They first identified the 'decision-making school' with an essentially determinist and 'hard line' orientation towards the analysis of technology in organisations, with a static, or at least underdeveloped capacity to deal with variability of human behaviour. The key interest by users of this viewpoint is the solution of determined processes, with a 'task-technology' fit, reflected in an engineering approach to technology. Of course, while this approach might be appropriate for the simplest sorts of operations, in complex, indeterminate environments, it is fraught with difficulty and it offers little opportunity for studying the production of, or variability in human-machine interactions. Second, the 'institutional school' looks to the symbolic and interactive aspects of organisation and particularly ideographic studies and understandings. Discourse, with all the variability it entails as a 'system' between human actors, is accepted as a critical factor in the development of social constructions of technology. Technology, following Orlikowski, is viewed as interpretively flexible (1994: 124). However, De Sanctis and Poole qualify this insight by observing that the re-centring of discourse and human processes found in such an orientation consequently

---

[39] Reading between the lines of his studies, and based on my experience of being hospitalised in both a private and public hospital in Massachusetts, the contextual environments, including the funding, professional and racial differences between and inner-city and suburban hospitals are profound and as relevant as the identification of particular tropes in the relationship between doctors and technicians.

has the potential, to underplay the 'role' of material technology in organisational change. Can a balance be achieved to take into account both dimensions?

As a solution to this problem, they consequentially argued for an even more sophisticated approach to account for *both* social practices *and* the strong agency of adaptive technology. This problem is solved through what they call a 'social technology school' (also familiar from computer supported cooperative work (CSCW) studies, which accepts the emergent and non-positivist relationship between artifactual technology and particular human qualities in organisations. Their particular variation is an adaptation of structuration theory that incorporates the mutual processes of technical technological influence and human agency, thus providing insight to Barley's conundrum of 'structuring's (sic) central paradox: identical technologies can occasion similar dynamics and yet lead to different structural outcomes' (Barley 1986: 105).

Because of their recognition of the dynamic nature of structuration, that variability is contingent upon the reproduction of structural principles in reaction to technological artifacts, they developed a general proposition: 'advanced information technologies bring social structures which enable and constrain interaction to the workplace' (De Sanctis and Poole 1994: 125).

As a case study for testing out their proposition, they looked at the use of the Group Decision Support System (GDSS), a computer system involving 'computing, communication, and decision-support capabilities to aid in group idea generation, planning, problem-solving, and choice making' (De Sanctis and Poole 1994: 122). However, the GDSS case study is limited in its utility and generalisability, because it focuses on assessing the use of particular technical artifacts in the process, rather than endeavouring to understanding the *placement* or 'situatedness' of the technology within the context of a certain set of institutional 'arrangements' about people and technology processes. Thus their concern with identifying the 'spirit' of designers' and users' intentions is biased in favour of pivotal technological (i.e. artifactual systems), rather than organisational analysis, development or improvement. As a consequence, while their insights are particularly useful from an information or management systems perspective in their application to problem-

solving about particular technical issues and systems, their application is less relevant to the discovery of overall technologies (human-processual, and artifactual) that provide enlightenment about the production of order in organisations.

Jeremy Rose: Structuration and Actor Network Theory

Jeremy Rose, in a range of papers written with different authors as well as in his PhD, has adapted structuration theory to the study of various theories in Information Systems. Three aspects of his work are particularly relevant:

The first insight relates to issues around the representation of the process of structuration, since it highlights the need for innovative ways of modelling the dynamism and interconnectedness or heterogeneous and polymorphic or polylogical, rather than isomorphic processes (see p. 27 and p. 148). The second insight offers a critique of the relatively thin or underdeveloped understanding of 'social factors' within Information Systems and Soft Systems Methodology as also observed by Walsham, Lamb and Kling (Walsham 1995b; Lamb and Kling 2003) from a systems approach, or the surprise in meeting reality for designers from the perspective of ethnographers (Salvador and Sherry 2004). As an alternative, Rose offers structuration as an enriching and adaptable perspective to the study of human-technology interaction (Rose 1998; Rose 1999a; Rose and Hackney 1999; Rose 2000). Finally, his work on the incorporation of the insights of Actor Network Theory with Giddens' structuration theory provides significant insights. The first two aspects are discussed below, while his impressive contribution to Actor Network Theory has been addressed as part of a general discussion of Actor Network Theory (see p.179).

To Rose, Information Systems is oriented to discourse located in positivist technical research traditions which limit the discipline's understanding of the real world. Reality is re-constituted through modelling and diagrammatic representations of tight 'systems', but its underlying assumptions concerning its generalised model for human-machine relationships is not generally explored. Notwithstanding this limitation, within its accepted framework, Information Systems works toward the resolution of what are believed to be generalisable and objective software problems, where the dynamics of its 'system' are

contained within the 'world' that can be contained within outcomes produced via the dynamics of a text editor (Colomb and Weber 1998; Johnston and Milton 2002). 'Problems' are understood as technical, rather than social in nature. If there are issues for human users, these are modelled through simple assumptions about human nature, summarised as 'user requirements' or 'user needs' and these models are used as paradigms in design and testing. Information Systems thus 'brackets' fine-grained understandings of human behaviour that acknowledge the complex realities of the workplace which determine how resources (such as ICTs) are developed and used (Rose 2000). Its world of non-technical system discourse (and representation) is minimal and thereby exclusionary of practice outside its disciplinary frame (see p. 105). The challenge to such thinking is contained in the paper about Maori views of technology, contained in Appendix B of this thesis, where an attempt is made to outline the challenge of relating accepted 'technical' ways of thinking to an assertive and renascent Indigenous community that is articulating its own view of how ethical technological development is conducted with them, as well as a particular view of technology as a system of community-artifact interaction (Stillman and Craig 2006).

As a consequence, while the bracketing of human needs (and agency) is laudable from a technical/artifactual problem-solving point of view, this presents an imbalanced and inadequate picture of multileveled and multi-variant machine-people interaction in its discourse and technical outcomes. Even Soft Systems Methodology (SSM), as a sub-discipline of Information Systems, with its emphasis on 'rich pictures', while seeking to problematicise discourse and realities, still has an underdeveloped construction of human needs, responses, and processes.

Rose finds a solution through combining elements of Soft Systems Methodology with elements of structuration theory. This, in turn, provides a framework to analyse and operationalise institutional change around technological issues. However, a limitation on Rose's work is that he did not sufficiently integrate Orlikowski's later and more mature work in his own writing. Orlikowski offered an even deeper framework and methodology for using structuration as a form of analysis and representation of different characterisations of technology in use. Thus, while Rose's pictorial representations illuminate *essential*

aspects of the dynamics of structuration, they, and the theory which underlies them, do not provide a way of easily tracking or modelling the multiple versions of the interpretation of technology which occur with different actors, across the key modalities of communication, facilities, and norms. This is something at which Orlikowski, as will be demonstrated, has had much more success.

The process of structuration: 'Social Practice'

Rose and Scheepers suggested that a simple model of structuration could be represented as a process of 'social practice', in which structures interact with the constant process of social reification and modification of the different dimensions of structuration.

Social Practice

Structure   **Interaction**
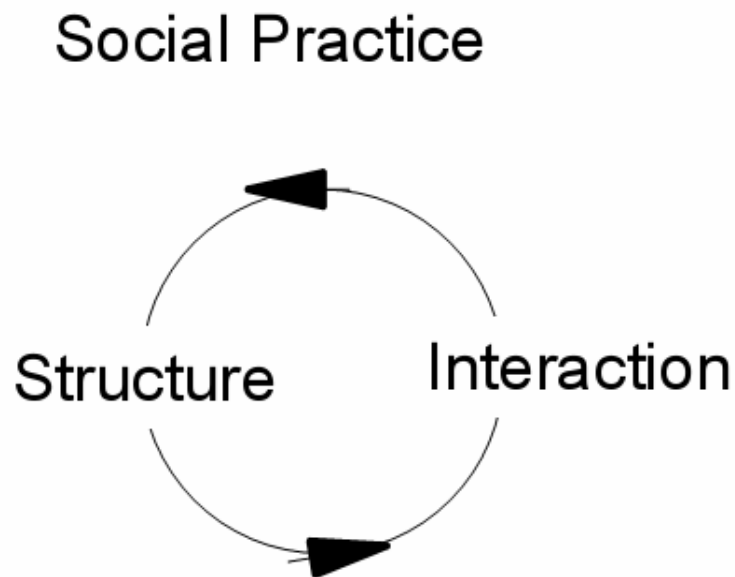
Figure 18. A Simple Model of Structuration (Rose and Scheepers 2001: 11)

However, the previous figure inadequately represents the process of change or variation across time and space, which led them to suggest the following diagram:
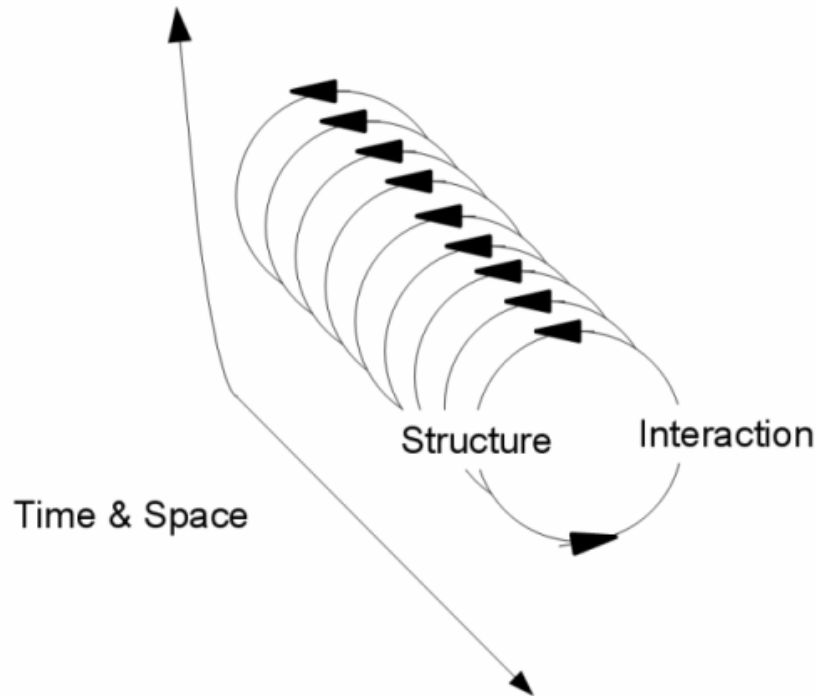
Figure 19. Structuration across Time and Space (Rose and Scheepers 2001)

This figure powerfully represents the recursive, yet malleable nature of the structuration process. The principle of multiple iterations (in Rose's case, descending circles) has been incorporated into my own diagrams, in order to avoid isomorphic overtones.

However, a difficulty with Rose's pictorial modelling is that his analytical application of them has not been so clear. While the narrative of the problems in the technical break up of a British rail company in his PhD was quite detailed, and Rose displayed acuity with respect to the social-technical conflicts between different stakeholders, his visual representations were not so successful (Rose 2000). Rather than developing a multilayered or multi-faceted diagram which could be read as a system narrative to represent a chain of actors' different activities in an episode (for example, widely differing uses of similar or dissimilar technology in different institutional settings), his representation collapsed into a

re-presentation of the modalities of structuration without an accompanying dynamism. If the purposes of visual representation is to provide a form of focussing tool for narrative process, outside of particular instances his modelling is too specific for generalisation. A more successful representation of the dynamics of structuration has been developed by Orlikowski, and her representations, as well as theoretical developments, are discussed in more detail below.

Orlikowksi: Technologies in practice

Utilisation potential of Orlikowski

Since at least the early 1990s, Wanda Orlikowski, in many individual and co-authored articles and research papers, has made a significant contribution to the application of structuration to the study of technology in corporate environments. The depth of her work has provided a rich conceptual library and adaptable analytical framework and vocabulary, grounded in structuration theory. A roughly diachronic approach to concepts that have emerged from her work is a useful way of representing her development, as well as overlaps with the work of other relevant scholars. The most relevant of them are discussed here. In the case of time (Orlikowski and Yates 1999; Orlikowski and Yates 2002), her perspectives have been covered by researchers including Adams, Gregory, and Urry, discussed previously (see p.158ff.).

The thoroughness and originality of her research review, analysis and field-work cannot be overestimated, even though it is focussed upon larger scale corporate and multinational organisations, rather than the community location and orientation of Neighbourhood Houses or other, smaller CBOs. Significantly, she has suggested suitability of her methods to non-corporate environments, as well as further study of the 'the meanings and emotional attachments that users develop for the technologies they use' (Orlikowski 2000: 423). Given the highly personalised environment in which neighbourhood and community work is conducted, these comments are of great relevance to the comparative analysis of the interviews which were conducted for this thesis. Her framework, in fact, is used to form an outline of the modalities of structuration that could be applied to community-based organisations. Another way of understanding the implications of Orlikowski's capacity to

engage with different varieties of technological structuration is to see it creating multiple sets of a dualistic relationship S(structure) $\longleftrightarrow$ A(gency) in the process of reproduction and modification of order. Thus, we can speak different configurations of people and machinery, or agents representing $S_1 \longleftrightarrow A_1$ to $S_X \longleftrightarrow A_X$. Multiple agents or sets of relationships can be studied and compared for the different instantiations of structuration which occur.

Furthermore, of great significance to the application of the structuration model to fieldwork or management practice is the range of pictorial representations developed by Orlikowski. Through their modelling of analytical schemes, they provide a visual prompt, modelling the different types of structurated relationships which can occur in institutional culture. While they are not intentioned as isomorphic representations, they are an important tool for the modelling of practical situations. They serve as a visual and conceptual starting point for more detailed analysis of real world situations, in line with the theoretical utility of such representations as starting points for further elaboration in research or practice. Thus, Orlikowski's visual model has been adapted to develop new representations of community-based organisations and their structuration of technology, as a means of forming a conceptual frame akin to one of Hagerstand's 'time space bundles' (see p. 161), in which to consider the empirical questions and findings in later chapters of the thesis. At the same time, it should be emphasised that such models and frameworks *of themselves*, do not necessarily represent real structures, in line with Giddens' own argument: they are highly useful analytical frames and abstractions which should not be applied deterministically, but are a starting point. As established in the prior discussion on modelling (see p. 27), empirical comparison and testing which occurs reflects the fitting of complex data to abstractions.

Genres of communication

In a number of publications, Orlikowski, with Yates, investigated patterns of routine communication in organisations and how they varied over time in response to organisational and technological change (Yates and Orlikowski 1992; Orlikowski and Yates 1994; Yates and Orlikowski 2002). In the earlier paper, a distinct structurational

framework was not proposed, yet the implications of the theorising were clear, particularly around the relationship between human agency and the material agency.

Genres were defined as distinct forms of communicative action (written, oral, and interpersonal), that act as a 'template' for typical communicative processes in an organisation. Through their reproduction, genres become social institutions (in the structurational sense), 'that are produced, reproduced, or modified when human agents draw upon general rules to engage in organizational communication. As social institutions, genres both shape and are shaped by communicative action' (Yates and Orlikowski 1992: 305). Their discussion of the social placement of genres is akin to Kaufer and Carley's theory of 'communicative transactions' wherein information objects are placed within a moving cycle of motivation, action and adaptation to different circumstances, particularly at the micro-level of organisations in what they call socio-cultural landscapes (Kaufer and Carley 1993: 143ff).

Of particular interest to Orlikowski and Yates has been the emergence of new genres in organisations, where, for example, the move from more formalised letter writing and accompanying office communication chains to more open and distributed electronic communications has affected the character of and process of communication. The technology—both artifactual and processual—changes. Older genre rules are represented for example, by formally and informally taught habits and gendered disciplines (Foucault) including communication styles, rules for the 'storage' of routines in office manuals, special stationery for different purposes, form letters and 'forms of address' (such as how to address a Dowager Lady), or as an example of the constructed culture of a 'new technology', procedures for using Dictaphone cylinders[40]. All these genres reflect particular

---

[40] See Debrett's online: http://www.debretts.co.uk/etiquette/correct_forms_of_address.html. Forms of address, however still feature in guides to cross-cultural communication, and are important in some cultures. See for example, the French and English correspondence guides in *The Oxford Hachette French Dictionary* (1994). The early Dictaphone is an extraordinary example of an 'inscribed' genre discipline. Office workers were instructed how to use the technology through a special voice recording, which speaks (in a male voice), of the importance about how to know to use the 'brain' contained in the technology. An audio example is made available at http://www.gutenberg.org/etext/10238 (Accessed: 30 August, 2005). Secretarial schools also represented a highly gendered and particularly disciplined form of training for a particular communicative structure, though at the same time, from the early part of the 20th century onward.

normative and communicative modalities and disciplines in administration at particular historical points in time.

The usefulness of the genre concept in providing a framework for analysing the establishment and modification of particular technologies is obvious, particularly, when institutional principles of communication (providing particular communication pattern reflecting preferences in the communication of sanctioned processes) are going through a process of change because of the adoption of new forms of technology. Using an adaptation of one of Barley's diagrams (see above, p. 185), Orlikowski made an attempt to represent the alteration of genres over time. My simplified adaptation is as follows:

Genres of organisational communication

| Time 1 | Time 2 | Time 3 |

Genre Rules 1   Genre Rules 2   Genre Rules 3

Genre 1   Genre 2   Genre 3

Realm of communicative action in organisations
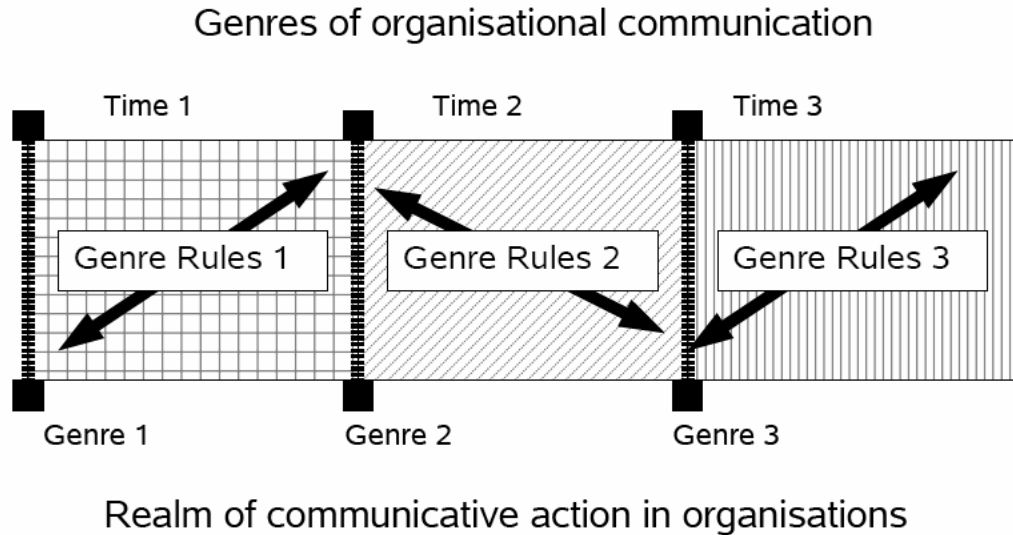
Figure 20. Genre Alternation Across Time (Yates and Orlikowski 1992: 307)

The explanation of the above figure is as follows. Individuals as agents have the opportunity and capacity to maintain, elaborate and modify communicative practices in the context (the 'realm') of communicative action in organisations, even though genres may continue to constrain some behaviour and practices. The double-headed diagonal represents the recursive relationship that occurs through genre and institution by means of human agency

Genre Rules 1 could be represented by the use of different headed stationeries for different forms of typed communication. Thus, to use the example of one small, community–based organisation in which I worked in the early 1990s, there were a variety of differently-coloured letterheads: one for official letters, one for newsletters, different stationery for projects, one for memos. It was also a requirement to file duplicate copies of all correspondence in a huge set of official filing cabinets, in order to preserve institutional memory, even through there were personal computers (not networked). The system (the paper technology) was complex and easy to make mistakes with (and ignored by less-disciplined and less-obedient members of staff, such as myself, for all but the most important correspondence). However, the introduction of new technologies changed much of this (represented by Genres 2 and 3). The use of the fax machine made coloured letterheads irrelevant (though there was an official fax cover sheet). Later, email made much of the former genre process irrelevant, and at the same time, the high cost of printing made it obvious to move across to one letter head.

The adoption of a genre does not imply any determinism and with the explosion of new varieties of ICTs, it is impossible to take such a view. The desire to maintain particular, prior normative standards can be seen through the use of disclaimer signatures by some institutions and individuals, in contrast to frequent informality in the body of the email. Problems over copyright (for example the rise and fall of Napster, are another example). Another change in communication format could be represented by the move from emails to SMS messaging and the schemes (for example, the use of 'reduced' spelling, or 'smilies', and their appropriate and inappropriate use in formal and informal settings), or another new technology (hand-held personal digital assistants for example), could see the emergence of another genre of communication, with particular structural principles associated with its adoption, use, and modification. Confusion about appropriate and inappropriate use of mobile phones and mobile phone cameras also reflects a period of genre transition, and the emergence of Web 2.0 is another genre ripe for development[41].

---

[41] Podcasting appears to be heading in this direction. It was not well-known when I commenced the thesis. It became far more frequent in 2005, and is being used for many different purposes by early 2006.

Somewhat provocatively in the same article, Orlikowski and Yates proposed that in an environment where more and more organisational work is electronically mediated, 'the genres through which information is shaped and shared for particular purposes…are no longer a replacement of organizational work; rather, they *are* the organizational work' (Orlikowski and Yates 1994: 572). This is obviously not an axiom for all circumstances. But at least, the potential for disruptions because of the strong agency of a particular genre technology is certainly worth consideration.

The duality of technology, technology- in-use, technology as an artifact

> In addition to being dynamic, structuration is understood to be a dialectical process, hence inherently contradictory. In contrast to models that relate elements linearly, the structurational model assumes that elements interact recursively, may be in opposition, and that they may undermine each other's effects. (Orlikowski 1992: 412)

Orlikowski saw the capacity for structuration to be a dynamic theory in the study of artifactual technology in organisations. Thus, in her first detailed elaboration of structuration theory applied to technology in 1992, Orlikowski elaborated the relationship between technology as a physical artifact and the 'human activities that design or use those artifacts'. Conventional organisational analysis, in her opinion, tends to 'suppress' such a view in favour of a more restricted, determinist approach that understands technology (in particular, computer systems) as a purely material object which intervenes in a predetermined way (for example, to provide a pre-designed electronic form that cannot be altered except to input new information in a prescribed fashion). But in her opinion, such determinist analysis is also overly simplistic, with an undeveloped theoretical base for comprehending the social significance and the mechanical agency effects of contemporary technology.

Thus, a 'black box' picture of technology as it functions in the real world is theoretically and empirically inadequate (Orlikowski 1992: 402; Orlikowski 2000: 404-405). Looking at how technology was developed in the in the 30 years from 1960 to 1990, it is easy to see how such a limited analytical frame came to be the case. The 'problem' of technology was located within technical departments at universities. In the 1970s, ICTs meant mainframes

and highly demanding technical systems in commercial (and often large) businesses or universities, in which there was a separation (which broke down over time), between the hardware developers, programmers, and end-users (often women in data-entry roles) who fed in data. 'Computing' still largely meant an advanced form of applied mathematical calculation and other interactive and accessible activities using graphic and metaphoric interfaces (word processing, graphic design, games), were only known to developers. Furthermore, organisational or sociological researchers (situated in business, management, or sociology departments), had limited exposure to, or technical knowledge of ICTs. The problem continues. As argued by Rose (see p. 189) and detailed by other Information Systems theorists (Colomb and Weber 1998; Dourish 2001 and below, Appendix B), narrow 'technology' analysis continues to be seen as a function of technically-oriented information systems applied to problem-solving—how to get machines to work properly for particular processes—rather also being part of an intellectual exercise contextualised by wider transformative effects and processes in the workplace or society. It is the latter activity which is of interest to organisational theorists and sociologists. Additionally, even though women have been engaged with the user-end of technology through office automation systems, there has been a 'staggering' blindness to this factor in research (Huws 2003: 156).

In fact, ICTs are now pervasive in the workplace, and researching their effects calls on the additional skills of the organisational or sociological analyst. Furthermore, the social setting of such technology is now different. New technologies are no longer just the domain of business, but are socially omnipresent in the private and public spheres (as it the case of Wikipedia, or cross-overs like Google), and the use of computers by women means that issues of gender need to be considered. Thus, for the purposes of this thesis, to take up the challenge of Orlikowski's and Yate's remarks made at the end of the previous section, can we identify the different genres and cultures of communicative activity that are relevant to community organisations, and how are ICTs placed in that process as part of a network of activity?

As established previously (see. p. 87), community-focussed organisations such as Neighbourhood Houses at least, work with a variety of technologies, including significant

human processes. Given the priority put upon human processes and affect, is it possible to identify some of the meanings and emotional attachments that pervade different relationships between people and their artifactual technology (Orlikowski 2000: 423)?

Orlikowski's work offers first steps in that direction. The idea of the *duality of technology,* incorporates the view that agency is instantiated through the interaction between human agent and technology. Technological artifacts engage the *interpretive flexibility* of agents: 'technology is created and changed by human action, yet it is also used by humans to accomplish some action'. The technological artifact can be seen as a 'set of features bundled together into an identifiable and bounded package', yet *in use*, it engages user intentions (Orlikowski 1995: 3). A strict user-designer split is an inadequate way to understand how technology functions. Different interpretive and normative frames (that of designer and that of user) meet each other via technology. Designed technology and technology-in-use are not always a clean fit, the classic case being the range of features contained in the VCR or DVD player by designers who make certain assumptions about users' competencies rather than a counter-intuitive lack of competency.

On a larger scale, designers may incorporate a much broader range of interpretive schemes and norms and these are negotiated and then translated into the 'build' of a particular system. The final product represents the embodiment of a particular structuring of technology, around a belief that knowledge and particular systems of information and knowledge organisation (as well as human-to-human interaction) can suit a wide variety of needs. The most successful and seemingly universal example of all, of course, is Windows as an operating system, and Office as a software package. Yet the lack of satisfaction with Microsoft's corporate dominance has inspired many in the Open Source movement (and corporate partners interested in eating into Microsoft's market) to develop free, equally, or more configurable products. However, whether it is Office or Open Office versions, consider how lectures and presentations were conducted before PowerPoint became available, and the positive and deleterious effects it has had on the analytical or presentation quality of information (Tufte 2003). The impact is not predetermined, and infinitely reconfigurable. In practice, an enormous range of different uses and adaptations are possible.

Thus, put to use, the artifacts (hardware and software) of contemporary technology can be used and modified in any number of ways: modem, phone line, cable, printer, CD-Rom—where does the built system and its networked modifications connections begin and end or 'leak' into different spaces and places (see p. 171)—as new products come onto the market, or personal tweaks and adaptations are made?

The fact that much software goes through updates, in response to users needs, also reflects the recognition that the designer-user relationship is not fixed, and that the stability of technology does not refer to a fixed system, but its robustness. Planned obsolescence and the incorporation of new features, and a certain degree of in-built user customisation are also part of this process (particularly in the case of Windows and Microsoft products, for example, driven by a desire for total market dominance). In the case of Open Source software, in fact, the distinction between designer and user is theoretically at least (depending on one's level of skill), irrelevant, and the relationship is one of equal opportunity, rather than business dominance as in the case of Microsoft. The technology is built with the intention of ongoing modification and interpretation, and as recent studies of Open Source have shown (Lessig 2005), a high normative value of voluntary altruism and distributed social capital around the democratisation of technological opportunity supports a capacity for ongoing interpretive flexibility.

Orlikowksi has developed the concept of *technology-in-use* as the medium and outcome of situated human action to describe this configuration by people of different technologies (Orlikowski 1995: 3). In her critique of Barley, Orlikowski argues that while Barley took the first step in applying structuration theory to the study of technology in organisations, he still conceived of technology as essentially 'as a social object whose meaning is defined by the context of use, while its physical form and function remain fixed across time and contexts of use' (Orlikowski 1992: 402). In a later publication, Orlikowski referred to this problem as an erroneous 'stabilisation' of structures, seen to be embodied in a particular artifact, related to the simplistic and deterministic 'black box' view of technology, discussed earlier (Orlikowski 2000: 412). Furthermore, this viewpoint, found in social construction of technology thinking, underestimates the 'notion of material affordances and constraints' and the active role of human agency in manipulating affordances and

constraints in human-technological relationships (Orlikowski and Barley 2001: 149). There is no place in Barley's theory for incorporating variations in the way a CT scanner 'worked', other than what are 'inscribed' or 'delegated' to the machine as a sort of fixed technology (to use Actor Network Theory language). In fact, the reality is that the CT scanner is a tool like any other which would invariably engender a range of interdependent human responses, no matter what the technical instructions prescribe.

As a consequence, Orlikowski argued that the particular use of technology cannot be taken as a given, and that 'in contrast to models that relate elements linearly, the structurational model assumes that elements relate recursively, may be in opposition, and that they undermine each other's effects'. The recursive relationship between human agents, artifactual technology and the institutional properties of organisations must be considered in order to gain a correct understanding of the structuration of technology (Orlikowski 1992: 412).

Additionally, with great insight into the dimensions of organisational behaviour, Orlikowski has suggested that 'institutional properties' include:

> [S]tructural arrangements, business strategies, ideology, culture, control mechanism, standard operating procedures, division of labor, expertise, communications patterns…professional norms, state of knowledge about technology, and socio-economic conditions' (Orlikowski 1992: 409)

This taxonomic statement contains many elements of future, complex research projects involving multiple disciplines that interest with the presence of ICTs in organisations.

Knowing in practice

> When practices are defined as the situated recurrent activities of human agents, they cannot simply be spread around as if they were fixed and static objects. (Orlikowski 2002: 253)

In another piece of research, Orlikowski focused upon the process of *knowing* as distinct from *knowledge,* in an attempt to provide some clarity to the problem of action in distributed organisations. This distinction adds depth to the notion of 'enactment' of organisational culture in the structural principles and stocks of knowledge held by individuals, and distinguishes it from the traditional approach in Information Systems

which assume that is possible to define knowledge worlds 'to automate the achievement of certain goals'(Johnston and Milton 2002: 1) .

Based upon her study of work practices in a globally-distributed software organisation, Orlikowski observed that individuals (and by implication, organisations), go through a repertoire of recursively performed practices that are, echoing Giddens, an 'ongoing accomplishment', in which human agency is critical (Orlikowski 2002: 267). Drawing upon discussions of knowledge management, she pointed out that some discussions are flawed by an assumption that tacit and explicit knowledge are separable, and a false separation of the two leads to a reification, resulting in for example, a focus on the tangible, rather than the processual in the development of knowledge and skill (for example, technological systems).

In her opinion, this displacement, or analytical bracketing, has resulted in an imbalance or displacement towards 'technical issues' around knowledge capture, management, transfer and exchange (obviously of great interest and pecuniary interest to corporate managers and designers of IT systems), rather than deeper, ethnographic understandings of how knowledge is embedded, embodied, and shared amongst human (and it could be added, machine) agents, the sort of understanding which Rose (see above p. 189) has also sought to provide to Information Systems (Orlikowski 2002: 269). For the study of organisations focused on human technologies or technologies of care, and processes, the utility of Orlikowski's discussion of *knowing* is significant, as it provides an evidentiary basis for the argument that much knowledgeable work is conducted, and cannot be easily replaced, by skilled practice, though at the same time, it is intimately related with *knowledge* and *knowledge tools* such as ICTs.

Technology in practice: emergence and enactment

The early representation
Some years later, after reconsidering her own (and her colleagues') research in corporate settings, Orlikowski proposed that *technology structures are emergent, and enacted, rather than embodied,* through *technologies-in-practice* (Orlikowski 2000: 406-7)). This again moves the focus of analysis away from the 'stabilised' artifact perspective, to one which

accepts that the human agency-artifact relationship is essential to understanding actual technological use. At any point in time, therefore, in the development, implementation, use (and disposal) or a particular technology:

> [T]he concept of technology in use can be understood as the social structure (the set of rules and resources) mobilised by actors in the ongoing and situated use of a particular technological artifact. In this framing, technology-in-use is both the medium and the outcome of situated human action. (Orlikowski 1995: 3)

This perspective incorporates much of the insight of other researchers such as Suchman and Weick, but it also provides capacity for further incorporation of the 'governance' perspective of writers Foucault and Nikolas Rose, and the Jeremy Rose's insights about Actor Network Theory.
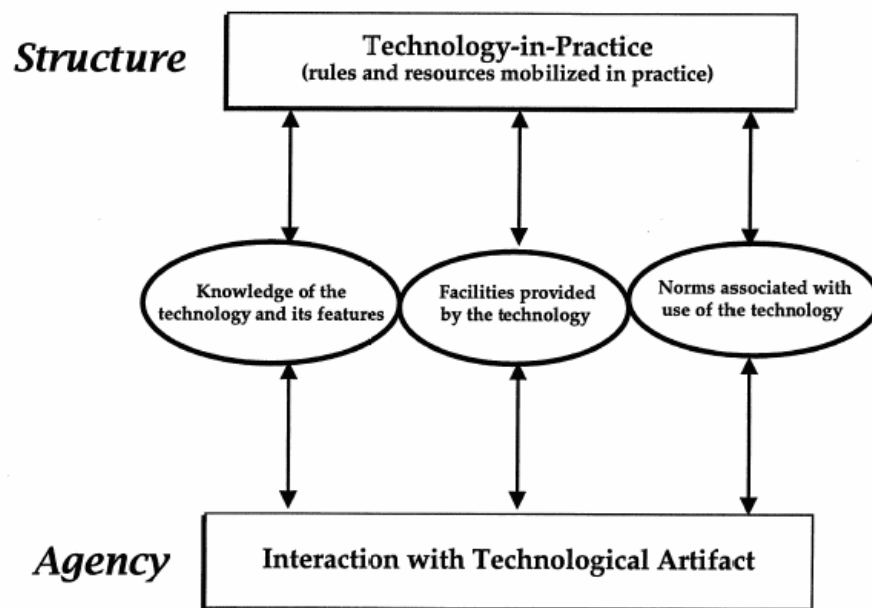
Figure 21. Enactment of Technology in Practice (Orlikowski 1999: Figure 1)

The preceding figure featured in a Working Paper (Orlikowski 1999) that later became the substance of her 2000 article (Orlikowski 2000). If the structuring of technology can be conceived of as a kind of social system with agency/structure components, it can be then be fruitfully overlaid onto Giddens' representation of structuration (see above p. 149). Of particular relevance is the fact that Orlikowksi achieved a translation of complex structurational and technological concepts into a practical analytical frame which was then

used to characterise different individual and group constructions of technology. These typologies were also further described in terms of the conditions, actions, and consequences of enactment of particular technological relationships, matched to a measure of 'systemness' (above, on page 156).

Starting from the bottom of the figure, agency can first be considered at an individual level (adapting Giddens' earlier terminology, this could also be called the micro-level of knowledgeable strategic conduct), and the top row represents the institutional structure— that is to say, structural principles which instantiate themselves through storage and reproduction across time and space in particular environments—applied to ICTs. The only danger with this method is that an uncritical approach can completely 'centre' or reify artifactual technology to the exclusion of other significant modalities such as stocks of knowledge (norms) or communicative means and other non-material technologies and processes. If this occurs, then researchers are back to square one, having fallen into the trap of uncritical and reified techno-determinism that ignores the more complex world of human-machine interaction as a critical variable in the understanding of technology use.

In the 1999 Working Paper, and in the revisions published in the 2000 article, Orlikowski thus argued that the principle of 'technology-in-practice' allowed for, citing Barley, 'a behavioural and interpretive template' (Orlikowski 2000: 410), in which to analyse the situated use of technology (Suchman 1999; Suchman 2002). The idea of an interpretive template (reminiscent of the discussion of genres and the duality), sensitised by an awareness of the nested and overlapping nature of human reality as reproduced in recurrent, yet malleable and emergent human practice intersecting with technological artifacts (*pace* Giddens, Goffman, Suchman, Weick), results in a further, and critically-important insight about the 'technologies of governance', the bundle of techniques utilised in building or maintaining organisations' cultural or structural principles (see above, p.89). The template also acts to potentially include the 'technologies of care', the more indeterminate community or human technologies which are also emergent in environments such as community-based organisations (see p. 87).

Reconsidering her research on the development and use of Lotus Notes in corporate settings, Orlikowski identified at least three discrete varieties or frameworks for considering different responses to technology, based on her depth interviews, participant observation, and document review. These included propensities on the part of actors towards discrete cultures of technological embodiment such as collective problem-solving; limited use of technology; or individual productivity. The accuracy or otherwise of each of these frameworks is not of prime concern here, and Orlikowski admits that such uses may not occur in all circumstances, but are an example of the potential to identify and include particular workplace cultures, based upon study of the embodiment of technological relationships *in situ*.

In the article published in 2000, Orlikowski presented a much more complex elaboration of the preceding diagram and some of its progressions are reproduced below. The discussion below reveals particular aspects of her formulation and suggestions are made as to how they could be applied to the analysis study of community settings. My adaptation of this series of diagrams, influenced by other concepts revealed in the research review will also serve to introduce further chapters of the thesis (see p. 215).

Figure 1   Enactment of Structures in Practice

Structure

Structural Properties of Social Systems
(rules and resources instantiated in practice)

Agency

| **Facilities** | **Norms** | **Interpretive Schemes** |
| e.g., land, buildings, technology | e.g., codes of conduct, etiquette | e.g., categories, assumptions |

Ongoing, Situated Human Action

(Adapted from Giddens 1984)
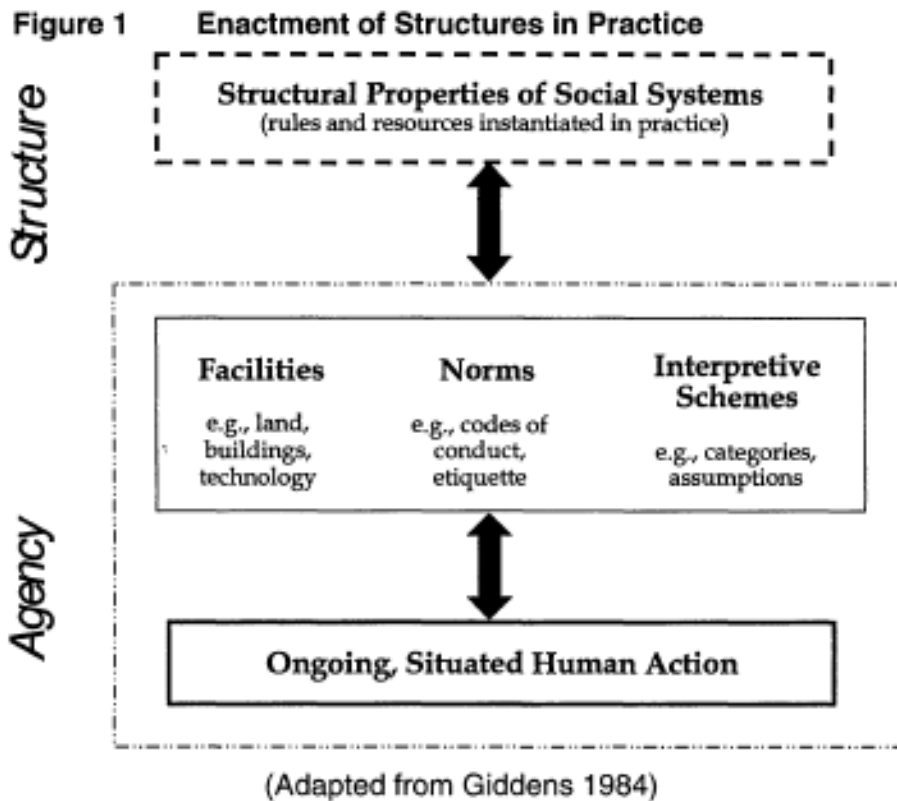
Figure 22. Generic Framework for Representing Enacted Technology (Orlikowski 2000: 410)

The above figure is a generic framework for analysing enacted technology that can be compared with the Giddens-Gregory version of the modalities of structuration (see p. 149), particularly the middle row of modalities.

207

Figure 2   Enactment of Technologies-in-Practice

Technologies-in-Practice
(rules and resources instantiated in use of technology)

Structure

Other structures enacted in the use of technology

Agency

Facilities	Norms	Interpretive Schemes
e.g., hardware software	e.g., protocols etiquette	e.g., assumptions knowledge

Ongoing, Situated Use of Technology
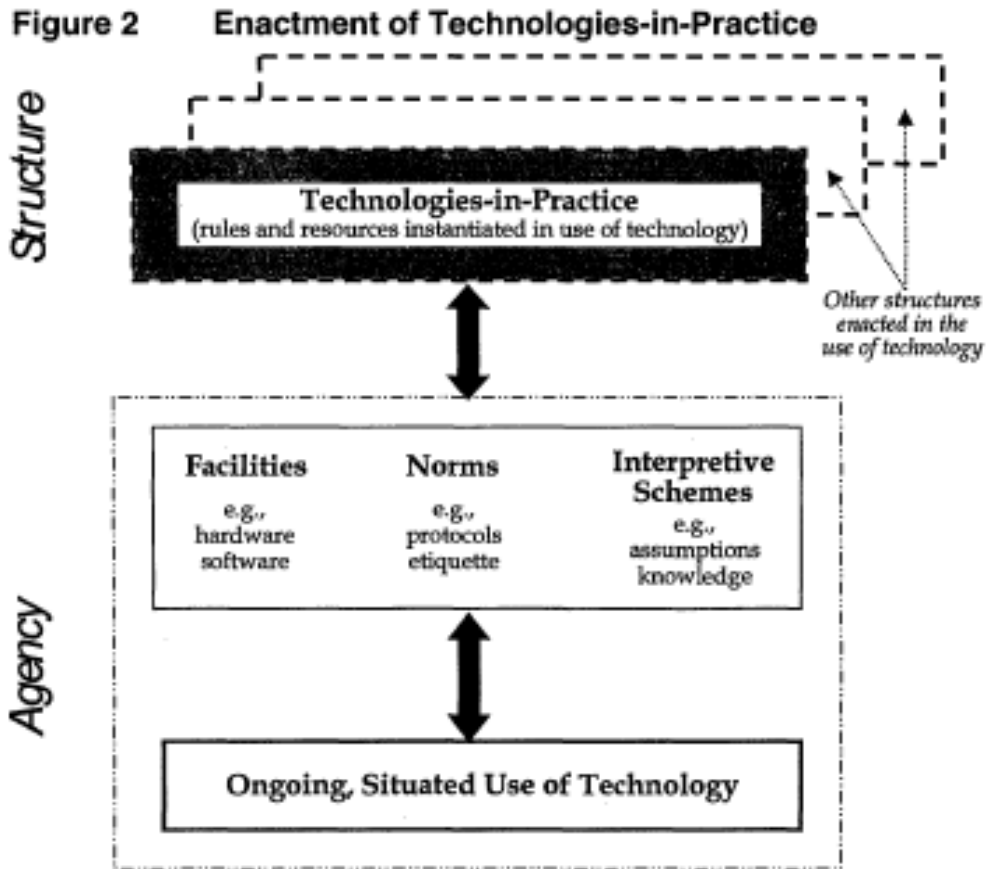
Figure 23. Multiple Representations of the Structuring of Technology

In this version, a figure is presented for the possibility of multiple variations or instantiations of the structuring of technology. This diagram echoes Rose's attempts to present the recursive and iterative nature of structuration (see above, pp. 189ff.) with its small side box and arrows indicating 'other structures enacted in the use of technology' , but the diagram also has the capacity to be interpreted as representing degrees of 'systemness' (on page 179), through accompanying empirical elaboration of different types of technological relationships, affective dimensions (meanings and emotional attachments), as well as the time-space dimensions of structuration if regarded as a three, rather than two-dimensional representation.

Figure 3   Collaboration Technology-in-Practice Enacted by Developers in Iris

Distributed Authority

Participative Culture

Nonhierarchical Structure

Collaboration Technology-in-Practice

Facilities, e.g.,
- electronic mail
- discussion databases (read and write)
- text entry and edit
- database creation and customization

Norms, e.g.,
- tools are best designed collaboratively
- empower users by distributing control

Interpretive Schemes, e.g.,
- technology is powerful tool for collaboration
- extensive technical expertise
- evolving understanding of the value of *Notes* for collaborative design

Developers use *Notes* extensively to collaborate on the design and development of the *Notes* product

.

Figure 24. Representing Cultures in Practice

This figure represents a summary of Orlikowski's findings concerning the structuration of different workplace cultures based upon use of Lotus Notes. Such a representation provides a quick insight or overview of key dimensions and processes which can then be supplemented and fleshed out by a much more detailed narrative. It presents the following key insights. Without an underlying principle of collaboration, it would be impossible to move beyond individual agency with artifactual technology. Through utilising the company software in the company in particular ways, this collaboration is then embodied in a collaborative use of the technology. This can be contrasted with more individualistic or hierarchical cultures and embodiments through the technology which Orlikowski also identified and for which she developed similarly specific pictorial representations. For example, the 'collaborators' used certain features of the software extensively, while these

209

were ignored or only partially used by others who did not form part of the collaborative sub-culture in the corporation she studied.

Further Critique

Several observations can be made about the utility of Orlikowski's representation of technology-in-practice or embodied technology, as the most developed version of her theory of technology.

The first is that there is a danger in the centering of artifactual, as distinct from processual or human technology/ies in both analysis and representation. As Orlikowski clearly understands, and as has been made explicit throughout this thesis, the concept of technology must be understood of consisting of several parts. The two major elements are human technologies and processes (including what she calls 'knowing-in-practice'), as regularized processes and procedures for particular outcomes, and second, the artifacts or matériel which interact with such processes (boxes, wires, bytes). A 'black box' understanding of technology artifacts, while technically correct in the sense of getting circuit boards and software to work, is consequently *sociologically* erroneous as a means of acknowledging and understanding the 'situatedness' of the artifact in particular environments. These situated, ordinary, workplace cultures—what we could call *humanised, workplace technologies*— are critical keys to understanding how and why artifacts are used in particular ways. Here, technology comes to embody and enact not just the designer or 'brand' intention (and hype), but particular institutional or corporate expectations and behaviors about the processing and management of particular forms of knowledge and information, or processes of change or stasis. Action is structured around these arrangements. Thus, artifactual technology is both governed by such expectations, but at the same time, as Actor Network Theory demonstrates, technology can govern (and strongly at times) human agency.

Second, Orlikowski gives insufficient attention to time-space issues in her analysis. Even though she prepared a Working Paper on time-space (Orlikowski and Yates 2002), it provides little to supplement the work of time-geographers as reviewed previously (see p. 158ff.).

210

Finally, Orlikowski's work has focused on organisations which of themselves, are artifactually focused, in either the creation of software products or the use of particular technologies in business processes. However, as Orlikowski has herself noted, her theoretical frame should be adopted for other types of organisations, including non-profits where new technologies are an 'add-on' to current processes (Orlikowski 2000: 423). In order to do this, her work must be sensitized by the concepts of researchers such as those reviewed so far in order to more adequately represent the mixture of human and artifactual technologies at play in the reproduction of order both within institutions, but in the relationships and networks in which they are inevitably linked.

Chapter conclusions

Current theorists of the structuration of technology

The following table summarises the major issues in Giddens and related theorists concerning the adaptation of structuration theory to the study of organisations. There is a range of vocabulary and concepts which recognise the active social construction of workplace human technologies and how they interact with artifacts; that an understanding of the concept of technology is one that engages an embodied relationship between people and machines; that such relationships are contingent and while partly embodied in instructions and programs, are also emergent and enacted in the reproduction of 'localised practices' or 'structural sets' (Giddens 1984; Giddens 1989: 298-301: 302-304) which themselves, incorporating the insights of geographers, are structured within particular constructions of time and space.

The identification of 'scripts' (Barley), 'technologies-in-practice', or 'enacted/embodied technologies' (Orlikowski) recognises the practical and tacit knowledge (or Giddens' discursive and practical consciousness) and processes of active knowing and construction that is carried out by human agents. At the same time, moving on from a more limited understanding of agency, it should be recognised that from a practical and theoretical perspective, agency—or degrees of attributive agency—should be accorded to ICTs, using the insights of Actor Network Theory, feminist perspectives, or theories of geography and governance as reviewed in preceding chapters. Additionally, the very concept of

technology can be understood to consist of both human technologies (the technologies of care), and artifactual technologies which are drawn into processes of governance of human organisation and particularly, organisational processes. The prospect of a more accurately developed analytical framework for the investigation of the synchronic and diachronic aspects of different forms of technology has great potential for a future project to better fill out many of the conceptual dimensions listed below.

Table 6. Conceptual Dimensions of the Structuration of Technology

Theorist/Vocabulary	Concept of Technology	*Comments*
Giddens Core language of structuration theory: • Knowledgeable agency • Duality of structuration • Structural Properties/structural sets (Sewell: schemas) • Modalities • Allocative and Authoritative Resources	Technology as an 'allocative' artifactual resource. Information resources and artifacts store institutionalised power across time and space. Technology as a critical artifact of modern institutions and constraints. Studying intersecting strips and scripts of agency (including the use of technology) from personal to institutional level in social reproduction across time and space. Time and Space are real structurating dimensions, through and by means of which order is constituted.	*Focussed primarily on human agency, capability and constraints as part of an overall theory of social order and reproduction.* *Reflective analytical dualism at the micro, meso, and macro levels.* *Doesn't apply structuration theory to an agency theory of technology.* *Time and Space are incorporated into a theory of distanciated organisation and communication.*
Jeremy Rose (and others) • Perceived autonomy and degrees of agency	Agency: for both humans and machines, for the latter, perceived, partial autonomy, assemblages	*Deep discussion of human-technology relations and their adequacy/inadequacy within structuration theory, drawing upon Actor Network Theory. Develops a richer picture of degrees human & machine agency than Information Systems.*

Theorist/Vocabulary	Concept of Technology	*Comments*
Barley • Organisation can be viewed as the grammar of a set of scripts	Technology essentially fixed, but scripts for different agents developed across time in different settings.	*Limited agency of artifacts*
Janelle, Gregory, Hagerstrand, Urry • The friction of time space distance has been reduced (Janelle) • 'bundles' of activity *Harvey* *Paul Adams* • Extensibility	Technology is affected by, and directly effects time/space distanciation. Time and space are social concepts & commodities produced by particular means of production. ICTs extend the physical body; locales are 'leaky containers'.	*A rich conceptual frame to consider in the appropriation and modification of new technologies in different local and extended settings.*
Orlikowski (and others) • Genres of communication • New technologies are configurable • Knowing as Practice • Technology in Practice • Embodied & enacted technology	Focus on the agency of technology as emergent, enacted and enabled through human intervention. New, non-static and particularly reconfigurable technologies.	*Application of the major framework of the modalities with some adaptation, to the study of formal institutions (i.e. corporations), with potential for further adaptation in different sorts of organisations in the identification of particular human-technology cultures and subcultures.*

A new structurational framework for the study of community-based organisations

Drawing on the conclusions for this chapter, and the findings of other chapters, an attempt is now made to propose a more satisfactory conceptual framework for comparison with the concepts and theories arising in the following fieldwork-based chapters. The study of community-based organisations (as an example of a non-commercial enterprise as suggested by Orlikowski) still requires additional concepts in order to fruitfully engage with the particular culture which these types of organisations reflect. The following table summarizes some of the key vocabulary and concepts that are particularly useful for the development of a new model with can more effectively incorporate the relationship between people and technology in the environment of community-based organisations.

Table 7. A New Structurational Framework for CBOs

Theorist/Vocabulary	Concept of Technology	*Comments*
Human & community services writers • Technologies of care (Webb) • Governance, rationality (derived from Foucault, Nikolas Rose and Habermas)	'Human technologies' Technology as a process, human action is first, artifactual second. Dystopic strain: technologies as control; particular governed news technologies of care framed within the framework of an Foucauldian ensemble or technology of controlled governmentality, that is, the practices of self-control, social control, the administrative rationality of the state, and its controlling parcel of different know ledges	*Lack of integration with general theories of technology: this is a key point for theoretical and comparative, empirical research and practical development.*
Rothman and Tropman • Different models of practice *Hustedde and Janowicz* • Structural principles around social solidarity. *Permezel* • Gendered sites of enaction *Bhattacharyya* • Solidarity and agency *Stillman & Stoecker* • liminal boundaries or cross-over space between public and private spheres	Community and welfare practice has competing models of practice and rationality, equivalent to different technologies.	*The importance of community, locality and gendered placed-based identification cannot be underestimated. Place & social solidarity are drawn upon in the 'construction' of local community and community places and spaces.*
Foucault • Technologies of control and power • Capillaries of power	Governance with, by and through technologies; 'assemblages of power' (Rose)	*Sensitivity to power and governance relations that can be applied at the macro and micro level.*

Nikolaus Rose	Governance Assemblage of technologies Technologies of governance	*Significant fine-graining of Actor Network Theory for adaptation.*
Weick	Equivocation and contingency; new technologies knit workers and machines together in new ways	
Suchman	Situatedness;; technologies as skilled, situated practices	*Emergent sensitivity to power, gender, and governance relations that can be applied at the macro and micro level.*
Marxism *Braverman, Greenbaum, Huws & others* • Material labour	Technology as an agent of the control of the mode of production New principle of affective labour using the new technologies	*Some indications in Marx of an agency theory of technology.* *For feminist writers, insight into work-home-unpaid labour & social reproduction.* *Tends to be utopian with a broad brush. Limited insight into 'mundane' micro-level human-technology interaction*
Ron Day	Disciplining language and its effects on professions Commodified conceptions of knowledge and information	*High-value on affective social and linguistic relations in post-Fordist service and social care institutions.*

We can now consider what a pictorial theoretical model (see p. 27) for 'embodied community technology in practice' would look like, incorporating not only Orlikowski's work, and Gregory's version of the modalities of structuration. First, however, the insights of the other theorists reviewed in previous chapters, particularly around the ambiguous nature of human services technologies and processes (for example, as found in the discussion by Sandford p. 94) should be reviewed, as these add to the depth of the model. Some terminology could be disputed, given the variations in vocabulary (rather than conceptual underpinnings) by researchers, but the key point is that a 'community modification' is possible. Furthermore, I have not 'centred' technological structuration as found in Orlikowski. Rather, I have given it particular nuances—as technologies of care or

administrative technologies. My reasoning for this is that any centring of technology will inevitably lead to reification over the effect of the technological artifact, rather than a consideration of the recursive relationship between technological artifact and people.

The figure below accepts that multiple versions of structuration are possible, thereby capturing Orlikowski's own attempt to represent a general principle, with different versions or levels of detail that can be captured through further elaboration. The arrows on the left are also meant to represent structuration by, through and across the dimensions of time and space in light of the salience of extensibility, and the need to investigate the 'degrees of agency' at a synchronic and diachronic level, as established through the discussion of Actor Network Theory. Starting from the bottom row, ongoing human-artifactual practices are reproduced and drawn upon by individual agents through different forms of language and normative frameworks at a micro or co-present level. The middle row, consistent with Giddens, represents the means drawn upon to instantiate these (149) . At the highest level (what Giddens would call structural principles), community technologies in practice represents the overall embodied culture of human-artefact relationships in a community-based organisation. Of course, such representations could be infinitely varied, but they are meant to only be indicative of process, not isomorphic, as a technical 'systems' model or representation. Through empirical investigation of different situations can other variations can be identified.

A major difference with all past representations of structuration is my incorporation of time and space as a form of resource as well as the real 'location' of agency. This is indicated by both the doubled-headed arrows on the left hand side of the diagram, as well as the presence of time and space in the Facilities box. These modifications acknowledge that time and space can be drawn upon (and in addition, that action 'sits' in time and space). These changes thus better account for the agency of technologies in affecting communication processes.

The following chapters test out the salience of this representation of the process of structuration through interviews with the coordinators of one type of community-based organisation (Neighbourhood Houses) seen through the Grounded Theory lens in an

attempt to generate theory based upon the thoughts of community workers themselves. In the final part of the thesis, I return to consider and conclude with further theoretical and practical implications.
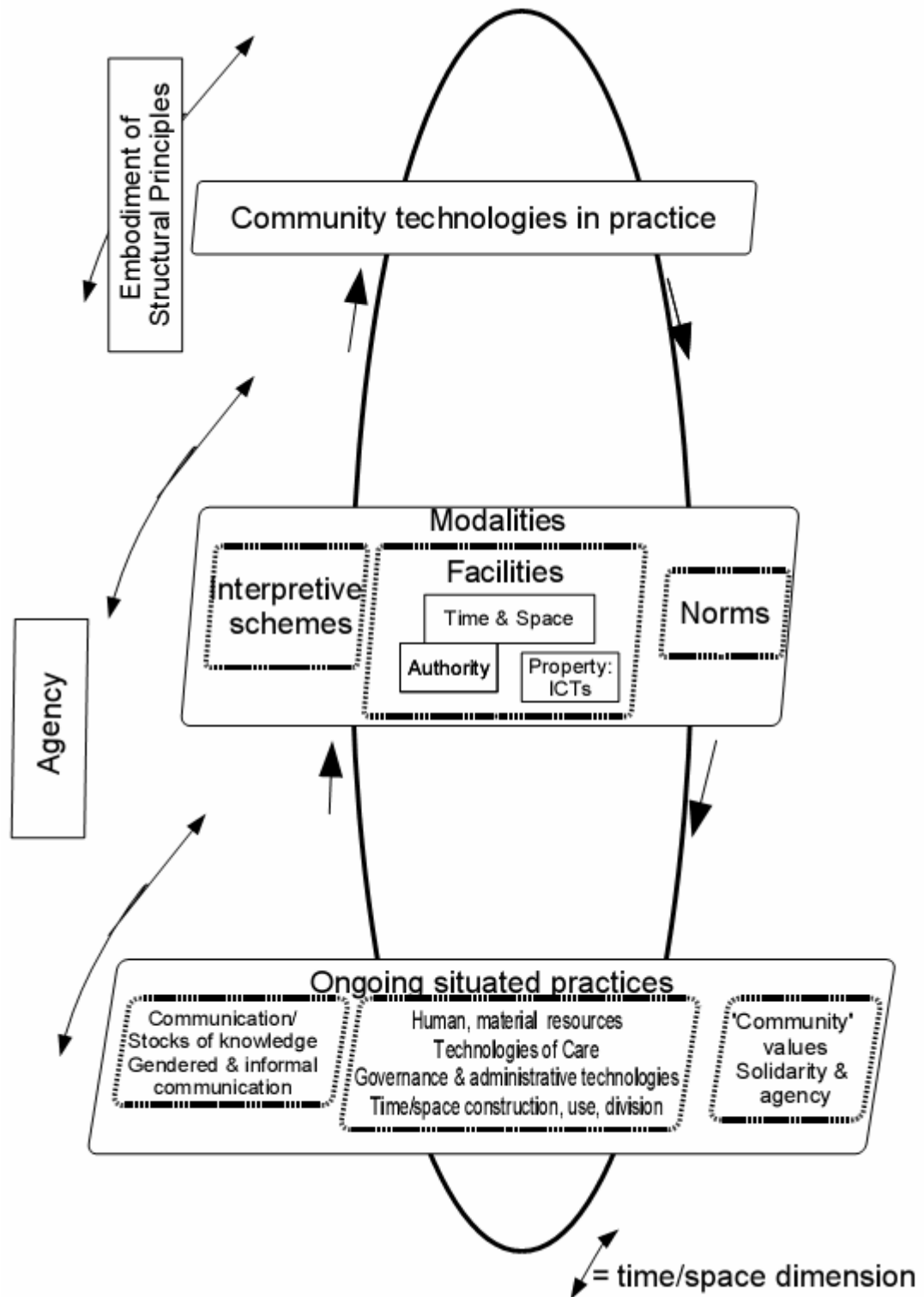
Figure 25. Generic Representation of Community-Based Organisations and the Structuration of Technology

Part II: The Data: Theory from the Field

This part of the thesis investigates concepts and theories that have emerged from the interviews with Neighbourhood House workers. Based upon a Grounded Theory methodology (see p. 90), the testing of data for theory construction has inevitably also drawn upon other theories found in the research and practice literature. A modification from the ideal type of Grounded Theory suggested by Glaser and Strauss is that the interview and data review process has not been conducted in isolation from the other theories and concepts. A 'pure' process of theory generation is a theoretical and practical impossibility, because any researcher will be engaged in an internal and external dialogue with his or her own prior assumptions or training, and those of colleagues, about preferences, theories, and experiences, at the level of practical and discursive knowledge. Value-free, positivist practice is not feasible. Furthermore, as Giddens has argued, the effects of what he calls the 'double hermeneutic', based upon insights from ethnographic and anthropological research, mean that there is a constant recursive communicative process between the subject and the researcher that effects the language and conceptual frames of each party (see p. 137). Thus, the concepts and theories of other writers in the context of structuration theory (and my own conclusions), summarised in the figures and diagrams in the preceding chapter, are both the result of research reading and working on the data and accompanying narrative.

In the first instance, categories and underlying principles or propositions were constructed through a rigorous comparison of the data after it had been unitised (see. p. 39). I have, as far as possible, tried to 'let the data speak for itself'. However, there are several occasions where the data so strongly confirmed, or prompted a response based upon other literature about structuration or other issues (particularly around the concept of technology), that this discussion has been incorporated into the narrative, rather than being postponed for later comparison.

9 Neighbourhood House Values: 'It's an elastic sort of community'

This chapter investigates the values of care that underpin the activities of Neighbourhood Houses and the agency that such values have in shaping the character of work and relationships to ICTs. While I have attempted to use the interviewees' own words as much as possible in the framework of the construction of concepts and overarching theories, using the language of structuration, we can see that the interpretive scheme and the value set or norms through which the values convey, also set in place particular sets of practices, that can be called, using a less-deterministic application of Webb's term, technologies of care (see pp. 87, 88). In addition, the particular view about place also highlights the particular use of space and location as a resource to instantiate those values.

A community and client-centred approach

As suggested on p. 4, Stoecker suggests that one useful understanding of the concept of 'community' is that community is self-defining: it can be 'the people with the problem' (Stoecker 2005b: 45-46). Of course, not all communities need to be seen as problematic, but the point is that community organisations most often identify some form of need with which they work to improve or change individual or group conditions and circumstances (Stoecker and Stillman 2006). Sometimes these needs (and associated programs) have been identified by outside funders, particularly for geographic communities and service regions. However, on the ground, engagement is elastic (see p. 227), and not easy to put boundaries around:

> It's not about a service…and that's, I think that's why government has had a great deal of difficulty with getting a handle on the way that Neighbourhood Houses work, that we're not just about producing a product of giving a service, it's, it's a different feel, and it's a different way of operating. It's also about, I don't believe that you can just engage community through computer. [11: 277-281][42]

---

[42] References to interviews are to be interpreted as referring to Interview Number and line references

People come first in this world view:

> So our core values are the same as they were which is basically 'the person first'. So, um we've always, its, people need to feel you know, they're not just a statistic, they're not just someone who does a computer class. [1: 261-264]

For another worker, strongly imbued with the values of volunteering, technology and volunteering were now intrinsically linked, and that 'I don't think that you could do one without the other' [14: 131-132].

A number of people highlighted the pastoral nature of their work, to the point of it being a form of vocation formed around social justice values with religious roots. One worker highlighted the fact the many of her co-workers were lapsed Catholics, and that 'people have not got to be treat like shit…people have got to be empowered as much as possible' [5: 70-71]. Another worker had come to Neighbourhood Houses from resettlement work with refugees from a part of Europe which had recently suffered many years of civil war. He believed that his experience of working in community development with people in dire need could be transferred to other settings[43]. A community educator located in one of the Houses also commented when I suggested to her that there appeared to be a link between the pattern of shared values, part-time work, and supportive husband or partner which enabled many women to work in Neighbourhood Houses:

> Yeh, I think so because I mean it because having that kind of social justice driving force in what you do and also the, you know, you're committed to what you're doing, and I think most people you'll find in Neighbourhood Houses maybe have, have had a similar kind of journey in working through more mainstream areas, and then finding the rewards and personal satisfaction outweigh the fact that you know the pay is not good, you're always struggling for money, you know the environment might be a bit sort of run down around the edges, but it's choice rather than going into a corporate environment or a bureaucratic environment. [17: 14-21]

A capacity for social inclusion was a primary factor in the world view of one coordinator located in a high-need, low-income public housing estate. Based on prior interviews, and a

---

[Interview: line reference/s].
[43] 13: 30-38.

tendency of respondents to focus on the support of women and families, I was surprised that this centre also targeted working class 'blokey blokes', and she noted that:

> We see ourselves as a community centre and the community engulfs a lot of other people who aren't necessarily marginalised groups, while services and programs are there for the marginalised groups, that need them, old Joe down the corner who's not necessarily on any sort of benefits but you know has some time on his hands and wants to do something, can use this facility and we're not going to say no because you're not a one-armed lesbian with you know that's black, you know that sort of stuff, so we, we've as an organisation have made an ethical choice to make sure that our services are community-based, and that's general, right across the board as opposed to yeh, any [...] gender specific stuff. [19: 54-62]

Another worker highlighted the importance of the continuity of values and personal presence in community work:

> I find that the personal one-on-one, that's what's different, that's the continuity, because I've been the person that's been here all that time, and it makes a big difference in you know, because you can see, um you can look at, the, the dilemmas that they've been things that you've tried that haven't worked or whatever, but continuity is really important because the upheavals that occur when you've got people shifting and changing every few years, everyone comes in with a new philosophy etcetera etcetera whereas this, we've been able to right from the outset, we've been able to carry through and you know that policy of continuous improvement, um, whereby we're always looking at the core values haven't changed, but we've always looked to see how we can broaden our horizons. [1: 349-358]

The continuity of values—structuration theory's normative dimension—framed in the context of a particular *modus operandi* that is structured in time and space, is communicated to one to one and all in the community (including blue-singleted 'blokey blokes'). This is critical to the longevity and local meaningfulness of Neighbourhood Houses.

Place values

Neighbourhood Houses are conceived of by interviews as akin to a positive home-like environment, with an intimacy and openness that is welcoming to all. The combination of

intimacy, openness and care amounts to a 'focal point'[44], or 'niche' as described below, a particular place for the local community, in this case, one serving a mix of older and newer residents in an area with substantial poverty:

> I just think that we've got a niche and uh, people that come in…it's funny, the thing that people most say about when they come in here, it's very homely, it's very welcoming, and is…Yeh, you know, it's just that the place that people feel ok about coming in. When they get into a class here I think we've got very good—oh, incredibly quality teachers, they're great, who go that bit extra, the Committee of Management are very supportive, they're local community people, they…I don't know, I couldn't dissect the ingredients that really make us exactly what we are, that, you know point us at various things. [11: 296-307]

Overwhelmingly, there is an emotional attachment to the particular use of physical space, reminiscent to how people talk about their homes. Thus, for one worker in a now well-established housing estate of increasingly middle-class housing:

> From 8am to 12 midnight, there's hardly a space, time-slot available at this centre, it's well-used, and well-loved by the local community. [2: 76-77]

The importance of the physical affect on people's sense of place as a liminal intersection between the public and private spheres of gendered social reproduction in the course of daily activity (see p. 71), cannot be underestimated, and for other worker, problems with the building design (her centre was designed for another purpose, with an anonymous vestibule) can actually interfere with the creation of positive social relations, despite the value set:

> I love working with people, and I love the idea the idea of the community house as a meeting place for people in the community to meet together, you know, they can meet together for social reasons, for support, to learn new things, and I see my role very much in helping people to facilitate those needs, finding things, you know, it can just be a drop in centre, this centre doesn't really, just the very design of the building, doesn't really help that drop in sort of environment. [9:121-126]

---

[44] 1: 169

Another coordinator made particular reference to the need for aesthetically pleasing surroundings, unlike the chaos she associated with other Houses:

> When I first started here, every wall was covered in depressing posters and pamphlets about AIDS about …are you divorced, have you been abused. You know, the whole range of depressing social issues, was flung back in their face …I think that aesthetics are incredibly important in Neighbourhood Houses, I think too often people are housed in depressing little, horrible little hovels and think, well, that's their lot, and keep dishing it back out to the service users, to the clients, to remind them of their lot, and I think that is the wrong approach. I think the approach should be yes indeed, you have a range of issues, social or personal indeed, however when you come here it would be nice to think that you're coming to a warm welcoming aesthetically pleasing environment. [15: 222-226]

For another coordinator, whose centre abuts ageing public housing flats, special uses, commitments, and feelings about space distinguish Neighbourhood Houses from more bureaucratic or educational physical environment.

> *Right, as a place between bureaucracy and other services and the rest of the world and a House, what's so special about it, what functions does[the Centre] have?*

> Well the thing is what the difference is you walk in here, and we're—Hello!— there's not many places that you can actually walk into, this is my office, this is my you know. People walk in here, as you can see the child care is making a racket—making a racket in the back here, the kids making a noise and screaming here—my students across the way they can see me when I'm in here they wave to me, not my students, they're the teacher's students…. There's an intimacy, there's an access—now that's different in various centres too. [5: 80-84]

I noticed in my interviews that the coordinators' offices were by and large, physically 'open' to all comers, rather than the separated and secure office found in bureaucracies. A number of those interviewed made particular reference to the placement and look of their work environment. Rather than being hidden out the back, offices are deliberately placed near the entrance (for example, in the front room of old houses, or a purpose built niche or alcove with a glass partition near the front), and are part of a process of welcoming—anyone can walk into the 'bureaucratic' aspects of the organisation. And of course, being near the front is an unobtrusive form of surveillance. Another way of viewing the physical construction of many Neighbourhood Houses is that effort put into reducing the

psychological distinction between 'front' and 'back' operations in Neighbourhood Houses and implications of personal availability as well as contingent power relations between users and clients (Giddens 1984: 124ff). The following worker's remarks also provide a sense of the historical continuity that she feels about her centre, located in an old, single-fronted terrace house which is probably a century old:

> *I had mentioned how there seemed to be no attempt at physical separation in many of the houses (though some purpose built centres had offices they were still easily accessible). Was separation desirable?*
>
> We don't want that happening here, because […] originally the Neighbourhood House was a drop in, I'm here as security, I'm always looking out the window, and just in case the gate doesn't close, maybe a child might walk out, seeing who's coming in and out, and even though there are over 500 people in the house a week, and they'll be probably just dropping off kids, and then you've got the others coming to classes, and then there is someone who can get lost or you don't know, there will be someone that can pick them up…and can say can I help you, what are you doing here? [12: 263-270]

Another worker, in discussing the impending co-location of her centre in a library, noted her concerns about the potential loss of 'intimacy' in a new, purpose built structure, where personal contact could be missed.

> [I]n a lot of centres, people come in, they do a class and they leave, whereas they have to go through that main room, that main office, and I make it a point to you know, speak to every person that walks through whether it be during their break whether it be when I enrol them, whether it be you know 'how are you today' and we'll start a conversation going so that personal one-on-one contact is something that you know is very, very important and we've had that all along. [1:335-341]

Thus, the division between a more formal bureaucratic or management 'front' is dropped for a preferred intimacy-in-place.

'It's an elastic sort of community'

Neighbourhood Houses do not exist in isolation, but are part of a network of care into the community through the voluntary and professional networks of community care, support, and education. The following quotes exemplify the properties of such a network of care:

> The centre is for firstly the local residents, where it's situated and the wider community, offers a range of activities programs, information, social activities, support, child care, playgroups all of those things that every other centre that you talk to does. [24: 117-123]

> The house is the place for people to go, be it if they just want a cup of coffee and someone to talk to, be it bring up a problem they've got in the community or something in their street or whatever it is, we've also got an emergency relief program. [13:50-56]

The phase 'stepping stone' is also used by one worker, to describe the bridge between the home and the wider community, and another refers to Neighbourhood Houses as a 'non-judgemental welcoming space'[45]. The metaphor 'stepping stone' also resonated with the comments of another worker:

> Neighbourhood Houses are fantastic stepping stones for finding out about the bigger picture, about what's available out there, and the people that we get are people who may never go to your local TAFE or to your VUT and they are quite happy doing that, but it can also act as a springboard to actually go further. So it's a first point of call…[1: 130: 133] [46]

Which individuals and groups in the community are affected by this use of Houses as stepping stones? The following passage is an example of the stepping-stone effect that this provides for members of a community located near public housing in the inner city:

> What we do in the House; obviously we basically cater to people from a wide range of what we term as more disadvantaged groups, whether they're educationally disadvantaged or the people with disabilities…physical disabilities, you know people on lower incomes people from non-English speaking backgrounds, sole parents, older adults…I guess that is what we do in our local community so we network in with a whole range of other organisations, you know similar organisations, people refer to us, we refer to other organisations, so we have quite a big network within the local community, we are in networks with other Neighbourhood Houses, but I guess generally the Neighbourhood House network is basically, exists to promote the needs of people who are less advantaged…[22: 20-31]

---

[45] 15: 40-41.

[46] Very similar comments appear in [8:66-76] about Houses being the third or fourth 'catchment' region for people who did not fit into TAFE and traditional educational structures. See also [3: 51-52].

The significance of Neighbourhood Houses in such communities is supplemented by the following comment, which indicates the connection between the House being a place to go and a place for human contact and care, in a rapidly growing outer housing estate where family breakdown is an issue:

> People are in low socio—you know all that sort of stuff, and there's a lot of mums around here, that there's a lot of family violence, that we really don't know about, and I see some mums come in here, and I know that they've been through hell the night before, and if they want to talk, they will, they'll come in and talk to me, if they don't want to talk, they'll just keep their head down, that's fine, but they know, I know, every person that walks through that front door…We're really a referral place, we do try and refer people on, we want to, we want to build it up to be the focal point of —, and a referral centre. [6: 103-113]

One worker used the evocative trope 'elastic' to describe the type of community the Neighbourhood House represents. Such a notion of elasticity presents opportunities for the Neighbourhood Houses, through its value set and use of resources, to work through the dimensions of time and space in local communities and beyond, imparting care. This particular Neighbourhood House is placed along a busy highway, with many people driving, rather than walking to it to access its services.

> It's an elastic sort of community in the sense that we do provide services very much for our local community here, however, when we've done projects and things like that, our community becomes quite a bit broader, and also the sort of developmental stuff we might do as groups of Neighbourhood Houses certainly has a wider sense of community than just like — and —, that, you know very local sense.

> I think that's always been the way it's been in my time, you know, we've had people who are maybe just down the street or across the road or whatever who access the services, but then we've also got that wider breadth of people who might come from some you know the other end of the municipality which wouldn't be really part of our neighbourhood but part of the community. [11:51-60]

Forms of community management

A number of interviewees indicated changes in the value set and practice of some Neighbourhood Houses under the influence of new management practices (see above, p.

54), though overwhelmingly, a community and client-centred approach appears to prevail. Some interviews were within large agencies within which Neighbourhood House work was one component and managed separately by the coordinator as part of a larger more corporatised community services organisation[47]. A more managerial approach has been adopted by a small number of coordinators, who see themselves as becoming business managers of centres with multiple programs and sources of funding across a range of different service delivery areas (e.g., community education, child care, adult literacy, counselling). Three of the four who took this approach managed larger Neighbourhood Houses. The change in management perspectives can be contextualised within the historical development of Neighbourhood Houses. Some began with the simpler process of 'exercise book' systems of management, and this mode of operation was nostalgically raised by a number of coordinators (for example, see the discussion on p.252). And at least one interviewee was concerned that her organisation not to be dominated by 'balancing the books': her organisation was not concerned to balance the books for her programs, particularly since the funding was only made available to support her for two days a week paid work[48].

The following illustrative extract is from a coordinator who has at least 20 years of involvement in her local community and networks, with a decade of teaching before that. Perhaps the experience of what works and doesn't work in a large centre with much different accountability has led to this shift in attitude.

> We're very fortunate in our staffing, we have a centre manager, we have community coordinator of adult education, paid professional reception admin person because we think it's very important to have someone with knowledge of front of house, we're a business we're not on a mission of god to save the world as was the philosophy of neighbourhood houses a number of years ago. We have a business, you have a mission statement, you have a strategic business plan for three years, you have the flexibility to respond but you don't have to respond to everything because you have that information and referral knowledge so if someone comes in and says I have nowhere to live.
> [24: 333-341]

---

[47] For example, interviews 4 and 7, and interviews 17-19 and 26 were with workers funded in co-located literacy programs who nevertheless, were able to offer considerable insight into processes of technology adoption and Neighbourhood House culture.
[48] 7: 244-248.

Another interviewee, who had come into Neighbourhood House work from a completely different field, approached the problems of management from a strong concern about risk accountability and theft, something that had not been raised with me in any other interview, though from my own experiences, I knew of such problems in community-based organisations:

> I think that the increasing amount of risk, there's an increased amount of responsibility but I don't think that that—but there's still, committees have always been open to you know people stealing money and staffing issues but I just guess it's become more complex because the issues are more complex in terms of the accountability is more complex. I think the perception is that it's all—the perception is that ah—it's a Neighbourhood House, it'll be fine, everybody works well, it's all lovely jubbly, but the reality is that—I don't think anybody should trust with complete — this kind of contradicts what I said earlier about trust and technology—I think every committee member should treat their employee i.e. their manager and employee with a level of objectivity. [15: 367-375]

The other interviewee who discussed the influence of a more managed approach was asked if she felt that she was being controlled through new technologies and different financial and administrative accountabilities. She has a background in business, and observed that:

> No, I think you've got to work within timelines, and that they, if you're running a business, and that's what you've got to realise, Neighbourhood Houses now are mini-businesses, and that's where I think in the past it was more of a recreation, social, drop-in centre…and we are all competing against the same amount of money, I like it in our network here and I'm quite happy talking to the other Neighbourhood Houses [about funding issues]. [12: 199-204]

Another informant from a large agency noted, however, that despite the management and administration involved in running the publicly-recognised computer support programs at her centre, community development was still a central function and value set of the organisation:

> Managing and a computer lab that is at a good quality for the people that come in means that it takes a bit of management, it takes resources from the house, the house needs to designate resources to it, so its part of my job of course, its part of the committee of management in managing the finances so that we're able to maintain it, it's the fact that we've got a volunteer who's designated…I suppose the values that we have of people enhancing their skills, coming in

to do a particular program but also then coming, coming into a house that incorporates the whole platform of community development, so we just don't see one of our students come in go to computer class and walk away again, there's much more interaction than perhaps if you were going to—I don't know—some commercial situation where you just buy a service. [11: 67-78]

The tension inherent between the need to manage well and preserve community values was discussed by the representative of the Neighbourhood House peak organisation (ANHLC) when interviewed:

The whole issue of community business versus organic process is that one in the sector we need to address and to talk about, and I call it building the bridge between the managerialism that is you know, has come out of the 90s and the Kennett[49] era, and the old-fashioned community development values that are part of the sector, so I think I think that's an issue that in the next few years we'll be working through and discussing in the sector, because I think that there's merit in both…a melding of both those ideas of community business and running a community business, but also thinking of the values and the community development focus and the organic process, so I think that having both is really important. [25: 23-31]

Another informant, whose Neighbourhood House work was part of a larger organisation, still put community, rather than business accountability at the centre:

We're still very much, I mean, my programs run at a loss, and that's accepted in the organisation, and that's almost necessary, because…it's what the community house is all about…the community house doesn't get money to run programs, its gets money from DHS to have me for two days a week to attract money, so by design we shouldn't be making money anyway. [7: 244-248]

While an orientation to business accountability can result from organisational growth, is the difference in styles and attitudes more attributable to personality, with some people being more oriented to business practices than others? The causes for this are complex, and beyond the scope of the current research, but at least three of the interviews raised the factor of personality affecting the character of a Neighbourhood House's *modus vivendi*. Given the long tenure of many coordinators (or at least those in the region where interviews were conducted), this in fact, may be a major factor contributing to the long-term character

---

[49] The neo-liberal Premier of the State of Victoria at that time.

of Neighbourhood Houses. Whether or not such tenure effects are characteristic of a wider range of community-based organisations is something worth further exploration in future studies. Thus, one coordinator said of her small, purpose built centre:

> The values I think and I would argue with lots of people, and I don't know what your experience is. My experience of going into various Neighbourhood Houses and community centres is very much personality driven—whoever kinds of runs that centre, the coordinator, fairly much takes the flavour of them. Now, if you have what I call old left-wingers and middle-aged menopausal women who still maintain their rage, um I think this place, I've had the same staff since I've been here, no matter how much I try to lose them [said ironically], very much, um, this is a tiny little Neighbourhood House as you can tell, and um, we have to work, and we do, this is the most cooperative, the most honest, upfront…culture. [5: 39-46]

Another informant, however, disassociated her *personal preferences* from the need to build a strong service. This might be associated with the fact that unlike most of the interviewees, she did not live in the same community as her centre:

> I used to live here, I don't, in terms of familiarity with this area, I lived in this area for quite a while, so I'm familiar with it. I don't think it necessarily matters that the manager doesn't live locally, for me I like it, to be able to drive away from it, I don't want work in my face when I'm not working…[I] think often centres are associated with their managers, like I know of that I guess it's not about building a profile for me, it's about building a profile for the centre, and that I just happen to be the person who does that [15: 61-70]

The power inherent in being a manager is also potentially negative, as noted by one coordinator when I prompted discussion by noting that Neighbourhood Houses are thought of by many as 'welcoming':

> I use the word welcoming to some degree sarcastically, because we as coordinators…we can make people as unwelcome as we like, we can make them as unwelcome as we like, we as coordinators have the opportunity to either create an environment that is positive…or we can isolate that individual and isolate the situation to make people feel a little bit uncomfortable and they won't come back, and we, I have struck that a couple of times with the [*Name of Project*]. Yeh, look, too hard basket. [8: 206-212]

'Not an ideal place'

Any idealism about Neighbourhood Houses needs to be tempered with the realisation that they don't meet the needs of all people. Despite the best of intentions, some interviewees said that some Houses are still not known in their communities, and people sometimes don't know why there are there. This lack of knowledge can result in quite negative perceptions of Neighbourhood Houses in the community-at-large and in government (see p. 72). Thus, while an embracing community value set makes sense to those who feel strong ties to the community, the people who have these values don't necessarily have links to people with weaker ties in the community, even though their needs may be similar or even greater (Granovetter 1973).

Thus, weak ties can lead to misunderstandings. For example, negative perceptions by residents of the effects of community centres in new housing estates included a fear of the presence of drug uses or antisocial activity associated with youth discos and noisy community events that involve outsiders—including strong resentment towards outsiders parking in the area of the Neighbourhood House[50]. For those with a commitment to Neighbourhood Houses these perceptions appear outrageous—yet the problem is how to connect to people with weaker shared values and ties who believe such things. However, it appears that over time, Neighbourhood Houses can be accepted in their communities, once people realise the usefulness of such facilities. One interviewee spoke of the social fragmentation in her housing estate some years ago, but now, the centre, as a physical location, was now well-used and well-loved (see p. 223). Positive bridging and bonding effects of social capital (see above, p. 77), were well in evidence. This was an unusual way to talk about a building, but she commented:

> There's a lot of centres that go up when these centres are being built, I know of many and I won't name them in case those centres wanted to be named, but there's some who people will work tirelessly to have them shut down, they don't want them in their neighbourhood they don't want them in their street because they don't like people coming and going at night and this you know they don't want Blue Light discos [*Police-Youth social events*] happening while they're living across the road and that, I think here it was never the case. It was purpose built by council in '91,

---

[50] 1: 145-161; 2: 107-118; 14: 45-52.

I think it was and of obviously, I wasn't around then, but people embraced it immediately and it has been well-used and as I have said well-loved. When the doors aren't opened, people just can't understand. [2:110-118]

Another informant, also commenting on resident hostility in her new housing estate, said that in response to my query if there was at least a church in the new estate where her House is located:

No, there's nothing, absolutely nothing, so for the first 12 months it was an absolute nightmare here, because people didn't want me here—the community didn't want us here, but we're slowly, slowly people are realising that it is nice to be able to walk to your Maternal and Child Health Nurse, or your local play group or your kindergarten. [14: 47-52]

For such residents, using facilities such as childcare engender some confidence in facilities such as Neighbourhood Houses and in turn, a way of getting to know other people in the community. However, if such involvement does not occur, the likelihood of social bonds forming is low unless they participate in other social activities in the Neighbourhood. As seen previously, the reason for low degrees of involvement appeared to be the 'stepping stone' nature of the housing estate in which it was located: families moved on and were not committed to the area[51]. Certainly, as I observed in my field notes, the new estates were both isolating and disorienting, with some new streets not named in my two-year-old street directory, and one estate had back fences facing the main 'drive', making the area deliberately uninviting. Closed blinds and garages line the streets. For one worker, the relative isolation of new estates, stretched along the highway, resulted in a mental barrier, making people uncomfortable with intruding into other new estates down the road. Getting to know one's neighbours can be a challenge at the best of times, so it is to be expected that in a new, essentially commuter community, this social task is somewhat intimidating for many[52]. In 1864, Charles Dickens evocatively called the world of London's mushrooming

---

[51] 4: 304

[52] 9: 19-22.

housing estates 'a tract of suburban Sahara', and his description of the physical and psychic incertitude in such environments still rings true[53].

It is suggested that 'pride' by first home owners and a strong sense of independent territoriality might contribute to resistance at activity beyond the quarter-acre block. The stress of just establishing a new married relationship, having kids, and keeping down a job is probably almost too much for many people who have great expectations. Getting involved with neighbours who are strangers—and who may have the same, hidden challenges—might be too challenging in an increasingly time-poor (both partners working), and individualistic culture.

Despite the physically pleasant surroundings, a focus on individual needs and daily concerns (such as paying the mortgage) does not permit people to move beyond a sense of individual to collective social 'goods'. A critical mass for aggregation at a social and formalised level in such a place as a community house has not come into place (Arnold and Gibbs 2003). The status fragility such people feel can lead to apathy or a sense of invasion (Carmon 2001) by outsiders and potential 'strangers' (i.e. the Neighbourhood House users). The sense of place in location has not yet incorporated a shared sense of belonging and communion with other people, with the neighbourhood starting to symbolise 'aspects of everyday experience, territories of memories, symbols and associations…centres of being and belonging that connect people with their world' (Relph 2001). Of course, some people may regard the estate as nothing more than a dormitory to somewhere else, and their social connections lie elsewhere.

---

[53] In one estate I immediately thought of a passage in Charles Dickens' *Our Mutual Friend* (Chapter 4). R. Wilfer is a struggling clerk for the chemist firm of Chicksey, Veneering, and Stobbles. 'R. Wilfer locked up his desk one evening, and, putting his bunch of keys in his pocket much as if it were his peg-top, made for home. His home was in the Holloway region north of London, and then divided from it by fields and trees. Between Battle Bridge and that part of the Holloway district in which he dwelt, was a tract of suburban Sahara, where tiles and bricks were burnt, bones were boiled, carpets were beat, rubbish was shot, dogs were fought, and dust was heaped by contractors. Skirting the border of this desert, by the way he took, when the light of its kiln-fires made lurid smears on the fog, R. Wilfer sighed and shook his head. "Ah me!" said he, "what might have been is not what is!"'

Chapter conclusions: 'People first'

Neighbourhood House work is imbued with values of inclusive caring and support for people in the community that tie into time and space-bounded networks of care and the bundles of activity . 'People first' is an expression used by at least one interviewee[54]. However, for some workers, there is a contradiction between community-focussed activity and more managerial or business models of operation. Thus, it is possible that some coordinators' roles are in fact in a period of transition from being community enablers to community-based managers.

Whatever the case, Neighbourhood Houses are seen as local places which embody local community engagement, particularly through the long-term presence of their coordinators who know people and place well. These relationships are 'elastic' (see p. 227), capable of transformation and elaboration to serve different needs and groups and the community. At the same time, in some communities, where the bridging and bonding ties are weak, these feelings may not be more widely reciprocated. Thus, acknowledging the particular circumstances of each Neighbourhood House, the concept of elasticity hearkens back to the ideas of the time-geographers that there are variable stations and boundaries, some of which have a 'leaky' extensibility (see p. 171), and link to different activities and movements of people through the activity in everyday life.

By extension, Neighbourhood Houses can also be understood to be a physical manifestation of 'memoryscape', in the same way that a school, religious institution, or club, with its photos, documents, or arrangement of rooms can be seen to embody and provoke a particular set of collective memories and emotional responses (Halbwachs 1980: 50ff) within a particular locale that acts as a gendered station or stopping point (*pace* Hagerstrand) for the production of particular activities (Giddens 1984: 119).

---

[54] 19: 245-246: 'we put our people first as opposed to our income'.

10   Technology as an instrument: 'Once I started, that was it'

Introduction

The discussion which follows explores the implications of different understandings and degrees of agency with technology. The data is rich, and gives rise to a number of concepts and theoretical speculations which inevitability hearken back to the earlier literature review. The interviews explore how people conceived of, and used ICTs (particularly computers and the Internet, though there is occasional reference to other technologies such as the mobile phone).

The data reveals that ICTs are only one part of a concept of technology held by workers—adapting the viewpoint, as developed in human services literature, that technology is constituted by a basket of different skills and processes in delivering 'services', embedded in 'technologies of care' (see p. 87). People's (in this case predominantly women's) relationships with ICTs are also explored through the perspective of Actor Network Theory as means of re-embedding ICTs into a deeper and vivified network of relations and processes that constitute people's information and communication networks. ICTs have become domesticated at work and at home.

Technology as a material instrument

From the perspective of the interviews, ICT artifacts are not the central point for their communicative interactions and transactions—rather, human interaction, problem-solving and support, in the context of a technologies of care—are the focus of human agency. Domesticated technologies become the tools for a*ctivities* facilitated by the ICTs (Singh 2001: 409). They are used to productively support the network of relationships and action that come to characterise Neighbourhood House work within particular locales or beyond into their communities and other organisations. As material tools, ICTs are regarded instrumentally, as something to be drawn or worked upon unthinkingly as practical tools.

The generally simple language used to describe technology includes terms such as 'just a tool', or 'a great typewriter'. The relative paucity of more complex statements used to describe relationships with technology perhaps suggest that much of the understanding of the relationship is based upon *practical, tacit,* and *unconscious* forms of knowledge that are not easily articulated or, the language used to describe this activity has not (yet) become part of common discourse (Giddens 1984: 7ff.). Doing and showing are likely to demonstrate more of the process, reflecting the particular orientation of the actor. Most people are not familiar with having to explain how and why they use a particular piece technology such as email, or Microsoft Word. In several of the interviews, I realised how difficult it was for people to describe what they did and thought about technology, particularly since it was not the psychological centre piece of their work lives, though misleadingly, the computer screen often sat in the middle of the desk. The physical presence of the machine can lead to an analytical mistake on the part of the researcher (and at a distance, the manager, policy maker, or information systems specialist), in interpreting the physical or virtual presence of ICTs procedures and processes as constituting the *actual* dominant workplace presence, when this may not be the case (see also p. 262) [55]. The informants' stories which follow illuminate different dimensions of the relationship between people and machine through the workers' ordinary language.

Useful tools

A simple materialist view of ICTs, as a thing that is worked upon for the production of different goods and services, is expressed in statements such as the following:

---

[55] Thus, in a comment to one interview: *So is technology in general more than just being a typewriter?* Yes, yes, it's a tool…a special tool, more than a hammer and nail'. [12: 335-337].

My file note comment prepared during the transcription process was : 'Does the abruptness of this answer—as with a number of other things, say something about the very practical nature of the knowledge—we do, don't describe, so it is just the tool—taking up Giddens on practical knowledge. The truth is that such practical knowledge contains an enormous and complex range of doings based on a full range of skills and knowledges that we DO, but don't talk. I suspect too, that because we don't document it, and LIVE the process, our memories of before/after a particular technology are generally weak—and can we always compare before/after when our lives and jobs have changed—we aren't by and large doing the same as we were doing 10 years ago (is this the case for Neighbourhood House workers, however?)'

> I think it's a wonderful tool, and that's all it'll ever be to me [8: 339-40]

This interviewee, earlier in her interview, also indicated some dimensions of the agency that this 'wonderful tool' provides.

> I use IT as a tool only, I don't use it as any other, do you know what I mean, and we use it to create wealth [8:225-227]

For another person, the computer is depicted as a sophisticated typewriter, a sort of typewriter with increased functionality:

> It's just having a great typewriter, it gets my work done really quickly, if I make mistakes, I can quickly fix them on it, but that's it, I'm not interested in anything else in it for having to retrieve the information I need for my funding bodies, and keeping in touch. [2: 516-519]

As tools for linking with others, ICTs can be conceived of as artifacts that contribute to generating social wealth and capacity for the community through more efficient forms of communication. This is reflected in a statement from another informant about the characteristics of a technology tool that are secondary to human technologies and interactions:

> I think we work from … ethical base and we're a business, it will be a tool that can be used because it's going to be cheaper and profit making, we have a different, that profit thing is different to us, that contact is a more important thing while it'll be a tool that will help us get through our work day I don't think it will have any major effect on what we do as we deal with our clients. [19: 219-223]

Such a viewpoint is given further depth by the comments of this informant:

> Working with people, which is what they are all about. We're here for the individual, we're here for the groups, we're here for the community, we're not here for IT's sake or for the sake of computers. They're supposed to be a tool for us. [8: 360-362]

For such people, the human and humanising affects and effects of the mixture of human and artifactual technology are primary, and, as stated by the informant above, 'contact is a more important thing'. ICTs are only one element in the networked process which brings about better lives for people. For the following interviewee, coming from a community

education perspective, ICTs are framed within the context of community and group learning rather than individualistic, one-to-one communication:

> Yeh, it is a learning tool, but it is that kind of opportunity to expand your world through that tool, you know for people who've come from other countries to be able to email their relatives or use you know—I was involved in a chat with a microphone…[17: 282-285]

And another speaker indicated her personal preference for co-present communication, giving ICTs an emotional put-down in a strong statement about the inert materiality of the computer to her:

> I've got no emotion toward my computer—some people here do, they love it, my husband has an emotion toward his computer. No I don't. I like the [unclear] direct contact, communication, and talking, I like meetings, and I like that exchange of the body language, the whole thing. I think you get more information from that than the written word on the flat screen. [24: 230-231]

Yet the apparent emptiness of technology only represents part of the story. It could well be that the apparent difficulty of talking about technology reflects the directly material approach that we have to tools: they are generally viewed as a space or object to be worked upon with limited effects. Thus, the computer is consciously viewed as a sophisticated typewriter, allowing for certain efficiencies, but not much more. However, from a sociological perspective, it is much more than that.

'Why is it hollow? Let's explore that'

The relatively simple ways that ICTs are generally described, reflect, I believe, the difficulty of explaining what they are in anything more than an instrumental way, when *use* is the focus of attention, rather than *active reflection and articulation*. However, there were some exceptions in the interviews, and at least one informant was able to provide a greater degree of depth in her comments. This woman has a background in teaching and explaining art and design, which perhaps explains her capacity to explain the creative process in some detail.

Talking about the genre change which has occurred, in moving from paper and pen to screen design, she expressed a high degree of awareness about how ICTs had seemingly

removed the need to know and understand the meaning of the actual typography itself as a psychological and physical act of creation. Automation has eliminated craft, or so it seems:

> What I found with the computer was a, a tool that people took and substituted for you know, design skills. That's changed, what I do now, I still think people produce shit graphics, crap visual stuff not based on, they produce, you know, they do work or they design with huge amounts of text without any understanding of the relationships between text, between letters, what they mean, the powers of them, the lack of power, whatever, um, what they do is have a program that will squeeze it out for them…it has wonderful special effects, that's fantastic, if you love, if you had the bad taste to love Titanic [*a particular font*?], that's great, good that you like that, but the special effects didn't actually take away from the underlying reason it's maybe a hollow thing—and why is it hollow, let's explore that and that's what I try to do with design. So yes, great tool [5: 154-170]

The computer is a material tool, but it has potential, immanent in its materiality as a dumb object. However, this potentiality needs to be explored in more than a purely instrumental sense, for there is a danger that human and creative capacities can be subsumed in an unthinking use of a new tool and genre (from hand-work to computer-work). For the informant, there appears to be a power of creativity that should emerge in the text and letters, drawing upon the speaker's understanding and experience of graphic design. Visual objects (fonts, words, graphics), are not just created, but embedded in particular aesthetic contexts that have different meanings.

Our informant's experience with design is transferred to the computer as a creative tool, but a tool that operates under her rules. She regards the material computer as a 'hollow thing' which is somehow to be explored—its agency *provoked*—in order to fulfil this potential. This 'hollowness' is a powerful metaphor for understanding this potentiality amongst all computer users, for while software and hardware designers can have one set of intentions which come 'shrink wrapped', what people think and do in response to their particular skills and capacities (such as that of graphic design) can be completely different in intention and outcome**.** The 'hollow thing' is a new life-work project, something to be filled by a person situated in his or her particular environment. The photo below seemed to exemplify some of the complexity of the informant's views and actions about technology. On the one

hand, there was a resistance to being taken over by screen-based graphic opportunities, but on the other hand, it was fully exploited by her in her production of artifacts for display.

Figure 26. Computers: They're like nothing else, the same as everything else

The complexity of the interaction is underscored by what the informant next states, though the primary trope is still 'just a tool'. However, it is not deterministic relationship on the part of the technology—thus, as she says, 'they're like nothing else, the same as everything else'—really unable to decide or accurately articulate just what the computer is to her. She is struggling to find a place, a definition for the computer as a material object. The apparent contradiction in her statement can be interpreted as an attempt to explain, in ordinary language, the immanence and contingency of ICTs.

Their essential thing is [that they are] all tools; they're still just a tool. Now this tool has opened up um all sorts other issues, like people being able to empower to get information. It's also, there's ways like any tool, is always controlled as well, it's … by the people whether it's Mr Gates or whoever is actually controlling these who owns them—ownership…They're like nothing else, the same as everything else. [5: 265-283]

Her struggles with explaining the implications of the 'hollow thing' are reminiscent of Heidegger's reflections on the 'being' of artifacts. The 'handiness' of the computer, what Heidegger calls *Zuhandenheit,* refers to its potentiality as a useful thing, as something, but that usefulness needs to be drawn out by agency. Its particular 'built' properties are not inherently obvious. That potentiality is:

[E]ssentially 'something in order to …'. The different kinds of 'in order to' such as helpfulness, usability, serviceability, handiness, constitute a totality of useful things. The structure of 'in order to' contains a *reference* of something…In accordance with their character of being usable material, useful things are always *in terms of their* belonging to other useful things: writing materials, pen, ink, paper, desk blotter, table, lamp…These 'things' never show themselves initially by themselves, in order then to fill out a room as a sum of real things…A totality of useful things is always discovered *before* the individual useful thing. (Heidegger and Stambaugh 1996: 64)

In the process of discovery of the 'hollow thing', a human agent acts upon a capacity to communicate or create genres in new or different ways with ICTs; to assemble and reference the parts to the whole; the choice of words which constitute an email, the response to the email; the options of plain text or html formatting; the preferences in the particular email client used to send the email (e.g. with or without a signature, return receipt or urgency flags); or the corresponding personal relations that are engendered through the email. Furthermore, that email can be used within the context of technologies of teaching, learning, or community development as part of a larger totality of an environment of technologies of care, through the individual's agency. This multidimensionality of the creations of the hollow thing is also reminiscent of the insights provided by the Monash Information Continuum, where an object (a document, a file, an electronic object) can be re-processed in multiple ways for different purposes and audiences (see p. 45).

However, despite the extensibility (see p.159) which technology offers, from a critical perspective, unthinking use (that is, computer use with a pure utilitarian materiality) is inauthentic, unethical, and does not constitute proper *Zuhandenheit.* In fact, according to Ferris, one of the difficulties in Information Systems design has been to articulate *Zuhandenheit*—the condition of being or 'fit' of something in its relation to other things—together with the tangible materiality of 'stuff', known as V*orhanden* or objective and present-at-hand qualities in Heidegger that constitutes a system (software, wires and boxes) (Ferris 2003), and is more than the representations of particular, defined reality embedded in text editor instructions that then run software (see p. 190). The clarification of authentic use that occurs with *Zuhandenheit* means that the computer is *consciously understood* and *produced* (in the sense of machine-human activity), as part of an assemblage of human and artifactual relations that constitute authentic activity.

The idea of authenticity in fact resonates with some of the early thinking about the process of personal computing and this connection is worth reviewing. Doug Engelbart was involved with the early development of the personal computer, including the invention of the mouse. Englebart's extraordinary meditation about the potentialities of the 'augmentation device' for human intellect needs to be reconsidered:

> By 'augmenting human intellect' we mean increasing the capability of a man [sic!] to approach a complex problem situation, to gain comprehension to suit his particular needs, and to derive solutions to problems. Increased capability in this respect is taken to mean a mixture of the following: more-rapid comprehension, better comprehension, the possibility of gaining a useful degree of comprehension in a situation that previously was too complex, speedier solutions, better solutions, and the possibility of finding solutions to problems that before seemed insoluble. And by 'complex situations' we include the professional problems of diplomats, executives, social scientists, life scientists, physical scientists, attorneys, designers—whether the problem situation exists for twenty minutes or twenty years. We do not speak of isolated clever tricks that help in particular situations. We refer to a way of life in an integrated domain where hunches, cut-and-try, intangibles, and the human 'feel for a situation' usefully co-exist with powerful concepts, streamlined terminology and notation, sophisticated methods, and high-powered electronic aids. (Englebart 1962)

Englebart's research was prepared for the American military within the context of the cold war and the drive for technological superiority over the Russians. Notwithstanding this

context, and the masculine tone of the extract, with its 'professional' focus on a particular form of problem-solving ('we include the professional problems of diplomats, executives, social scientists, life scientists, physical scientists, attorneys, designers'), his trope of 'hunches, cut-and-try attempts, intangibles, and human feel for a situation' is evocative of an attempt to integrate technology to match human needs, even though such needs were originally around a very particular cast of mind and class of men (and for feminist views on the gendering of technological design, see above, p. 123).

Consider again the contradiction felt by our informant, an artist and community educator, struggling to contrast the things that a computer can do with her own intuitive and creative practice—her embodied technology—structured in a particular material, place and time-bound environment engagement with teaching, learning, and other people-centred activity. As I observed in reviewing earlier literature (see p. 182), her interpretive and normative orientations (from a structurational perspective) do not match the designed intentions of the designers of Microsoft Word or particular graphics packages (a form of Englebart's 'integrated domain'). Of course, it may well be that there will never be a perfect match between the particular embodied, embedded situation of the user in particular class or time/space constructions and the more distant world of technology design (even social software cannot replace personal communication), but the reality of the continuing possibility of disjuncture is a sensitising device for assessing expectations of how technologies (personal and artifactual) intersect in different settings.

Another approach to our informant's views involves the concept of automation and its implications. Automation and augmentation (in this case, the computer program's algorithms presented via the screen) which result in formatting, fonts, colours and so on, is a process which has the potential to destroy creative authenticity in art and communication, whether through the use of a prepared typeface, or skipping face-to-face contact through sending an email. In the case of our informant, automation potentially negates the creative act which she understands typography to be. The authentic essence of art, and by extension, communication, is degraded in the process of mechanical reproduction (Benjamin 1992) .

Heim offers further insight into this process, through his meditation on word processing. For Heim, *manipulation* represents the first level of activity, which goes back to the programming of a computer, the arrangement of symbolic domains of language and expression (Heim 1999: passim and 126). Automation of activity can lead to 'enframed' activity on the part of the user, (for example, stuck in a particular spreadsheet format or font size, rather than having a more free-flowing capacity to manipulate the system controls). The restrictions put upon the capacity to change the software can prevent the capture of 'non-conforming' data or knowledge in the pre-formatted box of a spreadsheet (For example, in Microsoft Access, phone numbers are preset to American codes, and it is a frustrating experience to try and change the underlying rules for what should be a simple operation to internationalise the fields). Second, formulation describes the effect of the computer as a symbolic environment (worked through code, represented on screen), which 'fosters a certain presence of mind' (perhaps one that focuses attention on the screen, rather than the teacher). The formulation of writing (and by extension visual objects and other processes on a computer) is bounded by that screen presence and capacity. The extension of that screen—the machine agency—is found in the example of a community worker focussing on formatting a document to the detriment of a community development exercise, discussed previously (see p. 181). Finally, Heim speaks of *linkage,* 'the psychic environment created by the networking of all symbolic life in a homogenous information system', which can affect the creative capacity of individuals, akin to the disciplining effects of technologies raised by Foucault and Rose. The question thus becomes: is an authentic act of writing or graphic design only possible with the computer today? Our artistic informant is engaged in a struggle for her creative authenticity, and that of her students, so that they are not subsumed to the perceived and potentially actual strong effects (using Actor Network Theory) of particular material technologies.

'You have to have to put it into perspective': Degrees of Machine Agency

When I questioned informants as to whether the computer or other technologies (such as mobile phones), 'controlled' their work lives, few of the interviewees articulated an anthropomorphic model of their relationship with computers which indicated an

overwhelming attribution of strong agency (see p. 179), though some indication of the personalisation of computers came through in some of the interviews.

Do you ever think that the computer's actually alive, like a person?

Yes, I talk to it, I curse it, I hit it, and then I also say—you're beautiful baby [*all said with a bit of a laugh]*. [12: 249-252]

Strong agency—and the capacity to resist—are reflected in such comments as:

No, I won't have a mobile, no, it's like your bad guardian angel, it goes everywhere with you, I couldn't stand that. If we're going out to a meeting…we always put where we're going, we have a book here and I put the number in, if it's an emergency, they can ring that centre. [24.71-75]

At least one person was aware that the language used with computers has implications about the agency imputed to them:

I do think it's a funny time of history, when as soon as I walk in I open the computer, I think that's funny…I'm sometimes conscious that the first thing I do in the morning is log on, and even the language, you know…[3: 289-305]

The following quote should also not be taken literally, but as an expression of the extreme utility and ultimate dependency that the machine presents:

[P]robably I love my computer you know and it's in constant use, every day…You have to love it don't you, because it's your life line, if it's not there and it's not working, I am in heaps, because everything I possess is on that machine, and if it goes down, I'm a goner, because we only have two in the whole building…[2: 131-138]

This apparent dependency is also reflected in the 'lifeline' attribution used in this statement, as the computer has opened up various efficiencies:

Uh! There's three of us who share this one [computer], and there's one down in the other office that's sole use. It is my absolute lifeline I must admit, yes, it means stats and reports and all that sort of thing that you used to get in proforma sheets from your funding body, I used to sit and handwrite out prior, um of course communication has opened right up with the Internet and having you know email and I think it does it cuts an awful lot of time out on the phone I find. [2: 147-152]

The next extract highlights the ambivalence that can be felt about computers as a connecting medium. The computer has become a necessary evil that can be managed through personal action. It is incorporated into workaday practices and home-based technology practice:

> [T]here are good and bad things about the computer, as long as you get it in perspective and as you say don't let it control your life, and that's why I was quite pleased when I made that decision that I will only go on email for an hour each day and cope with what I can cope with, and come off. I just find that the computer can be very intrusive, and you have to have to put it into perspective, so but in relation to accessing you know DHS websites and a whole range of issues and data, I think that it's absolutely wonderful. I do notice now my son was doing an assignment yesterday on Gandhi and he had the Internet up…What's the library mum [*laughter*]? [14: 332-348]

From this point of view, the working 'terrain' of the Neighbourhood House worker (in the office, or at home) isn't a *tabula rasa*. It involves active agency, and the capacity to have, as the interviewee says, 'perspective', which alludes at the extensible dimensional aspects of agency discussed previously with the context of the modalities of structuration (see p. 72). Neighbourhood House coordinators have the skills and control to decide where when and how various instrumental technologies (including artifactual technologies) are used, whether at work, or home. From this perspective, Neighbourhood House workers, as active agents draw upon the authoritative and allocative resources enabled through ICTs to enable community agency, as this worker said when talking about how bureaucrats work with her electronically:

> Look, this is what I have to say, because the reality is that email…they'll read it and put it aside and may not hear [unclear] it again, and it's the same as with a letter, but as a—you've got something to say and if you need to get it you go and knock on his door and say I'm here and I'm going to sit on your desk until you listen to me, and I don't think that will ever change as far as Neighbourhood Houses are concerned, that's just the way we've operated, and I think it's the way we will continue to do it. [19:229-235]

As examples of power being used at the micro-level, several coordinators specifically mentioned they were capable of deciding priorities about phone calls, emails and documents as a way of controlling communication and information flows and that they

were capable of adapting to new demands[56]. Such responses are certainly characteristic of decisions about the use of particular interpretive frameworks and means of communication, as expressed by one interviewee:

> We all have interpretive skills to be able to interpret anything that comes out of that computer…and because we sit around and talk about it, if someone has a gap … addressed straight way'. [23.250-252]

This latter comment is enlightening in two ways. First, it suggests a strong degree of agency with the machine, but second, there is also a continuing strong degree of *communication with* each other as workers within and between particular Neighbourhood Houses via the dimensions of time and space, (thus producing interaction between co-presence and distanciation mediated through ICTs). The continuing salience of tacit knowledge and skills cannot be simply categorised or calculated into a particular format for electronic communication. The capacity to do otherwise through the power of human agency in response to unforseen circumstances, against any particular electronic calculation or framing is a human protest against the 'typifying and systemising' of technologies which can constrain human action, with the potential that all things are at the 'beck and call' of managed information and communication (Heim 1999: 80). Englebart's 'augmentation' for an 'integrated domain' does not cover all circumstances. Instrumental or pragmatic use is not universally definable nor easily predictable and solvable as a mere 'technical' problem.

Structural forces

As an aspect of the exploration of agency, I also explored whether or not people felt controlled by greater structural forces in charge of the technology and whether they had 'trust' in technology. I assumed that an investigation of attitudes about trust and control would lead to an effective interrogation of the notion of the agency of technology. However, the concept of 'structural forces' appeared to be too abstract in my questioning. Discussion ranged around more mundane, day-to-day interactions with technology.

---

[56] 14: 335; 15: 275-278

If technology is trusted (reliable), then it can be incorporated into everyday life. It is an essential, and ordinary, part of the process of work (and with the incorporation of technology more broadly, home) activity. This explains most interviewees' lack of concern or awareness about potential power issues involved in technologically constructed relationships. They don't extend a political analysis of the world to the world of work. For example, I asked one informant about her trust in technology. She answered:

> Well I think you have to, have ... trust in technology…you die at the thought of it ... breaking down. I mean that's how much how dependent we've become so I think if you weren't— in any job. [22-147-149]

When I then asked her if she had sense of greater structural forces, such as government departments and funding agencies using technology as a means of control and if technology was a factor in that relationship:

> I just don't think it's positive or negative, I think it's just an essential... I think technology's just an essential tool now, it's not—it can be positive and negative…but I think there's no point in them trying to sort of define its role anymore, it's a part of the way we live and you know whether you like it or not I mean it's there, and it's a given now….it's like mobile phones and all that sort of stuff. [22: 153-157]

Her response, that technology is now an essential tool, that is part and parcel of modern life, now appears to typify the informants' responses.

Additionally, informants felt that they had agency, though a number felt constrained by technical difficulties with the technology when they were not able to problem solve. In fact, after several initial interviews, I realised that when asking people about 'trust in IT', they were interpreting this question as one about trust in *technological reliability* rather than a concern over *security*, or *control* by external agents via ICTs (or by ICTs themselves as active agents) of the information flows or the workplace. Even when I tried to follow up with people in interviews, not much more information about their degrees of trust in communicating with and through technology was forthcoming. Answers were generally brief and lacked particular passion on this issue, perhaps indicating the everyday ordinariness of ICTs. Like a car, things can go wrong, fixing them is annoying, but the

situation is redeemable. If there are problems, people contact IT support staff, or ask a family member for help.

However, a number of people did offer more 'political' analyses of their relationships with technology, but by and large, this degree of awareness and concern was not apparent from the interviews. The following interview was one of the few more articulate responses, and when queried about trust in technology, said that there was trust in technology because there was trust in support staff[57]. Technology was an integrated part of operations, viewed instrumentally:

> I have not real stigmas, look, I've got my conspiracy theories…but look, one of the successes of this house has been the transparency. The reason that we've been successful is, everything, look, I couldn't care if the government reads me emails or looks at them, because all they are going to see is work. And they are going to see ideas, innovation, you know, we brought on the philosophy four years ago of thinking out of the square, years before it became a modern concept sort of thing. I've been talking to my staff, sustainability equals alternative income sources. [13.343-249]

Another informant tried to contextualise the sense that there were forces controlling, within a framework of the Neighbourhood House value set of agency and creativity:

> *Are they controlling you—structural forces out there constraining you, or do you feel free to act?*

> Oh look I think they do, they certainly do, but I think it's that little back left over hippie trails subversion like you kind of work within the constraints of the bureaucratic framework, but you still manage to do things creatively, and I think that's one of the things about working in this field, you do have opportunities to do things in a creative way and you see the kinds of rewards and outcomes in the people you work with, and that's you know—the joy of it…and seeing people connect, seeing people develop, that is very rewarding, and I think that's what keeps people going, you know I know there's lots of sort of frustrations you know in trying to keep all the balls in the air, but you know some days when you look at something happening between some people and you think that's great, that's what it's about. [17:31-90]

Grander pictures or theories of powers of 'control' by external forces were otherwise almost never articulated by interviews, or if they were alluded to, they were accepted as

---

[57] 13: 183.

part and parcel of the characteristic political struggle for the funding and resourcing of Neighbourhood Houses with local and state government, as with many similar community services agencies[58].

Governance

The idea of governance arose in the interviews as a discrete, though not critical issue in the interviews. As noted previously, I had attempted to elucidate the interviewees' concept of 'structural forces' or 'powers-that-be' in the belief that I would be able to garner significant information for theoretical development, but the concept proved too abstract (see p. 248). It was only much later in my review of literature about governance that this concept seemed to cover what was being described by the interviewees. The salience of governance as a concept covering personal and external power relations, such as relationships with government and funding agencies, is particularly useful for considering the dispersed and fragmentary nature of these relationships which in their totality, result in systems of indirect and subtle, rather than direct control. This control is conveyed through a variety of technologies (see the summary in the table, p. 214).

> [Governance] directs attention to the nature, problems, means, actions, manners, techniques and objects by which actors place themselves under the control, guidance, sway and mastery of others, or seek to place other actors, organizations, entities or events under their own sway. (Rose 1999b: 16)

Governance and particularly self-governance (see p. 117) frequently arises as part of the complex set of interactions which Neighbourhood House workers deal with in their relationships. One sensitised picture of events is offered by one informant. The effect of contemporary forms of control is that governance involves staying within a particular loop or practice arena, and email, as a technology and a conveyor of a particular form of

---

[58] The most explicitly political interview was interview 5. Of course, the question arises about words and deeds: while interviewee 5 was explicitly political, a number of other interviewees are highly experienced and networked political operators who would not necessarily reveal their political beliefs and practices to outsiders. Furthermore, their political beliefs may play second fiddle to more *pragmatic* political relationships with funders and others. For Crick, in his classic liberal analysis, politics is the market place mechanism for determining the place of social demands, though in this struggle, 'there is no guarantee that a just price will be struck' (Crick 1982: 23). This, I suspect, is well known to community workers who nevertheless, persevere.

discourse—speaking and responding to a particular tune—is part of that loop. The technology has a disciplining effect on discourse and action.

> It's chicken and egg stuff—they've put us in this position, by saying you can't access information, we don't know when our next funding you know, we don't get any post now, we just get it by email, so what they've done is that we have to play their game, to keep in our game— our game hasn't changed, the empowerment of people hasn't changed, but the way we dance to the tune of the funding body has. We have to, to be able to be part of this, we have to embrace this, because otherwise we are cut out of the loop. Now, if you were really cynical, you would turn around and say is this some, it is the same, or is there an equation with British industrialisation in the nineteenth century, that the corporations rule the way you do things. [5: 242-250]

Much of this is linked to increased accountabilities and complexities in administration, and a change in the functions of the Neighbourhood House. Systems of record-keeping have changed—from the simple exercise book (mentioned in several interviews), to much more complex demands which constrain and frame action:

> In the early days, she'd just have an exercise book, and she'd write in it everything they'd spent, and then they'd add it up, and well, I mean, but then, that was probably all she had to do, and you that, because that's how you keep your records, but you couldn't just give that, then give that to whoever had you know given the grant…and things happened like if you were, people would go to the Neighbourhood House, you know can I start a sewing group, can we do this, and it just happened, whereas you can't do that now, everything's got to just be, gotta have the reason, or gotta have the group, or you've gotta have the insurance, or you gotta to this, gotta do that, and, it just makes the spontaneity really difficult. [6: 250-251]

The demands for such control and accountability are inevitable, part of a constraining governing technology of administration:

> *So you almost get caught up in a technology of administration?*
>
> Yeh, yeh, and the more things you apply for and become successful at the more stuff you have to run. So it's a bit of a Catch 22, and then you don't have time to apply for more things. [7: 230-234]

ICTs offer opportunity, but also become means of constraint:

> It offers us an opportunity to create, to create courses, it offers us an opportunity to create subjects for people to learn and a reason for them to come here, once you've established that you have accountabilities to the funding bodies, unfortunately the funding bodies do not build within their structure an opportunity for us to have that paid for…it's never enough but at the end of the day you try and make to with what you've got, so you take from Peter to give to Paul to make sure that the place keeps going. [11: 117-127]

Thus, bureaucrats and administrators are able to control through the 'formation' of particular categories that are reflected through, and influenced by what can be presented via the technology. A particular discourse format can be developed via electronic traces (for example, spreadsheets or emails), shaped by requirements of the technology as controlled by those in charge—fonts, categories and other structures contained in spreadsheets and other forms then 'managed' through particular timing or submission and response requirements, though this form of control over action and time for action is historically familiar to workers[59]. This control, as detailed in the extensive discussion about one worker's view of technology, is a 'hollow thing' that is worked upon by different stakeholders and can be interpreted as creative or constraining self-governance at work (see p. 239). In the case of Neighbourhood Houses, one of the forms of control is through the use of technology around information structuring to serve dominant bureaucratic interests. When asked if technology, as used by the bureaucracy was controlling, this respondent answered:

> Actually from my point of view now I actually expect them to send me stuff via the email, that we can fill in and send back, so if it's a survey form or if it's information, I get a bit frustrated at time with obviously it's been an IT person who's designed a form or—and they're not, they've not gone into the user friendly mode to much with government, and they, they are, but they are thinking that people are at a certain level, and you're either not at that level, yeh…..[11: 155-160]

An even more explicit version of such events is provided by her, following a discussion where she recounts the type of bureaucratic pressures which are felt in some Neighbourhood Houses. Here, a technical control (fonts) also translates into a form of bureaucratic control, and this becomes an annoying control of information via the

---

[59] 11: 190-193: 'Look, even in the days when we used to send things by post, snail mail, there was often, well it seemed to me some things just went off into the never, the deep dark hole of forms, that collected our forms'.

technology. The discussion in the second paragraph about 'they might say', may appear convoluted, but in the audio version, it is clear that 'they may say' is referring to the potential options which could be open to the centralised bureaucrats who choose not to make life easier, despite the possibilities of developing and implementing a less constrictive or annoying system if effort was put in by bureaucrats and designers to be more alert to user needs and preferences..

> We've just got new delivery, ACFE's now using a different form for a three-year funding model, and so we have been asked to fill in delivery—what is it called—a delivery schedule next year, and the, just the font, everything was very small…it's on an Excel sheet, and I just found that wasn't particularly user friendly, to fill that information in.
>
> They might say, they might have a different, yeh, they might feel differently about that, however, you know even talking to other Neighbourhood House coordinators, and I had someone on the phone today, who was you know really grappling with that, so that can take you extra time to do that, but then, they might have sent out an application form which would exactly you know, require exactly the same thinking through, how do I respond, blah blah blah. [11: 173-85].

Additional support for this concern about control of the context and form of communication is also expressed by others:

> [W]hen you're proposing something, you've already provided them a lot of the stats and the ... and what not, but they still have to go through that whole process, and that's the frustration, the bureaucracy, the red tape, the amount of you know now that we've moved to outcome based funding, with a lot of the programs that we—we undertake, you find that a lot of the detail…more time is spent is on filling forms and accountability than doing. [13: 104-113][60]

In the next extract in fact, there is a direct reference to governance:

> *Do you think that the kinds of things you've got to do aren't just a matter of the time, but are a management issue—your funders and others are asking you to do things, more control?*

---

[60] See also 7: 118-122: 'You had to put a number, like how many volunteers work in the organisation. Now, I wanted to put three, but very part-time, like they are only here three hours a week, but the minute I meant to put very part-time, it just wouldn't accept it, so I had to put three, and you think, well it looks like they're three full-time volunteers but they're not…'

Yeh, I think so many things have to be submitted, you know…electronically now, so many funding submissions, yeh, o yeh I think there's a lot more, you know the messages we have—that's actually governance …so much of that funding information comes to us via email. [22: 90-93]

But for the following informant, the capacity for agency is still there:

But from my point of view, the cup is not half empty. That—it's just the way it is…the half full is while you've got your backdrop and your nuts and bolts and your compliance and your accountability and all of that, meanwhile, you've got a brilliant facility, you've got pretty well an open slather about being able to engage the community in a really meaningful way…Of course the accountability shits me and the—you know of course, and you say [*said very softly*] 'oh for God's sake'… [15: 99-112]

And another has a dose of realism about how government works:

It can be a bit yeh, take away your privacy, because you're expected to do so much more, and council, but they've always been like this. I don't like the email system to be honest, I think a lot of time they're better off phoning, because you may not receive an email, and especially with council, they need to still send follow up letters about things, not just email [20: 73-76]

But such forms of manipulation and control are not felt by all people:

I'm just trying to think this through, but for me, I attended something recently about how to do the stats on line and I loved it, I thought oh great, because I hate this drowning in bits of paper, um, I much prefer to be able to do that online send it off, know that it's gone, know that the document looks really, it's at their standard, I don't have to fiddle with the format, all that kind of stuff, all I have to do is fill it in, check, make sure it's right, send it off, and then file it in my folder on the computer. I really like that [*chuckles*] [3: 277-84]

Personal agency and adaptability

Action is framed within the context of adaptability to different situations, within the constraints of broader time and responsibility.

No, because I guess it's like with everything. I'll get a—like your call. I saw your call and I saw your email and I responded to neither—sorry, you know what I mean? Oh yeh, gee, Larry OK. But I guess there were a lot of other things happening that was all, other things that took priority.[15-266-69]

[B]ecause I am so used to being interrupted so I guess I have a number of priorities coming at me all the time, I'll evaluate every phone call and every—I can read a document and read it quickly, and [unclear]…how urgent is this? Boompf and pass it on…it's about adaptability I think. [15.275-278]

The idea of personal adaptability also ties in the capacity to use varying interpretive skills with artifactual technology. The following comments reflect different aspects of adaptation to what ICTs can offer in human-technical arrangements, ranging from use of ICTs in aspects of management, to community learning and development, as well as their incorporation with home-based uses of technology. Note that in the following comment, there is a mix between being able to use the technology and then work with others to solve workplace problems—the mix between machine and human agency, as a matter of interpretive skills—is part of the familiar organisational culture:

Yeh, yeh, look staff are all you know, all our financial staff ... MYOB package, which is great…we all have interpretive skills to be able to interpret anything that comes out of that computer…and because we sit around and talk about it, if someone has a gap, that's ... addressed straight away. [24: 249-251]

Another person expressed a capacity to control and act despite a low degree of technical skill—he can direct others (as made clear in his interview), but:

I can, look I know…look, how do you grade that? I mean, I can use Word, yeh, I can get onto the Internet, I can email, I can put attachments on that…I can search, not a problem, that, that, to be honest, I haven't gone out of my way, when I walked into this job, or got this job, I was not computer literate…Three-and-a-half-years now [*on the job*], just after 2001. I wasn't computer literate at all. [8: 172-76]

Agency to do new things can be framed in the context of community development or education, rather than technical innovation. I asked one of the community educators in a Neighbourhood House whether technology was helping to create and document new forms of knowledge in the organisation:

Well in the past we would perhaps you know, you'd take photographs, but then it's that delay, you have to finish the roll of film, have to get them printed, and then you might get around to doing a display, whereas it's very immediate, we're so excited we could do it so rapidly, and our

students can do it, you know and that's the group I have this afternoon, it's our publications group…and they produce a newsletter, they do that stuff. [17: 200-208]

Another informant, who had a strong managerial philosophy, saw skills in ICTs as essential to professional development:

I guess my observation is I think that people be they [unclear] managers or Neighbourhood House worker are naïve to think it is not a valuable tool, because it is a valuable tool. And to think that it's OK to put out a shoddy term brochure—it'll do kind of mentality because I don't have the computer skills to deliver anything better is very naïve, I think that often people want the warm fuzzy of running a Neighbourhood House—essentially we are a business—and we have to be professional, and everything that we, that emanates from us must be professional… [15:213-219]

One interviewee commented on how relatively easy it now was to get IT skills in comparison to older mechanical office technologies:

I suppose most jobs when you think about it, do call for a bit of computer knowledge these days, no matter what you are doing you know. Look at the cash registers, now I've seen and they're all kind of computer based and there was a couple of women being trained and they were in their 50s that they'd worked in the chemist for years and they had to redo everything. The whole screen was up ... on their computer, so most jobs really entail computer knowledge now, and it's not a forced on thing and it's not hard, it's not like the old days where you had ledger machines and stuff like that, that you had to balance…[20: 149-157]

Having agency, however, also can mean a loss of control, unless personal action is taken:

So has technology kind of sped up your life, made it easier, the same? Or is it different?

That's an interesting question. Somebody once said to me in a job I once used to do, I used to spend a lot of time on the road, and uh, a car was part of that job, and someone said to me once, you think…an employer treats you well because they give you a mobile phone and a car, but all that means is that you're available around the clock and I tend to think that's true, however, you have to take control of it yourself, and I don't open emails at home on the weekend, I don't worry about that. [3: 348-356]

Similar sentiments were expressed by another informant, the manager of one of the larger Neighbourhood Houses, who also refuses to have a mobile phone so that she can better control the separation between work and private life, because:

> I don't carry one with me because I know it would ring constantly and I think you're under enough pressure, um you know working constantly minimal hours with minimum staff and with minimum resources, to also be called at god knows what hour day and night and I don't like having them in the car because you automatically tend to pick them up even though you shouldn't and, no, that's the one where I drew the line, I'm not keeping a mobile with me. [2: 376-381]

This view was also held by at least one other worker who instituted her own *technology of control* by physical absence:

> No, I won't have a mobile, no, it's like your bad guardian angel, it goes everywhere with you, I couldn't stand that. If we're going out to a meeting…we always put where we're going, we have a book here and I put the number in, if it's an emergency, they can ring that centre. [24.71-75]

Yet technical difficulties and the loss of technical control do inhibit some people:

> *So are you saying that you can't control the computer?*
>
> No, I can't, when something…like it does at home, I can't fix it. You know I play around with it and I go oh my god she's going to…[unclear]…and I go oh shit, for half an hour, and I'm also thinking , I don't have a clue what I am doing, I'm making a [unclear] of all that. And yeh, I resent that, because most of the things I like having power over and if I can't control or understand why I can't control…understand. [5:190-94]
>
> *So you think that the technology is controlling you?*
>
> With the emails, yes, because if even VICNET, if they're going on a outage, then you're out, and then this did crash one time and it was oh this spam that was coming through, it froze everything and I kept getting this one, number one message, the other 23 couldn't, so I just had the first message every time I tried to receive, and then I rang the support desk, and they saw what was the problem, but still, that's troubleshooting yourself, I could have sat there going 'ahhhh'. [12: 240-241]

The inevitability of new forms of technology and the capacity to learn appears to have been important for this person:

And you've had no fear of them, like things go wrong or anything like that?

Oh, no, no fear, I think I'll...you know, I don't …and probably because I was there right from the start, you know, when they first…I wasn't one of those who sort of…I know there's a lot of people who sort of avoided them, for the first five or 10 years, or then they thought well that's inevitable, well I'm going to have to get one of these things I've got to learn because everybody's using them, well I didn't, I was there right from the start, and was lucky enough to you know, get some training in that and just felt comfortable, right from the start, so…[2:290-98]

The location of technology uptake within the informal learning environment and practice of home life is typified by this informant, acknowledging the initial apprehensions around new technologies and skills:

Did you have any apprehension?

I sort of did, but once—part of it was because I thought that this was going to be really difficult, but once we did what we did, with no supervision, we just sort of did it, and there was no waiting list or anything because it was like ..., because it was the first day it was there, and plus I'd been using computers and when you've got teenage boys, they just sort of drag you along with them, in terms of 'its all right'…I just sort of taken a leap of faith and said I'm going to do my banking online and it'll be all right, so, but I did have apprehensions because I didn't know what it was, but once I started, that was it. [16: 50-61]

For another, work and life without technology left her out of the loop, even if that time spent on the computer is not a major part of the work day in contrast to other people.

Is the computer starting to run your life a bit?

I'd say so…well I think if you're not computer literate you're really left out of the loop, well so much information comes by, if you just read ... an email, just you know the information you can get on the computer, on the Internet…I mean I've always got it at work, I don't spend a lot of time on the computer because I really don't have the time to, I know people who spend enormous amounts of time on the computer, whereas I've got three kids, I work here, I really don't have a lot of time to be spending on it, but I think that it's hard if you don't have computer skills now, you probably get ... left behind. [22:77-84]

For another person, uptake was part of a learning curve, and in fact, that learning curve has led to increased agency. For this worker too, the qualifier 'intriguing' was used, with the

realisation that there were puzzling and displacing changes afoot. Here is the opportunity for a new set of challenges and problem-solving activities, leading to increased capacity and personal empowerment:

> It was intriguing—I didn't use email as much, then, once Skillsnet [*a training program]* sort of kicked off, 2001, see we had the whole Y2K thing you know, everyone was worried, this was it, we're all going to come to work January and everything's going to be fizzled out, so we had a lot of you know unnecessary fears and whatnot that went on in that period, but that's all being part of the learning curve, and in my own development sort of made me realise more and more that I'm not scared of computers now but now it's changed, I'm more demanding of them. [13:160-66]

This empowerment, as suggested by the interview, has resulted in increased capacity to be more *demanding* of what the technology can achieve. Such empowerment carries the prospect of new demands, but it is also tied to a sense of organisational futures:

> *You as a worker, as a worker in an agency, you've never felt kind of held back or constrained by the technology, kind of frightened by it, or anything like that?*

> No, initially I had people come in and run the classes, and then one of the tutors fell through, and I ended up teaching the computer classes myself, so it was actually great for me as a worker, because I'm on top of it, I'm abreast of what's happening and that's why I'm involved with this project, you know, I've always made it, it's one of my priorities, because I see it as the way to get ahead, both for you know, as an organisation and myself personally, you can't afford to be illiterate in the IT sector. [2: 290-294]

The capacity to get ahead also ties in with the need to link into other organisations:

> *So you are online at home now, and you do work, emails at home, searching on World Wide Web?*

> Yes, I do a lot, maybe for the community, onto the Australian Business Registrar, the Australian Taxation, the Consumer Affairs, I do a lot of searching on that one, because I deliver a good governance course which is also on the ACE hubs initiatives [*training program*]…and of course they're changing, the fees are changing, so I always do link back into the consumer search engine to find… [12: 148-154]

The change from one genre of communication to another (phone to email), lets at least one worker get a 'double whammy' out a particular feature in her email program. She can

request 'return receipts' and leave phone messages, and this provides an enhanced capacity to manage communication flows:

> *That change between having to rely on the phone and now you can leave things and then…*

> Exactly, you don't have to keep saying to yourself oh, god, I'll phone them back I'll phone them back I'll phone them back or you can have the double whammy, leave them a voice mail, send them an email with a read receipt, you know all of that, it's, I think there's more security if that makes sense. You feel more certain of contact. [3.324-328]

Thus, electronic extensibility can be reinforced through multiple electronic connections.

Genre changes

Overall, informants have moved to communicating via computers. Only a few of them still prefer the physical act of writing with a pen:

> I love writing, I've always loved writing and I think there's a more holistic two-hemisphere approach for me to writing stuff and seeing it and just experiencing that flow is just must faster for me than using the computer—I mean I do use the computer, I do reports on it and do submissions, but I still love writing. [24: 40-43]

Another person also strongly felt that certain genres were more appropriate for personalised communication:

> I remember one of our people just send me an email saying, oh I'm resigning you know, and I had had no intimation of that before, and I found that really just, just—I was really upset by it, and I felt that if there are things that you would always do that there are things that you should do face-to-face or on the telephone but not through an email, you know, unless you spend a lot of time in the composition of your email and you know make it like an old-fashioned letter with lots of prefacing and explanation, but I find that's why I think email—I like to think of it as a business-like arrangement-type mechanism more than a something that where you do communicate on a more personal level. I think there's certain news that doesn't go down well through email. [18:114-122]

Additionally, the importance of a paper diary as a communication tool for a network or community of people in a physical location was expressed by at least one other person who, during the course of her interview, tapped a large diary, so as to emphasise its

importance—its agency—in the life of the centre. In this particular case, software cannot match the utility, symbolic importance and physicality of the old paper diary, though the interviewee admitted earlier in the interview that eventually the paper diary could be replaced [2: 206-210]:

> [A]s I said that there's 30 clubs that are members here so that it's time to make sure that memberships are renewed, that we get that support back in, that um there's diaries to you know that the centre runs—that diary there is just our bible, and anything and everything that happens is on that diary um, so uh that's constantly being maintained, updated, and you know, looking towards enrolments and you can we fit all these people in, if not why not where are we going so it's…just constant. [2:415-20]

Another interviewee illuminated some of the contradictory feelings that technology can engender. In this case, on the one hand, the computer is called the centre of work, but on the other, the paper diary (which can be seen opened, on the desk in the photo below), is still viewed as critical. The placement of the computer also gives a misleading impression about physical dominance by a particular genre of communication, when in work terms, that may not be the case, when the narrative tells us something else.

Figure 27. Diary and Computer

Yeh, it's like the focal part of what I do, and in fact, it's, it's a tool, a good tool, and I couldn't be without it because even on my—even on my—here's a good point—my scheduling for the community centre is on computer. Now, it's taken me ages and I still don't use it properly, I still don't know—not that I don't use it properly, I just—I just don't open it every day, I much prefer to open my diary and go oh yeh, jujitsu are coming here tonight, I can see that, rather than, if I went to that [*the PC]* , I couldn't see where jujitsu were coming do you know—to me that's a whole lot of—I just don't like it. So, so, yeh, perhaps it's because I am a woman, I don't know. Plus, too, this is not good, it only takes three appointments in a day, which is useless, because if you back [*manipulates the software*] these little boxes mean that there's more things so you actually have to then click on that day and this is what you come up with and to me that just— nothing stands out there, I really still have to look at it very closely [14: 297-311]

Chapter conclusions

The exploration of workers' relationships with ICTs is a rich field, with many fine variations about the how artifactual technologies are conceived, and situated at work and at

times, at home. The human dimension is invariably raised, including the other caring and support technologies with which people work. ICTs are only one element in the networked process which brings about better lives for people.

ICTs are by and large regarded as useful tools. However, the difficulty of finding a precise and encompassing language to articulate the different meanings of 'tool' does not mean that 'tools' have logical, practical and embodied meaning. The interview data itself—as an empirical starting point about what might be a common experience—doesn't display any substantial alternate view of artifactual technology which enriches the problem of machine-human agency, but this poverty of expression should not be mistaken for the fact that artifactual technology is understood in a variety of ways. Practical or tacit knowledge, the stuff that is assumed and 'done' through action and practice, as suggested by Giddens (see p. 143) cannot be easily described outside of its own practice frame.

Artifactual technology's apparent ordinariness, like that of the phone, means that saying what *it* is, beyond bald statements, can be a hard task for interviewees. Difficult as it can be to articulate on the workers' part, theoretical exploration of what they have said demonstrates the complexities of the adaptation of new technologies. A hint towards a richer expression of the meaning of technology in everyday life has strong connections with philosophical writing which highlight the problem of authenticity in the face of systems of technological control, in that ICTs potentially, but not deterministically, interfere with authenticity and originality in the communication and education process of community or neighbourhood work. When it comes to much more determined management functions (reports and spreadsheets), there is some annoyances at pre-set forms and formats, but these are not seen as controlling forces overall, as they are not at the centre of worker life, though electronics has lead to a profound change from the old days of exercise books—a change of genres--though no one expects to go back to that way of doing things.

The 'tool' is an empowering device for different purposes, situated within the particular circumstances of the Neighbourhood House. ICTs are very useful as adaptable communication tools, but this is not a simply determined relationship. Workers can, as part of overall technologies of care, situate ICTs as ancillary to other practical activity, within

the context of other prevailing tasks (see p. 124). ICTs are trusted in the sense of technical reliability, and the notion of control of governance via ICTs is acknowledged in part, but not regarded as problematic to independent agency. This could, however, be due to a reluctance to openly discuss political issues with an outsider.

Despite this limitation, from the point of view of the community workers, the working terrain of the Neighbourhood House worker (in the office, or at home) isn't a *tabula rasa* to be worked upon from the outside. It involves the use of power to act upon and limit the effects of ICTs, and the capacity to have perspective on how artifactual technologies are interpreted as active agents and how they intersect with their physical and virtual communications.

Furthermore, the informants' comments overall do not provide for a theory of governance which amounts to a depiction of a panoptical tyranny with technologies of control. Rather, governance is a multileveled, multi-channelled manifestation of the 'capillaries of power' (Foucault and Gordon 1980: 96). Bureaucracy is negotiated with on a day-to-day basis, in the process of reproduction of institutional cultures and administrative practices. Control is accepted as part of the system of relationships and particular demands of the different bureaucracies which fund their work and demand accountability. On a pragmatic day-to-day level, the workers interviewed have a focus upon community development and education, rather than an orientation to challenge or change political structures and policy. Larger scale policy or funding changes caused by change of government or bureaucratic direction, do of course, bring out more political responses of agencies through their boards, managers, and peak associations, and are part of the political game of existence for community services agencies in their role as representatives and advocates for their particular funding or policy pitch in social arena (Lyons 2003). But as noted previously (see p. 250), these higher-level and sensitive political questions may be difficult to explore for an outsider. On a day-to-day level, the workers are focussed upon working with people, and technology as an instrument or means to this end.

11 Technobiographies: 'We can wear many hats and do many things at the same time'

In order to provide a wider and contextualised picture about ICT use, informants were also asked to provide information about their exposure to ICTs over time, including their experience at the workplace and at home. The rationale for this investigation was to obtain a holistic view of their experiences with technology, particularly given the close association between Neighbourhood Houses and homes as places of social reproduction, and the fact that most Neighbourhood House coordinators are women, engaged in part-time (paid) employment. What arose was a generally positive picture of how technology has been adopted and incorporated into a cycle of paid and additionally, non-paid work in the workplace and at home. This provides more depth to the idea of extensibility offered by technology (p. 159). The findings are somewhat different to the previous literature on the gendering of technology, which has emphasised the negative effects of technology on women's agency (see pp. 86ff., 123), but in line with more recent findings such as that of Singh, demonstrating the increased agency of women with technology (Singh 2001).

Normalised technologies

Interviews revealed that for many interviewees, knowledge and adoption of ICTs came about through a process in which PCs (and for a number of people, Macintoshes) were domesticated into both work and family life as an educational, business, or pleasure technology. While I tried to discern if there was any significance between gaining pre-Internet skills such as word processing on stand-alone computers and later networked skills, this was not a significant topic of conversation.

Some interviewees had also informally learned computer skills while working at Neighbourhood Houses in paid or non-paid positions, or through technology classes[61]. While there may have been some apprehensions about the introduction of ICTs, technology

---

[61] For example, 10: 192-193; 23: 20-21, with a Macintosh chained to a desk, like a medieval book, in the early 1980s.

was absorbed into everyday life, whether at work or at home (for example, as a database for recipes, for email and other work as an adjunct to paid work, or as a family tool).

As one of the informants put it, after discussing her introduction to PCs while in secretarial and bookkeeping work in the 1980s[62]:

> The—being a woman [unclear]...because I've always been in an office or administration…we can wear many hats and do many things at the same time, and it's just something that's picked up now in the normal routine, it's just part of life. And my part you can see I've moved in that way, but as a woman, who says…as a woman who comes into our houses, no they've been busy at home raising their children and not really getting on the computers. The first thing every woman wants on the computer—so I can put my recipes on it. [12: 360-366]

Without trivialising the issue, the reference to recipes (and children), highlights the place of ICTs as something put into place as part of the *normal* cycle of domestic social reproduction (at least for what appears to be fairly traditional domestic arrangements for the women interviewed). Women wear many hats, and can be adaptive. Technological artifacts are 'normalised' and used to reproduce memory (such as recipes) within the particular interpretive and normal schemas (see p. 144) that take precedence in home life.

In the interviews, I prompted the women informants to discuss if they thought gender was an issue in their use of technology. One person made specific allusion to the distinction between men and women's learning styles[63]. A number of interviewees told me that their adoption of ICTs was due to a spouse's or other family members' interests or skills, and these remarks were made without any negative implication. Indeed, there was occasional humour about spousal differences. The 'gendering of technology', as a negative feature of the appropriation of new technologies, leading to continuing inequitable relations of social reproduction (Wajcman and MacKenzie 1999; Wajcman 2001), was not raised as an issue

---

[62] Also see, for example, the accounts of early computer use in interviews 6: 61-69; 14: 96-101; 16: 3-12; 20: 19-41; 21: 30-41.
[63] 24: 215-222.

of particular concern. For some of them, the answer was more accurately framed as a reflection of personality[64] than gender. This feature came up in a number of interviews[65]:

> Funny question! I don't know, I think it's more a personality, like people's personalities, I've never been a bookworm, a book person, I'm more a people person and uh, I mean technology came along and you had to go with it, because it became pretty much part of any role that you have, you need to access computers somehow, and I learnt along the way, but I'm not the kind of person who will sit and nut things out—I don't know if that's me as a woman or me as person, I'm not one who will sit there for hours fiddling or something, whereas I know there are people that love that…it's like a puzzle solver kind of thing and I think it's more personality rather than female male, but I could be wrong, cos I'm thinking—I'd much rather ring my husband up and see if he could fix, because of his personality has always been like from like way way back, cos he's into IT, he'll just sit with a problem and go through in a systematic way of trying to solve something. [9: 340-353]

In the interviews it became clear as that the earlier 'hump' of fears and apprehensions about ICTs were no longer the case. ICTs were viewed as practical and normal aspects of work and home life, part and parcel of the totality of the bundle or container (see p. 161) of *extensible,* everyday existence (see p. 159). Electronic extensibility is a boon to communication with the outside world for information that has a domestic connection.

> But another, another worker, despite an apparently high degree of facility, was still a little unsure of her skills, and located her technical learning within the family circle:
>
> I'm not a computer freak like my boys are, they just seem to be into it, you know what I mean…I think being a woman, I use it to produce this, this hard sort of stuff, but I don't—no, I suppose I still use it as a typewriter perhaps, that's perhaps a problem. [14: 279-282]

In the following passage, another interviewee speculated about the nature/nurture issue and its relationship to personality. She also raised the issue of the emotional element in

---

[64] 26: 196.

[65] Related remarks were made in 7: 299-302, where an opposite pattern of behaviour was the case. The interviewee was the technological problem solver in contrast to the husband who never reads manuals. Again, the home-based used of technology is intersecting with work technology.

women's communication and conversation[66], akin to the comments made in the very first quotation in this section:

> I'm not sure about the gender issue…I think it's not so much a gender thing as a personality thing, and I think I'd actually have to give more thought to the gender issue around the technology issue and the use of technology in Neighbourhood Houses and maybe that is, maybe there is a gender thing in between the idea of women as communicators and men as…mechanical people…communication is about face-to-face and you know…emotional contact, and I think probably women feel that more starkly that the technology can take the emotionality out of the communication, I think that would be a significant factor. [25: 105:-112]

However, a number of people commented on the lack of women IT support staff in Neighbourhood Houses, though at least one House has one[67]. One interviewee, with a background in a male dominated industry where personal innovation was important, had little sympathy with the underdog position so frequently associated with the community services industry:

> I've come from a male-dominated, hierarchical very sexist industry, incredibly sexist—appalling. And coming to this sector, it's female dominated, it's, I think, we've never had a female IT support person, and I would say that this has been a problem, but it's interesting that there are no female—I don't know of any female IT support people out there. [15: 282-286]

However, gender was no excuse in her opinion:

> I think there'll always be areas you don't know, like everything, like everything. Just use things to the best of your advantage. I guess I always get frustrated in this sector and this is from the peak body downwards—that cup is half empty and you know I cannot get into that mentality, there's a bit of a bleeding heart mentality we're under-funded, there's not enough money na na na. Well OK, but we are doing is brilliant, and I think that it's an incredibly supported sector, I've come from the private sector, there's no awards, there's no supervision, there's no professional development, there's no performance reviews, there's no nurturing as an employee, whereas here you've got performance reviews, you've got position …Here, it's that clearly defined roles that's expected of you, and therefore should be clearly defined outcomes of what employees should be doing. I think technology—of course it gives you the shits sometimes—I can't load a CD rom

---

[66] See also 11:266-272.

[67] 'Every friend I have who has a problem with a computer, when they take it to a tech., it's a man' [3: 298-299]. The woman tech helper is noted at [13: 120-128].

onto one of the student computers at the moment. It's annoying, but not in a big kind of you know.[15: 297-304]

The family circle

As suggested, for many of the women, adoption of ICTs is located within the electronic activity of the family. For example, being within a male-dominated family has not meant lack of agency for this person, who, if anything, has developed of her own ideas about the process of technology skills appropriation:

> I can see different stages that you go—and I actually have done some sessions like ... identifying those stages about you know, that's starting out, that's how it's all a bit scary and technophobic and I know it because living in a house of males and my husband is not a good teacher that kind of ooh!…I kind of saw it as some breakthroughs where you think instead of where something goes wrong you go oh my god I've broken it or come and fix it for me I can't, to actually sit there and go ahh, now it could be I've done this—and that was a real breakthrough for me in the sense that I suddenly started to realise well, it's not the end of the world if something goes a bit awry, I've got a few strategies to figure out what I've done here…[17: 84-96]

Changes at work and then a mention of what happened at home as well are characteristic, as in this case:

> Well, prior to getting the job here, I had been working with — Council as it was then, and they were just really starting to get their employees, the wider breadth of employees, up and running on computers, so there wasn't like there is now a computer running on every desk ...…but there were computers sprinkled around the place, and I'd been doing a study of the playgroups in — and I was word-processing basically that information, so it really, I always say that my children taught me how to use a computer (laughs), and they were very impatient teachers I'd like to add, but yes my husband he had computers at home right from when our youngest was about two I think. [11: 190-117]

The dual home/work location created through ICTs, with the increased extensibility of contact via the utility of the technology (see p. 159, and the discussion of Adams), has opened up 'a whole new world', described here:

> Oh, I just loved it, it just opened up a whole new world you know, it was just so much information, and you know, you could even cut and paste things, it saves you so much time.

Filling out forms, now that we get everything in form format you can actually fill a form out…I used to do a lot of work stuff at home, so you know, I'd bring work home, and then we got the Internet on at work, and of course that saved me, but I'd go home and finish things whatever I was doing at home I would do at you know bring home back to work and vice versa so I was doing work stuff at home. [20: 55-62]

Another informant, who later in the interview mentioned that her children used a computer at home for homework, also said in response to a prompt about how long had she been using computers:

I suppose a while ago, I've always had—like playing with new toys and all that sort of stuff, but was introduced to computers when I was down at…so that's 20 years ago, on an old Apple, we were given three or four, I think little Apple computers and absolutely loved them and thought they were the best things and never did, until I went back to school, did any formal training, with computers, it was I would get on there and play until I make it work, now that's sort of stuff so that's where my passion comes from. I fiddle with them until I make the bloody thing work. [19:23-79]

Personal agency with technology, within the context of the family, and transitions to the networks of education and the workplace match the capacities of women in Neighbourhood Houses.

'We use our best resources, which is each other'

One interviewee put forward the view that despite the increased opportunities for different forms of communication electronically, from a woman's viewpoint, technology incorporated into highly collaborative and interactive form of communication, dependent upon networks of trust and the particular way that women talk. Human networks lie at the core of community work for her, and technology is *situated* 'just the same as everything else':

I think the way that community-based organisations work with technology is just like any other way they work with everything else in this sector…I think it's just the same as everything else, the technology. I have got all, we all network, we all ring each other and say, you know what have you got for this, how did you do that?…What we do is, that we rely on every—we do what women always do—you always check out with other women what's going on, how you work it

out, and you ask other women, and you can turn around and say 'I don't have a bloody clue how this is working, I don't know what they mean by this funding, what the hell do they mean?' They go 'oh, I've done that, blah blah blah and so on'. We all, we use our best resources, which is each other. And we all you know, information, and without trying to sound like some old bloody feminist, it is that same thing. It is you know, you go to the you know, people you trust, and that's what we do with technology, it's no different. [5: 510-530]

Even if her depiction of collaboration is highly personalised, as an ideal type, it helps to sharpen the edges around a micro-level picture of how ICTs are situated within overall technologies of care that are characteristic of much community-base work, as argued previously (see p. 87). Furthermore, an emphasis on the agency and the strong materiality of caring and support as a process helps balance any privileging of artifactual technology as the core focus, or the replacement of human interaction as the core 'business' in such environments.

Such technologies of care include physical maintenance, as presented by these women, for whom the distinction between home care and work care is merged (and I suspect, the same activity would be undertaken by men in Neighbourhood Houses), and traditional care practices transferred to the workplace. For the next worker, in addition to her administrative responsibilities, there is another set of core activity which might not be considered as important (or even acceptable) in other jobs, but here, it is a direct transmission of unpaid domestic labour—including taking care of hygiene technology to the workplace:

So between — and I, we are the cleaners, the administrators, we're the counsellors, we're the gardeners, we bring the garbage bins in. My entire day is split between housekeeping literally, cleaning up people's messes, you know, restocking, out shopping you know someone's run out of toilet paper or whatever like, I'm bum up in the urinals every day of the week um, we don't have the luxury for the funding of those sorts of things, and um, my motto is I wouldn't give to anybody to do what I wouldn't do myself so, I think it's a good thing for people to see that you're quite happy scrubbing out the urinals. [2: 420-430]

Other technologies

I was also interested in exploring if use of mobile phones raised any issues about attitudes to, and use of technology. Many people also had mobile phones, some used them for work,

others not. Some used them for family contact, others not. I did not feel that I had enough of the interviewee's confidence for this study to go into details about personal use of the phone with family. However, it became clear to me that the interesting question of the regionalisation of space relative to the placement of the computer or other pieces of technology in home spaces and time-space construction as well as different gender and power relations in the home environment would be a fascinating future study (see p. 167)[68]. A number of interviewees indicated the presence of multiple computers at home, and are used to carrying home floppies, data sticks, checking mail at home, writing reports, reporting, and searching online, indicating the 'normality' and familiarity with information technology artifacts. In one interview, it was made clear that computers were spread throughout several rooms in the home. Further ethnographic study of the choices about, placement, use, and meaning of different items of technology in the physical home (and perhaps its extension into mobile phone use) would greatly deepen knowledge of the meaning of 'stations' and 'regionalisation' in intimate spaces and places (see p. 161).

Despite the limitations of the data, there are pointers towards a better conception of the home relationship to technology. Interviewees indicated that there was a need for a balance between the demands of (paid) work, and the (unpaid) work that was done at home on a computer, whether it is email, searching, or posting reports to funders. Limited loyalty to workplace needs is a disincentive to some people. As one interviewee said:

> Work is work and home's home. I don't get paid enough to justify doing it at home. [1: 502-503]

Yet the pressure is on for workers to always be available to their committees, other workers, and clients, though this is also constructed in terms of family life. The following extract concerns a coordinator who is only paid for part-time work, yet her work responsibilities cross time and space boundaries. A balancing act, not surprisingly, occurs within the context of the computer as a family technology tool:

---

[68] The enormous potential (and theoretical complexities) of such a project bringing together geography, ethnography of the home, and the study of ICTs, struck home to me during the workshop on community and ICTs in New Zealand in December 2004, after remarks made by Prof. David Thorns of the University of Canterbury.

Yeh, so I just had to have a computer at home, I just couldn't I mean as I said everything I've got, you know is there, um, just chasing up you know night time, because we are open seven days a week, till midnight, sometimes you can only catch people in the evenings, and some [unclear] for ever on the phone, you know for ever finishing things off at home submission time, accountability time, you know, funding time, you just don't have enough time so I did have to get one, um and then, did not have the Internet at home, until this year, and the only reason we got it because my son's started secondary school this year and we just knew that's it now every second project he brought home was you know look this up or make sure this is typed. [2: 345-343]

Another interviewee, a very busy community volunteer, shows just how much the computer can become part of the normalised management and production of paid and non-paid work, including house-work. She also mentioned at a later point in the interview, that she struggles for computer access time with her son[69].

I was at a life saving conference on Saturday and then on Sunday morning I had a life-saving session down at the lifesaving club, then I came home and did a whole lot of ironing and whatever and then I did some work and sat on the computer and so, but I had to email to somebody this morning a.s.a.p., and when I went to open it I couldn't find it, it was nowhere, absolutely nowhere, and silly me, instead of going to the start of the computer and using my documents to find it, I just panicked and oh my god I've lost it, but I'd actually filed it, put it away in the wrong folder, and yeh, so I was but actually that was last night when I tried to do that so I was—it was 12 o'clock I was obviously well past it, I should have gone to bed. [14: 145-154].

Another worker, whose family members each have a computer and mobile, decided, however, to say 'no' to work at home. This choice may be due to her being a full-time paid worker who now has administrative assistance.

No, I did link into the computer so I can get my emails, and then I did unlink it because I said nup. No, I've never used to to, I used to think I'd be good it'd be easier for me to take some work home, now I've got broadband, gee, I…because she's taken so much away, I used to do all the administration, I used to do everything here, never had an admin worker so since I've had 40 hours and I've got her 38, it's just an amazing strain [*meaning a relief of strain!*]. [6: 282-289]

---

[69] 14:170-173.

Another worker, despite the utility of having Internet access at home, decided to cut off Internet access because of overuse by a child, though this cut off also has a potentially negative effect on her own work flows between the Neighbourhood House and home:

> We actually just had our Internet cut off, at home, because my son's spending too much time on the Internet and not enough time on his schoolwork…my husband has a laptop from work, and we are able to access the Internet if we need too, and it'll be a real pain if that continues. I like being able to check my work email from home, because I don't work Thursday and Friday I can just get on Friday morning. It's hard enough to open everything, but if I'm particularly waiting for something, or there's something that needs urgent attention, then I can do that, plus I can email myself reports and things and then I can open them at home, so I'm not continuously carting floppies backwards and forwards. [7: 262-270]

Once again, the capacity for control of the technology is demonstrated.

Chapter conclusions

Artifactual technology has been incorporated into home life in a positive way, as part of what could be called a family circle of technological biography that complements institutional biography (see p. 85), if we understand the idea of biography to be a container of episodes and actions stretched across time and space. Over the years, interviewees have picked up technical skills, often informally. Artifactual technology, by and large, is not viewed as a barrier or inhibitor of skills acquisition or communication in families, and people know how to say 'no' to over-use or interference with other aspects of family life. A placemarker for this division, though not in all cases is an awareness of the division between paid and non-paid work. At the same time, there is an awareness of the 'extensibility' offered by communication, and this extensibility serves to reinforce the interpretive tradition and practices that are associated with technologies of care. As one interviewee put it: 'what we do with technology, it's no different' (see p. 272), and artifactual technology is placed within the context of other important skills, and knowledgeable processes.

There were also indications that the effects of electronic extensibility with other devices such as mobile phones could be explored much more deeply at a future point, as well as the

effects and relationships of the placement of technological items within the household and their intersection with family and work or school life, but this too, could be part of a future project.

12   The effects and affects of distanciation: 'We are utterly dependent on it'

Network Effects

Whether regarded as formal or informal structures, networks such as those established by Neighbourhood Houses in relationships with other communities and organisations present opportunities for communication, use of resources, and other activities. Networks, as discussed previously, are seen to preserve a certain flexibility and informality, and as such, can also act to assist, constrain or limit relationships though their bridging and bonding activity (see also p. 60).

Networks consist of the activities of people, together with their use of technology to support these activities, as well as new forms of communication and information. Networks are consequently social and technical assemblages. They reproduce values and communication preferences and use of different resources by their members, mediated across time and space constructions though the means of, and influenced by, technologies such as ICTs. Neighbourhood Houses are at the liminal intersection between the home and the wider world of social support and education, the effects of which are technologies of care (see p. 87):

> I think there is no doubt that historically, these were women's centres, they were women's centres and they started off with a focus on women, and then, I think a lot of them started more into, into women and children, women and families, families...and then, if you use education as the common service, that you provided, research comes up that people have literacy issues because it's across the whole family, so it's an interest in family literacy. So that means women and kids and fathers as well, this service, of course, we have a children's contact service, and that involves both parents, that's the essence of it, so the kid can maintain contact with both parents. [3: 113-120]

A deep understanding of such spiralling networks and how to take advantage of them is part of practical knowledge held by the Neighbourhood House workers in the context of

Neighbourhood House values, though these values and practices are not necessarily easy to explain, are part and parcel, of the ordinary, recursive, reproduced institutional practice:

And yet the house is famous for doing all this IT stuff…but you've still got the core values, is it due to the staff?

I think that it's very much been the staff that's involved, initially of course [*mentions a particular staff member*]…having that platform, but also pitching that in a way that a—people started oh yeh, that's for me, I could do that, or I could have a go at that, and also the different teachers that we've had come in, the different ways they teach, the way they interact with their students as well, yeh, I don't know how to explain it, it's all just part and parcel of the way that we do it. [11: 286-291]

Information technology thus improves activities with others:

So in regards to IT, its Internet, made a change. Internet's becoming much more bigger, much more efficient, we use that all the time for communicating with other organisations than ourselves. It's great because it also creates a hard-copy situation so we can actually document that this conversation's taken place. [8.217-220]

And it also has the potential to access important sources of information more effectively, in a multitasked environment. The availability of information attracts like a fly to fly paper:

In terms of the grand forces out there—in terms of relating to the big world—is the Internet helpful?

Yes, especially being able to access government sites where you can find out what's going on, and all that sort of stuff, see what grants are available, see what legislation changes are coming through, that's been great, that has been absolutely terrific, we used to have to wait for it to come out in paper and you know fiddle through it and being able to sit here and do it, while I'm doing ten other things you know. [19: 277-284]

For this informant, the virtual network and community of Neighbourhood Houses can be improved via ICTs:

Until we got a computer with Internet access or capacity or email and that, I would probably only communicate only within my own little municipality. Um, now, you get emails from everybody, whereas people wouldn't pick up a phone and say, oh well, I'll ring all 278 Neighbourhood Houses and ask them if they'd like to be a part of this you know project or whatever, now, you

can send them off to all 278 [Neighbourhood Houses] with one push of the switch and send it off to everyone. [2: 212-218].

And for some, the Internet has expanded the network of connections and possibilities and responsibilities, leading to an information overload:

> I think electronics has made this job bigger because you might sort of think—I'm a bit interested in that website so you might then register and get their newsletter and get more and more and more emails and I'm getting to the stage where I think ah that's from that organisation. I really don't I really haven't got time to read that now it's not a high level of importance so I tend to have all these unopened emails that I sort of shown an interest at some stage, say in housing issues or something like that, and—you—it's hard to get off email lists, it's easy to get on! Can I say that? [*laughs*]. [7.211-219]

But communication through technology is not necessarily equivalent to the exercise of upfront community power:

> Look, this is what I have to say, because the reality is that email is they'll read it and put it aside and may not hear ... it again, and it's the same as with a letter, but as a—you've got something to say and if you need to get it you go and knock on his door and say I'm here and I'm going to sit on your desk until you listen to me, and I don't think that will ever change as far as Neighbourhood Houses are concerned, that's just the way we've operated, and I think it's the way we will continue to do it. [19: 233-239]

Many different things are used in a Neighbourhood House, and ICTs are part of the assemblage of different elements which help to constitute the *modus vivendi*. Asked whether using ICTs had negatively affected her community-focussed actions and values, this respondent said:

> [N]o I really don't think that we've lost it, it's really made us more aligned with the growing world and future…because everybody, most people, we hope, has a computer or access to a computer that they're aware that we have to use them. I find it easier to, if I've got to make contact with someone than actually ringing up, because that leaving the phone line still free for people who ring here, make bookings, do inquiries, and I do have a separate phone line that brings in the email, but I can just quickly say hi, doing a good job, yep, see you soon, or make that appointment but I can just reply mail, which I only learned how to do about a year ago ... You've got to be quick to pick up I suppose. [12:127-135]

Thus, matching the particular capacities of this interviewee to engage in different forms of communication, the new technology can also be put to good effect in building the social support and community networks between diverse participants, as part of overall technologies of care. A moving story which incorporates many of the elements that constitute technologies of care was told by one interviewee, involving changes in the life of an older woman, and it was told with some emotion. It is a case study about the complex social needs with which Neighbourhood Houses coordinators and others work, and one example where ICTs influence action. Different people, young and old, were engaged in a network effect of personal and technological communication around, and through the means of electronic media. From the full interview, we know that this activity had a positive impact on the older woman's health, leading to more social activity and less isolation:

> [W]e actually take them from not being able to turn it on to being able to actually able to access the Internet and having communication not just with their immediate family, but actually, having you know, just broadening their horizons. One example of a woman who is now 84, 85. She came when she was 76, came for her first class when she was 76… we got her involved with the local recycled computer club, um, and they have meetings at her place now so she, it's opened up. She says 'Look, you've really saved me', in terms of you know the friendship, she needed that, as well as being able to because it just provides you know, she doesn't have to leave her house, she can do it from home, and she's actually got these people coming into her place. [1:213-231]

But for some, there remains scepticism about the network effect: the co-present culture of extended technologies of care can be replaced by the machine. Referring to the increased use of email by workers, this informant said:

> Now that's a sad thing ... too, because what you find out is that you miss out on the gossip, you miss out on you know, immediacy and intimacy with the face-to-face contact. And yeah, that's the downside of it. I think that the networks that are established um through people in this—and I have a couple of really strong ones haven't been based through a use of technology but they're produced ... by a shared view of the world and um a sense of humour you know about—you know the domination of the sector by middle-aged menopausal women and the cardie wearers who want you maybe have a bit ... of you, don't you know, not through technology. [5: 294-301]

But a new dependency on ICTs was a concern to some people. The direct agency of the computer as part of a strong electronic network left one informant floundering at times because of her new technical dependency, despite her acceptance of it as an essential part of work and home life:

> No, I like technology, I enjoy it in my home and I do enjoy it in the office, um, no, I don't think it does hold me back. I suppose the only thing is that we are so utterly dependent on it, that when it does break down, I must admit, I stand for the first half hour and think, what am I going to do? Everything I do is on that [*points to the PC*], I can't, I can't do another thing for the rest of the day because my computer doesn't turn on. That worries me, that you're so dependent on the one machine, particularly in a place where there aren't, where there isn't more than one machine, um, what you know, what, it's that scary, you're so dependent on it, my whole day comes to a total standstill if Mr Fixit doesn't get out here and fix it.

> *So you're saying too, that your time is structured around the computer?*

> Absolutely. Absolutely, and I suppose again. It's because we're down to three people in this office and one computer it's like 'let me out, let me out, mine's [my work] more important than yours, I've got to get this [unclear]. [2: 263-277]

And at the same time, ICTs begin to have a positive geo-spatial effect in the eyes of some users, despite the increased demands for communicative action:

> You can't get away from them, every time you open your Inbox, they're always there, you can't sort of yeh, so, so that's been a way of me trying to handle them.

> *Has this new technology made your world larger?*

> Definitely larger, yes….I think that just because I can tap into other agencies and other organisations that I would not have formerly, been able to do, or perhaps I should say it's a good introductive gateway to get into an organisation, someone will say here's my email address, give me an email, we can organise a time, so it's a good way to get into an organisation. [14: 202-13]

But in addition to available time being reduced, we can't know everyone either:

> *Do you feel you can have effective relationships through email?*

> Electronically, yes I do.

Even if you don't know the face?

Sometimes do you get to put a face to a name, but let's face it, we haven't got enough time in day to know every face that's available. [6:120-27]

A communication–information continuum

In the case of the Neighbourhood Houses, there is a marked and continuing preference for face-to-face processes of *communication* (thus, a more personalised *interpretive scheme* in structurational terms*),* in contrast to more a constrained and unambiguous process of *information transmission* via electronic means, such as email. This indicates the continuing importance of affective structures of *communication* (that is to say, reproduced and interpretive patterns and practices conveyed through non-verbal and co-present communication), rather than their replacement by the transmission of categorical and unambiguous *information* through means such as email.

This distinction also appears in the contrast between administrative and business communications at work, which use email, and personal communications at home, which use email as part of processes of communication with family and friends.

I think for me email still remains a business-like form of communicating, it's about getting things done, I don't, occasionally I use email at home as well, but...I think it's wonderful, I mean I go home, and I can't wait, it's the first thing I do is I go upstairs and see what the…I have to remember to say hello to my children first. [18: 70-72, 198-99].

However, the distinction between business and personal communication is beginning to break down. Behaviours have become normalised or 'automatic' under the pressure of administrative and friendship-induced conformity:

I'm using it for communication because I'm being forced to, by my funding bodies, and now by my friends who longer write, who email, and there's some parts that I actually enjoy, because it's an immediate, automatic thing, so I have embraced what I think are the positives of technology, but I still feel the other… [5: 173-6]

Despite the pressure to conform and use electronic communication, some people still feel there are a range of personal and professional boundaries which affect how electronic communication is used:

> I think, you certainly don't feel you know somebody until you speak to them, so I guess it maintains a professional distance which may or may not be good…well it forces you to just focus on the issues rather than let personalities influence the issues. [23.61-63]

> I think that with emails you—I think you pick your level of intimacy if you like that depending on who you are dealing with you know, but if it's quite a friendly you can say hi how's it going you know please find attached the da da da da da, have a good day, whereas if I'm obviously emailing to a funding body or something you can make it quite formal and its good in that you can then print it off and it becomes a record…I'm quite comfortable with it, though it does tie me to the desk a bit. [7: 173-178]

It's also interesting that for the last informant, ICTs (or at least email), were seen as physically constraining in that she gets 'tied to the desk', thus reducing her capacity to move around the work-place.

Effect on workplace communications

However, for a number of informants, communication via ICTs is not thought of as a barrier to the establishment of better work communication.

> [I]t's actually, it's increased our presence, uh, it's just another form of communication, and for those that don't, aren't interested in that form of communication, we can still use the other one, but it's actually it's increased, it's increased our profile. [1:418-20]

For the following informant, ICTs are part of the way she constructs her communication and information style, and she is not concerned about the effects of being quite personal in her approach:

> No, actually I think, actually cos I write how I talk – dahadahadah, and then I go blahblahblahblah and go ee!…bad day or things like that, and actually they'll write back and say loved getting your email it's cool or yep see you soon. So I'm glad that my personality comes through on my emails as well…The email has brought the Neighbourhood Houses in the wider sector I think closer, because we can email each other…So we're sort of quite versatile. We've as

I've said, talking with like Adult and Further Education is just strictly for email but I can still pick up the phone and [*talk to different people*] in the region. [12: 172-183]

The next worker comes from an agency which has been an enthusiastic adopter of technology, and it too, has broadened her workplace horizons:

If IT was at the level it is now, when I had started, I wouldn't have known any of those other people. ....Because it would have just been, I might have known them as a name, as someone I could get information from, but I wouldn't know them as you know the wider breadth of what they're doing in their house. [11:252-259]

For another interviewee, email has actually improved the quality of her composition, and allowed personality to come through:

… I actually think that in some ways its—I hadn't really thought of it in that way before—that it actually does reinvigorate your writing—repartee I suppose, it's sort of right to say something funny, or write something, when you're talking you don't it's you sort of give the follow on you don't necessarily say something and the other person says 'oh that was quite witty' you know…[16: 139-43]

But for another, the effect of email depends on whether you know someone or not:

…If you're typing away to someone, and you don't know what they look like, it's impersonal, but yeh, if you're typing away to someone you do know, you do know what they look like, you know what they talk like, it is more personal. [6: 254-256]

And this contingency is reflected in the comments of another informant:

Well I saw a story in the paper over the weekend where a mum who had a prem [premature] child said that the Internet really saved her, because she couldn't go out, she felt you know she was stuck at home, and she was able to connect with others in a similar situation. Now I see that's a great resource—and look, our kids connect with others on the Internet, and they talk to their friends, and they email people from overseas, fabulous, I'm not at all anti-technology, I just think there is a place for us contacting and interacting via technology, and there is a place for human beings and always will be, interacting as individuals. [11:425-432]

Personalised workplaces and electronic break-ups

However, extended communications are sometimes also matched by the break-up of personal interactions in the workplace. The odd dichotomy of increased closeness externally (through electronic communications), and decreased closeness internally (the physical work place) is raised:

> I'm sure that in terms of that it's faster and easier and good for networking, but sometimes I wonder—I've heard of workplaces where people don't even talk to each other and they can be sitting at from there to there and they just email. [4: 194-196]

Another interviewee lamented the decreased integration into a common environment for offsite workers who communicate online, and she said:

> But I still get a very strong feeling that they, I, I feel they are isolated…because I don't see them in the corridors, I…mind you it's only my fourth week in this job, but I don't feel as though, I'm not sure when they're available and not available um, it's taking longer for me to understand what they do, whereas people that I rub shoulders with at lunch time and so on I sort of know who they are and what they do. [3: 170-76]

The same interviewee went on to say to talk about the highly personal nature of her workplace, expressing emphasising the importance of personal interaction in a gendered, primarily women's environment.

> I believe that people work well when they're physically involved with each other, you know what I mean when they can see each other, doesn't mean they have to see each other everyday or anything like that, but I think that the technology gives you an amount of flexibility which is desirable, um, there's also you know, the casual exchanges that happen in the kitchen when someone's telling you that their sister just had a baby, a celebration of things outside of their working life, whereas the technology allows you to communicate with each other about business and about work, but you don't know if that person's necessarily feeling well today or whether their mother died yesterday, do you know what I mean? That, I don't believe is available if we're communicating through technology[70]. [3: 187-1960]

---

[70] See also 20: 118-120 for the importance of being able to talk to people for 'quick answers' to 'difficult things' on the phone, rather than email.

Some interviewees said that ICTs have caused relationships to deteriorate or become impersonalised with other organisations. When asked if ICTs made her feel closer or further away from other people, one woman responded:

I think its further away—because you don't tend to see people [unclear] because you think I'll just email that person…I think we're more distant because of technology, because of computers, because I remember years ago, because I've been here for such a long time, you know, you just had so much more face-to-face contact with people…I don't think it brings you any closer, no, not at all. [11: 18-124]

For another, use of ICTs appears to have had the effect of weakening face-to-face networks:

Over the last few years there's been a change. We have what's called the network of Neighbourhood Houses in the west, it's now Netwest … [we] had a meeting of the whole network, now not everybody comes, but that's the first time we actually had a physical face-to-face meeting in about 3 years with the whole network and I just sort of think those sorts of opportunities are getting less and less. [11: 202-207]

However, for another worker, her local municipality still maintains a strong face-to-face network which is still important to her and many other people. While they might move over to email to notify people, there is nothing like face-to-face communication.

I don't look at it as improvement; I look at it as another tool of communication…we have what's called an inter-agency network meeting every two months, and everyone's welcome to attend, we probably mail out minutes, and we're moving electronically next year … Of the people that come to the meeting—and the attendance is usually 35-40 organisations, people love to come, it's structured so that people come have a coffee and chat and there's information, there's always a guest speaker, that relates to a lot of the groups that are there, and we have this standing joke at coffee break that you find a new person that you haven't spoken to. [24: 94-108]

Impersonalisation through email

The distancing effect also appears associated with increasing impersonalisation of communicative relationships for some people, though as the next informant noted, it may be a factor of personality as much as technology:

Do you feel closer or further away from others because of your use of technology?

Yeh, look, I do think it's impersonalised, I think it's impersonalised a lot of the processes, but then, then that's, that's also part of your own psyche and how you perceive things. As I said, I can talk the pants off an answering machine, so I have no problems in typing up a couple of words on an email or document or sending it off. It's equivalent to a fax I suppose, I don't see any great deal of difference there [8: 364.72]

Such changes can be tinged with sadness—-which the speaker notes, is contextualised by the interpretive schemes and norms of community work.

[T]here are organisations that I only ever dealt with via email, and yeh, that's a bit sad sometimes, because yeh as a community worker you've grown up with that personal contact, and yeh that's a bit sad, but most of it is more government agencies and that sort of stuff and sometimes it's [unclear] quite happy to keep them out there…[19:184-188]

Some informants felt the constraining effects of having to use emails, in sensitive contexts. Asynchronous communications conducted by text means were problematic for this person, despite the communication efficiencies which she noticed elsewhere in her interview in activities with her school council:

[B]ut my experience, no…I think I also find I have to be very careful with what I say in an email, especially school councils are a good example, there are things that I would never email, never communicate through email…I felt that if there are things that you would always do that there are things that you should do face-to-face or on the telephone but not through an email, you know, unless you spend a lot of time in the composition of your email and you know make it like an old-fashioned letter with lots of prefacing and explanation, but I find that's why I think email—I like to think of it as a business-like arrangement-type mechanism more than a something that where you do communicate on a more personal level. [18: 109-122]

Very similar sentiments were also expressed by another woman aware of the limitations of electronic communications in what she had described as politicised environments with various people in the community:

I think sometimes, I've been caught out in the past with emails, that um, people don't, you can take things the wrong way, or especially if they're a bit personal or something like that, and so I found that if I'm unsure about something I'd get on the phone and clarify it with people rather than—and that was just something I learnt in…people's language skills can be quite different, so

body language is a big thing in how people communicated, it's now words on a computer, and that was a skill I had to learn I guess because I did go through where I was reading something and I thought hey this doesn't—and the person didn't mean to sound like that—but when they re-read it realise—yeh, well I did take it that way—and so you have to be really aware that people have different levels of how, their ability to communicate so email's so, if it's subjects that are a little bit tricky, it's probably better to be on the phone or to meet someone rather than email. [9: 298-309]

Chapter conclusions

For Giddens, the study of time and its intersection with geography—the structuring of activity across and through distancing effects of time and space (for example, the complexities of paid and non-paid work in Neighbourhood House workers' lives), is particularly relevant in the era of 'radical disjuncture', where the prior necessity for co-present communication has been revolutionised by forms of electronic communication totally separated from the need for co-presence (Giddens 1984: 123)

In the case of Neighbourhood House workers, the effects (and affects) of distanciation work are multiple, the result of a mélange of personal preferences in communication styles. Have ICTs made people feel closer or more distant in the group of workers who were interviewed? There is no unanimity on this issue, and it appears that 'it all depends'. In an environment such as the Neighbourhood House, with the high value placed upon co-presence in the processes of community development and education, it all depends on what is meant by communication and information, and the task at hand. People are very used to communicating with a level of (frequently gendered) intimacy which cannot always be conveyed by electronic communications.

One way of approaching the problem is to think about the forms of 'indexical utterances' (Mautner 1997) used by Neighbourhood House workers. Their language reveals particular constructions of time and place. These include taken-for-granted forms of gendered and situated (Suchman) practical knowledge (Giddens) and communication that remain of normative value to them, particularly since these are familiar as part of the practice set of Neighbourhood House work, and only a step away from how they connect with domestic life. They also act as managers of information for their funders or other organisation, where

a prime means of communication is formalised reporting, rather than person discourse. With the complex verbal and non-verbal communication and normative dimensions of technologies of care, we can see how difficult it can be to channel such indexical discourse through the means of ICTs. So much interaction is contingent and human-centred, depended on highly complex verbal and non-verbal interaction that is difficult to channel through the substantially text-based medium of ICTs. Even verbal telephony between familiar actors is dependant upon a host of on-going mutually-shared assumptions. This explains the concern or hesitation which some Neighbourhood House workers express about electronic communication for some forms of ambiguous and personalised work.

Thus, while some of the practices of Neighbourhood House work can be conveyed and certainly sped-up and enriched via ICTs (consider the case of the old woman whose isolation was broken down via the use of ICTs socially, p. 280), they are best sustained by 'thickly co-present' and reflexive interaction, in which the client's needs are responded to, or the communicative to-and fro of community development is supported with fellow workers.

One interview in particular, highlighted this complexity for me, and typified the context of many interviews:

> There's about four coordinators that…we're probably long term, two, we have met face-to-face over doing different things, we've worked on various things together, and we are personal friends now I would say, and they would say that of me too. That—I don't see that happening if the only interaction with another person is through the email, you can't build that up, because relationships or personal contacts or that sort of thing they have to be in person, that's what it's all about… [11: 241-246]

Intensive relationships within the technologies of care take years to develop, and can even become friendships within the Neighbourhood House movement and perhaps beyond. From a feminist perspective, this sort of communication is related to the different cognitive styles of men and women, in which men seek *mastery* and women *intimacy* (Singh 2001: 410). Effective communication is rooted in the profundity of complex shared *meanings* between people, as distinct from discrete, telegram-like *informational messages*: 'a message is a very narrowed down model of meaning- a one-dimensional model of meaning' (Myerson

2003: 162). Such one-dimensionality may be the wish of model of perfect undistorted and technically perfect communication between receiver and sender, developed through Weaver and Weiner's highly influential 'conduit metaphor' in information theory and systems design (Day 2000) .

Weaver and Weiner's conduit metaphor is therefore potentially bounding and exclusionary of non-dominant forms of communication that lie outside their particular paradigm (Day 2000). This confirms Foucault's concerns about control technologies and the privileging of particular forms of knowledge (i.e., communication) determined through particular language definitions and exclusions (see p. 107ff.)[71]. Though Foucault is not as explicit, we could argue that the broader context is the capitalist mode of production, which has turned to the production and management of particular forms of information and communication as an industrial priority for the new 'cybertariat' (Huws 2003), which includes more disciplined business communication and information behaviour for such white-collar organisations as Neighbourhood Houses.

Such an informational or conduit metaphor is thus unsuited as a metaphor for the multi-dimensional discourse present in Neighbourhood House work. Neighbourhood House technologies, human and artifactual, are embodied in creative, contingent, and emergent activities, particularly activities that focus on community, rather than individual behaviour. The technology within Neighbourhood House work is at its core human, not artifactual. Informational messages cannot include the discourse inherent in deeper forms of distanciated communication wherein communication that has real meaning is 'coupled' with the 'lifeworld', which Myerson calls:

> That shared sense of the significance of human actions and experiences, without which the individual is left stranded and searching for a human meaning to their life (Myerson 2003: 158).

---

[71] If we consider the 'conduit metaphor' to be a trope for the instantiation of technologies of control in Western society, then we can consider that a critique of it as a *technical system* is a micro-genealogy of power, one of Foucault's 'infinitesimal mechanisms, which each have their own history, their own trajectory, their own techniques and tactics, and then see how these mechanisms of power have been—and continue to be—invested, colonised, utilised, involuted (sic), transformed, displaced, extended etc., by ever more general mechanisms and by forms of global domination' (Foucault and Gordon 1980:99).

13 Time

The discussion of time by the informants is intimately tied up with the work they do across the board (paid and non-paid, such as volunteer work), as well the fact that ICTs can speed up the pace of work that they engage in through creating more time that is filled in by more work. ICT's do not necessarily liberate them from work burdens[72]. This comment confirms Huws' observation that technology has augmented what can be done in the home and work, as well as what has to be done to support it. The burden of unpaid labour—most often measured through *increased* housework and other forms of family support that take *time*—largely falls upon women. Their work and life activity, as it is stretched across the time-space continuum, is consequently embedded in particular social-gender relations within the context of broader societal divisions of labour and control of the means of production (Wajcman 2001; Huws 2003). At the same time, the effects of ICTs, as observed by Giddens and the time geographers (see p. 158), lead to particular constructions of time (sped up, slowed down, or suspended) and new ideas about spatial processes and relationships.

However, in the research interviews, I unsuccessfully attempted to elucidate an historical record of the change in work practices that had occurred, but few workers could give a blow-by-blow chronology of the technical change, and not surprisingly, one worker said that 'I can't remember a time when it wasn't like that'[73]. The following description of work encapsulates some of these issues:

> *So you're saying too, that your time is structured around the computer?*
>
> Absolutely. Absolutely, and I suppose again. It's because we're down to three people in this office and one computer it's like 'let me out, let me out, mine's more important than yours, I've got to get this…[unclear]
>
> *So has it made time more, has it made time seem faster, has it made time seem slower?*

---

[72] Many of the interviewees mentioned how 'freed up' time was <mark>filled</mark> by more work.

[73] 22: 102-103

Definitely faster, I think you get through, I honestly do you think you get through twice as much work, sitting working on a computer all day, um, I do remember piles of handwriting your letters, and then leaving them for somebody 'and when you've got time, can you type these up,' or you know, um, the different now where you can just sit and I can quickly just do that, you know…[2: 271-284]

The speed of the technology and the new things that it can do—instead having someone else take care of the piles of letters, it is now your own word-processing work—creates demands on time, and the matériel available (in this case, shared computer time and access). It makes for sped up expectations of what can be done in work-time as well. One worker spoke of the almost inevitable attraction of technological 'immediacy'[74].

For some people, however, this response is manipulated by the technology, and is not natural, like Pavlov's dog, without a conditioned reflex. Strong agency effects can be deciphered in response to email.

I will leave things, but I know it's very hard not to get—we're a Pavlov's dog—when something makes a noise at us we respond. If you're email goes 'blmm' at you, um, your automatic response is to go around and answer that, and so you have to make—and I resent that in a way—um, because I know that most of it's going to be you know just other piles of stuff I just have to um pile ... through. So I will you know ignore it as much as possible but I think that yeh it's basically the same thing. Something makes a noise and gets your attention, throws colour movement at you, you respond whether or not that's a rational thing to do or not. It takes up a hell of a lot of space. [5: 306-313]

It is also of interest that the interviewee spoke of stimulatory 'noise' (i.e., the spur to action) caused by ICTs, taking up a lot of virtual or real 'space' and causing a reaction, rational or not: a reference to the agency effects of ICTs in moving across into the reconstitution of activity in time and space. However, while space and time are seemingly infinitely (re)producible, human capacities are defined by the capacities of the body to respond to the potential for its extensibility (Adams, Foucault, Giddens). People are constrained by particular time and space 'bundles' within the 'stations' of their daily activity, notwithstanding the potential for electronic extensibility (see p.159ff.). In terms of

---

[74] 7: 158.

sheer processing power and noise-making (the 'blmm'), ICTs can do much more than humans in creating these new time-space bundles and stations, but human beings cannot always effectively or adequately respond to machine bench-marks. We only have two hands and a limited capacity to react to a range of stimuli simultaneously and to 'enter' into new dimensions (such as managing synchronic and asynchronous time relationships). When queried about the sort of time arrangements that were created in response to such stimuli one informant answered when queried about the sorts of time spaces she was dealing with:

> Different sorts of time, but it's time you find something else that you would not be doing before that needs to be done. I don't think it gives me any free time, it just gives me more time to fit in the things that you need to do in the shorter period of time, I know that you know I can enter my accounts or do whatever I can in the shorter period of time, rather than handwriting big ledger sheets and that sort of thing. [19: 128-132]

When it can be managed, new forms of time are perceived to be bound up with new forms of agency, including work efficiency. Email takes the chore out of routine activity such as having to type letters, create electronic ledgers, or arrange physical meetings. Efficiencies abound, and there are great expectations of what can be done with ICTs,[75] but there was also an awareness of the need to continue to manage human work time. Email's alarm-clock effects have to be managed. As part-time workers with many tasks to manage or carry out, prioritising is a familiar action, and messages and tasks associated with ICTs are no exception. Just because something is received by email does not provide it with an 'electronic privilege' in comparison to other things going on in the organisation. The next few quotes make the point that ICTs and their information transactions are not central to technologies of care. ICTs do not push them beyond what are regarded as workplace limits. There is no corporate incentive to go the extra mile (particularly in a unionised environment). The following worker had mentioned that she had learnt how to skim emails and prioritise in her 15 paid hours a week which in her words is a 'full-time job'[76], and:

---

[75] Efficiencies: for example, 8: 389-398; 13: 175-179; 14: 177-186; 18; 98-10; 22: 104-108; 19: 128-132; saving meeting time, e.g., 6: 136-138;

[76] 10: 239-240

> Well, with, what I'm finding because I'm working part-time, I have to actually just keep prioritising what's urgent and important, and I do the same for my emails. I tend to, because it's just a time constraint that I'm under at the moment with the workload that I've got. [10: 323-328]

In discussing her response to emails and phone calls from me for an interview, another worker implied that while *my* phone and electronic prompts reflected certain urgency, her personal management style and priorities were something else:

> No, because I guess it's like with everything. I'll get a—like your call. I saw your call and I saw your email and I responded to neither—sorry, you know what I mean? Oh yeh, gee, Larry OK. But I guess there were a lot of other things happening that was all, other things that took priority…I say that as an example, because I guess within the work environment you priori—you shift every, usually 30 to 90 minutes, your priorities would shift, and I know that my actual down time, when it's down time, when I have a lot of staff and programs running, my concentration span is only 45 minutes, most people's is anyway. [15: 263 269]

The presence of more emails can also indicate an information overload that needs effective information management skills. Asynchronous messaging has met the problem of real-time synchronisation, as well as increased demands for agency on the part of workers:

> I think electronics has made this job bigger because you might sort of think—I'm a bit interested in that website so you might then register and get their newsletter and get more and more and more emails and I'm getting to the stage where I think ah that's from that organisation I really don't I really haven't got time to read that now it's not a hight level of importance so I tend to have all these unopened emails that I sort of shown an interest at some stage, say in housing issues or something like that, and—you—it's hard to get off email lists, it's easy to get on! Can I say that? [laughs] [7:213-219]

Thus, the 'push' of electronic time, in seemingly forcing workers to act more promptly in response to speeding up of communications results in some resistance, and there can be an awareness of a Pavlov's dog reaction to the overload (set off for example, if a worker has a sound set up for newly arriving emails). This technologically-imposed overload is reminiscent of what Harvey has called 'time in advance of itself', with a potential for discontinuity (Harvey 1989: 225). But at the same time, as already observed, there are positives to this new form of noise, with new forms of a time-communication nexus that supports administrative efficiencies.

Furthermore, though it is not prominent in the interviews, it appears that for many people, work time is not considered as paid or non-paid work, but as part of a totality of home, work, and volunteer life into which certain tasks are managed in the time-space 'bundle'. Yet, consistent with other findings, the connection that time-efficiency and email offers does not substitute for the over-riding technologies of care. ICTs of themselves do not have a special purchase or privilege over other activity.

Part III: Findings

This part of the thesis compares conceptual and theoretical frameworks developed as an outcome of the interviews, based upon a Grounded Theory Methodology, to theoretical and conceptual insights from theories of structuration and other relevant material discussed in Part I. This is achieved in several ways. First, key conceptual and 'middle range' theoretical insights (see p. 22), drawn from the field data are compared with relevant theories about the nature of technology in other sorts of organisations, arising from the review of prior theory in earlier chapters. Second, new insights about smaller community-based organisations (through the activities of their workers) are integrated at a higher level of abstraction into the structuration framework as developed by Giddens and particularly Orlikowski, including further refinement of a model of structuration that can be used as the basis for analysis of the structuration of technology in a community-based setting (see p. 219ff.). These two activities thus provide the core elements of a diagnostic framework and potentially a practical tool for the enlightenment of researchers, policy makers, and others interested in technology use in community settings. Finally, recommendations are made for the application, and further research into, the findings of the thesis.

14 Theorising technology

People-focussed technologies of care

Interpretive and communicative practices are strongly linked to strongly embedded norms and action that can be summarised as technologies of care. They are central to the ongoing life of community-based agencies such as Neighbourhood Houses as they reach into local geographic and human and electronic networks. Technology, from the perspective of the practice of human services and community development, can be understood as a workplace resource and 'instrumental ensemble' (see p. 57). It consists of an assemblage of reproduced practices and artifactual resources to support social solidarity and agency, particularly at the boundary of the private and public spheres (see p. 66). ICTs as part of this ensemble influence the shape of communications and action, subject to human intervention and modification. However, as part of the overall technologies of care, ICTs are not pivotal as the vehicle of communication and action in the organisational life of Neighbourhood Houses, but must be conceived of as part of a process of action and agency for community development and support.

However, contra Webb (see p. 90) and Habermas (see p. 71), technologies of care, as part of the 'lifeworld', the world of everyday communications, meanings and understandings, are not strongly colonised by ICTs and a culture of technological rationality, but rather, ICTs (including the hardware, software, and design processes that support them), have an adjunct and subsumed function in supporting a cycle of knowledgeable and skilled practices or technologies in the area of interpretive community support.

Furthermore, as a type of social institution engaged in community support, Neighbourhood Houses are dependent upon the embodiment, through their activity, of particular structural principles or value sets that provide for what has been identified as 'systemness' (see. p 156) , within particular locally-embedded and enacted environments, and these act as a technology for action. There is an intersection between the values or strips and scripts or schemas of (gendered) social reproduction from the home and the activity of Neighbourhood Houses resulting in characteristic culturally-located 'memoryscapes' of

community care and support (see p. 235). These both provide a vehicle or medium for conveying people-centred workplace meaning and values, while at an affective level, give meaning (and agency) to places such as Neighbourhood Houses as embodying particular value sets across time and space.

The continuing significance of human agency

Community workers demonstrate strong and knowledgeable agency within the context of their overall 'technologies of care' as a normative value set at work and home. They confirm a key principle of structuration theory, that humans have the capacity for agency and this is carried through in everyday interactions (p. 142). People are not passive victims of greater structural forces, or conversely, micro-level or institutional forces of socialisation, as depicted in traditional Marxist or structural-functionalist theory. Relatively autonomous human agency continues to be at the core of community work such as that found in Neighbourhood Houses, despite the presence of ICTs. New technologies are normalised and accepted in everyday work and home life as part of a 'technological biography' (see p. 85) to the point that by and large, their effects are generally well-managed, even if around particular issues, such as administrative reporting, there are points of pressure and annoyance. ICTs are very useful as adaptable communication tools, but this is not a simple, deterministic relationship. Workers can, as part of overall technologies of care, situate ICTs as ancillary, within the context of other prevailing tasks (see p. 124). Drawing upon a metaphor from the women interviewed, they can 'wear many hats and do many things at the same time' (see p. 267).

Gender and technology

Contrary to prior theories and speculations about the relationship between women and technology (at least in industrialised, westernised economies), gender can no longer be theorised as an inhibitor of personal agency with technology, or conversely, that ICTs have an inherent bias against women (see p. 123ff.). Rather, gender provides for a more nuanced approach in the utilisation of ICTs as social tools—particularly around the importance of communicative style—in the use and choices of ICT use by women. Authoritative resources—predominantly the value set of NH work, drawing upon feminised community

298

development practices, draw upon allocative resources for care and support—such as the physical facilities of Neighbourhood Houses themselves, and aspects of artifactual ICTs.

The theories generated are a confirmation of Haraway's speculations that the uses of ICTs by women (and men with a non-traditional value-set) are a skilled and situated practice with a particularly situated knowledge (Haraway 2000). ICTs are constructed within the 'messy materiality' (Huws, see p. 124) of particular ways of communicating, teaching, caring, or the private sphere of homemaking, subject to greater social and political forces and influences that break down the boundaries between the private and public spheres. However, whether or not women have become a literal 'hybrid' of machine and human as suggested by Haraway is open for further speculation.

Artifactual technology

Theoretically, ICTs in community settings can be reconceived as a machine agent embedded in complex sets of support, teaching, community development and home-based relationships. While the technologies and their genres such as email that were investigated for this study are commonplace and relatively simple systems (PCs, Internet), they are part of complex, networked and extended systems of action, knowledge, information and support that reach into local communities and the home. The human dimension is invariably raised as a key factor in ICT use. ICTs are only one (but important) element in the networked process which brings about better lives for people.

ICTs are therefore regarded as useful tools, with attractive agency because of the pragmatic communication possibilities they offer, rather than a discomforting adjunct to work or home life (Singh 2001). Yet there is a danger, through a deterministic approach to technology application and implementation, that authenticity and originality can be subsumed by an attraction to technological, rather than interpretive solutions. However, ICTs are not tools that universally determine or govern communication, particularly forms of communication and interaction that cannot be reconfigured into templates, formats, checkboxes, or asynchronous email conversations. The spectre of domination by Foucault's capillaries of panoptical power has not has not yet been achieved (see p. 122). Such a socially-networked or embedded, yet relatively autonomous communicative artifact can be

distinguished from the administrative use of technology that is also an adjunct to more formal systems of governance. By and large, if technology is trusted and reliable, then it can be incorporated into everyday life. While at times ICTs, particularly in relationship to administrative responsibilities can appear to have strong agency, this is a controllable, and is rationalised as an essential, and ordinary, part of the process of work activity (and with the incorporation of technology more broadly, home-based, domesticated technology). This explains the interviewees' lack of real concern about power imbalances in technologically-constructed relationships at home or work.

Extensibility/distanciation & community

Neighbourhood Houses are at the intersection of the home and the wider world of social support, education, and the public sphere, and as the interviews demonstrate, as valued geographic sites of particularised and bundled 'enaction' (Permezel, see p. 70) where lived practices with rich symbolic meaning come into being on an ongoing basis (Massey, see p. 170). ICTs complement that activity, the 'spiralling' effects of which are included in technologies of care. Networks (personal and electronic), which bridge time and space are thus underwritten by the activities of people, supported by ICTs, particularly contextualised by gendered, and frequently geographically and time-'bundled' relationships in social reproduction (see p. 161).

Even for Neighbourhood House coordinators, the recognised benefits of faster and extended communication with old and new contacts and communities is rooted in the profundity of complex shared *meanings* between people, as distinct from discrete, telegram-like *informational messages* conveyed through technology. Personal agency continues to be critical, though that deeply-shared, previously co-present shared meaning can be lost through the 'frictionless' environment of electronic distance (see p. 176), and this explains the preference for personal face-to-face communication by some people, rather than email for more business-like, unambiguous communications.

The picture of an 'information world' that can directly reflect a real world of such ambiguity is ontologically flawed. ICTs cannot adequately serve as a complete bridging medium across time and space in the world of community support. There has been a

presumption and reification of a rationalised picture of 'electronised' business communication (assuming that such forms of communication can be linear and unambiguous), as the prime form of work communication—or even the focus of work itself—when this may in fact may not be the most *effective* means of general communication.

Governance

Conterminous with the concept of technologies of care, governance (or governmentality) is an assemblage of different process, but for community-based organisations such as Neighbourhood Houses, it can be understood as primarily a relationship between personal agency and management of everyday work (and connected aspects of home life), as a type of reflexive self-governance (see p. 117), incorporating understandings of control and agency in relationship to the opportunities and constraints offered by ICTs.

However, it is difficult to theorise the relationship of micro-level self-governance to the policy-level interest in local governance (see p. 56ff.) as a means of improving government efficiencies and connections with communities, beyond some indicative concepts that emerge from the data. While the empirical data from the interviews suggests that there is a strong degree of active and knowledgeable agency in relationship to the many tasks at hand, there was less direct conceptualisation or theorisation about greater 'structural' and determining forces which emerge from other administrative, funding, or political environments. From the data, it can be seen that there is an awareness of the micro-level effects of certain forms of administrative control as suggested above (see also Foucault's technologies of power, see p. 108), as well as a potential Pavlov's dog effect from electronic prompts (see p. 292). However, this is seen as controllable within the context of everyday work. Administrative governance effects are not seen as threatening in the sense of all encompassing deadening theory of top-down 'rationality' and control (see p. 87) which, to recapitulate, Rose described as:

> P]roblems, means, actions, manners, techniques and objects by which actors place themselves
> under the control, guidance, sway and mastery of others, or seek to place other actors,
> organizations, entities or events under their own sway. (Rose 1999b: 16)

There is something much more subtle going on most of the time, due to the strong, knowledgeable agency of workers. In a worst-case scenario, there may be strong-arm techniques, but in the circumstances of community-based organisations such as Neighbourhood Houses with their committees of management and familiarity with power relationships, this does not appear to be the case. As Rose also suggested, there is a relative autonomy in the conduct of everyday work, *notwithstanding* certain constraining circumstances that can be analysed at a higher, critical level.

Furthermore earlier discussion established that a fined-grained policy (and by implication, practice and theory-based) understanding of the nature of artifactual technological use in community-based organisations as a means of improving the quality of service relationships is largely absent from the literature, at least in Australia (see p. 57). The evidence from the thesis suggests that for theorists or policy makers and others who design information systems that work with community-based organisations, a theory and practice frame for electronic governance that is more response to the idea of technologies of care with particular and localized interpretive and normative emphases that draw upon artifactual technology is highly desirable.

15   Community-based models of structuration theory

The theoretical modifications of prior models of the structuration of ICTs applied to the case of community-based organisations are particularly useful because they can incorporate a rich picture of community-based organisation, adding to knowledge of other forms of organisation studied by scholars such as Orlikowski and her colleagues. The key principles of structuration, and key modifications reviewed and developed so far are first reviewed.

The dimensions or modalities of structuration—the theoretical elaboration of how power is used— include *patterns of communication* (signification), *use of facilities* (the capacity to dominate, access and use resources), and *norms of behaviour and conduct* (means of legitimation and codes of morality). Power is the *regular and routine* mechanism for achieving sets of transformations. Power is generative: it provides the capacity 'to do otherwise'. Power is conducted through communication, the use of resources, and the norms/sanctions for particular beliefs and practices. Interpretive schemes draw upon what Giddens calls 'stocks of knowledge'. Such stocks 'form the core of the mutual knowledge whereby an accountable universe of meaning is sustained through, and in processes of interaction' (Giddens 1979a: 83). As a consequence, by drawing upon stocks of knowledge, actors use their power, within particular moral or normative frameworks. Thus, 'actors draw upon the modalities of structuration in the reproduction of systems of interaction, by the same token reconstituting their structural properties' (Giddens 1984: 28-290), to create social systems and institutions with particular characteristics. All these activities occur within particular constructions of local space or place (embodied in the Neighbourhood House), and they also have a strong affect on types of preferred electronic communication.

Neighbourhood Houses (as represented by their coordinators), thus constantly draw upon a particular, historically-located interpretive scheme based around ideas of place-based community development, using the power of agency to draw upon particular authority and resource sets (the authority conveyed by being a skilled community development worker, and the resources of computers and other means), within a particular normative community

development framework. In addition, the personal biography of Neighbourhood House workers is strongly connected to a particular culture of paid and non-paid work, linked to a particular value set about care and domestic activity that inter-operates between home and workplace, and vice versa.

As the research has established, specific aspects of the suggested dimensions of structuration can be theoretically modified, including the materiality and agency of inanimate objects such as ICTs as a form of 'strong' resource or property. In contrast to Orlikowski, ICTs are not presented as a central dimension in the process of organisational structuration, in order to prevent an analytical bias. This finding of course, is one that is relevant to the study of ICT impacts in many different sorts of situations, but it has been highlighted in the study of the Neighbourhood Houses.

As already established, Giddens underestimated the agency potential of ICTs (see p. 179). This highlighting of artifactual technology, at least for analytical purposes, has been used by Orlikowski, in particular, to construct a theory for the structuration of technology. In addition, Actor Network Theory, has alerted us to the sociological significance of ICTs through their *perceived and attributed agency* as well as at times, as complex responsive systems, a degree of structuring agency in being a vehicle or medium (and outcome) of technical processes. Thus, from the perspective of the analysis of ICTs, possession alone does not explain the significance of ICTs in the context of larger technical social systems. Only when incorporated into processes of structuration does technology have a sociological place. More accurately, 'commandeered' resources can be regarded as 'resources-in-practice', akin to concepts of 'technologies-in-practice', 'technologies-in-use' and 'knowing-in-practice', as developed by Orlikowski in particular (see p.193).

The use of artifactual technology, as a system for storing and communicating information thus affects all the dimensions of structuration: it provides a distinct interpretive scheme through its particular language/s and semiotic mechanisms; as a form of resource it is drawn upon by humans, but also draws upon other networked resources and engenders human responses. In the case of the workers interviewed, the Grounded Theory developed through the study of workers in Neighbourhood Houses has demonstrated that ICTs are but

one of a series of technologies which exist, as part of a circle or network of 'technologies of care' that dominate working life, and extend beyond the workplace in a mutual relationship with home-based care, located in particular extensible (see p. 159) time-space continua. To take up Giddens' concept of the duality, and Orlikowski's application of the concept to the study of technology, a new axiom for further theoretical development and empirical investigation is that:

> *'Technologies of care, as a system of human and technical agency and processes are the medium and outcome of the structural principles they recursively reproduce by means of and through the media of time and space'.*

Bringing together these concepts, consider the earlier picture of electronic extensibility (see p. 173) which brought together bounded location, the dimensions of structuration, and the time-space continuum. While the focus in this thesis has been upon Neighbourhood Houses, it has highlighted the salience of particularised permutations of the dimensions of structuration subject to specific institutional environments. Thus, I have argued that the communicative/interpretive and normative dimensions have a major scene setting role in how agency is conducted in Neighbourhood House. If we think of the diagram on p. 173 as depicting the movement of these dimensions through time and space, then for each bundle of action (either terrestrial or virtual), agents work through these dimensions in setting up the 'mental' and physical bundles in which they conduct their activities—in the case of the Neighbourhood Houses, what I call technologies of care. A more fine-grained study could closely examine particular bundles and the construction of the human/machine relationships in them. For example, an additional level or permutation of the model could look at technologies of care from the client side and how they perceive and use of technologies in a community development environment, and the connection, if any, with their extended relationships and activities that are conducted through the medium of ICTs. These will provide valuable information about how people interpret and act upon and with different ICTs in different environments. These insights will not only help theorists of human-technology interaction, but also provide valuable information for community-based organisations, policy makers and others about the place of 'technology' in the life of community based organisations.

16   Recapitulation and implications for research and practice

Questions posed in this study

The following questions were posed at the start of this thesis (see p. 9), and are responded to in terms of the findings of the thesis.

1. What is the place of technology in facilitating information and knowledge flows at the most local level, in such as community-based organisations, as extensions (through funding and policy) of government social policy?
2. How do people in such organisations understand those technological relationships?
3. What bodies of theory can help us to better understand the process of 'governance' as it affects people and technology artifacts, as an 'instrumental ensemble' of processes and behaviours embedded in particular organisational environments?
4. What new theories and processes can help to inform community-based organisations, government, and other theorists of community and technology?

Answers found by this study

These questions are answered as follows.

- The research established that technology is one part of a complex set of norm-driven relationships and activities with different forms of technology, which can be summarised as 'technologies of care'. Human agency is critical in the actualisation of processes that are embedded with technical and skill. As suggested earlier (see p. 305):

  'Technologies of care, as a system of human and technical agency and processes are the medium and outcome of the structural principles they recursively reproduce by means of and through the media of time and space'.

- The underlying data for developing a conceptual and theoretical framework was managed via a productive Grounded Theory approach, though the focus was on theory generation, rather than empirical accuracy. The interviewed workers are dependent on personalised interaction with each other, their colleagues, and their clients. While

artifactual technology such as ICTs are useful as a mechanism for information efficiency, and communication across time and space distance, they cannot, by and large, substitute for the caring, educational, and support relationships that are key to the work of community-based organisations such as Neighbourhood Houses.

- However, the technology relationship must be contextualised, again, as one part, and not necessarily the core part of activities. Community development and education are not 'desk jobs' that can be re-programmed into computer communication.

- Underpinning potential opportunities for the growth of technological uptake and integration are the key issues of resources and sustainability. While these issues were not investigated as part of the thesis research, the *Empowerment for the West* project that was conducted during the initial stages of the research process (see p. 30), established that there are basic infrastructure issues which underpin any attempt to promote further effective use.

- Information and Communication Technologies are a complex and powerful tool with many dimensions. It is often hard for people to describe in detail their relationship or understanding of such tools, but the apparent poverty of their expression should not mask the fact that a complexity of relationships is at play. Practical knowledge is not always easily expressed outside of its practice frame. Consequently, the challenge is to find a means of understanding, expressing, and then working with what such tools mean to people, how they are practically interpreted, and how they sit in the lives of workers. As such tools are more readily accepted and domesticated into everyday life, it is also important to try to develop an analytical vocabulary that is situated in the environment in which people work so that 'technology' is can be accurately described and understood as part of their work, not something 'specialist' and 'technical'. This highly granulated and subtle process needs to be taken acknowledged in the theorisation of technology and the implementation of different technological or management or teaching systems.

- However, in the literature, there is a tendency, based on a Foucauldian reading of governance, to assume a somewhat simplistic and hegemonic outcome to relationships

with ICTs based on theoretical positions which support a) an understanding of power relations in favour of dominant or hegemonic forces and b) a feminist view of technology. These viewpoints underplay the potential for active and knowledgeable agency on the part of women particularly in light of recent developments in personal technology. This is a significant finding, which means that a different approach to women and technology can be in fact undertaken. Of course, whether such a positive approach to *all* women's (and some men) interactions with ICTs, needs to be carefully investigated and qualified.

- The work of Rose, in particular, in conjunction with Giddens' structuration theory, strengthens a position which gives autonomy and capacity to human agents (such as the predominance of women interviewed) in relationship to ICTs. That autonomy takes place in particular time-space continua that are the locale of human-machine interaction. At the same time, ICTs are a vehicle for constructing new relationships for this autonomous, yet socially networked activity. Actor Network Theory also helps to unpack the subtleties the relationship between people and machines. A more robust theoretical framework resiles from determinism, and this is given support by more recent feminist thinking about technology, as well as the responses of women themselves. Women can control their technological relationships.

- Giddens' structuration theory, particularly in conjunction with Orlikowski's work, therefore offers a justification for taking particular technological cultures (such as the technology of care) seriously in analysing the place of ICTs in some forms organisational life. Of course, the thesis has only looked at key individuals in one group of organisations in a particular geographic region. Whether or not the findings are extensible across the sector is something which warrants further investigation. While the focus has been upon smaller organisations, given the Australian government's own interest in developing a non-profit sector policy or advice council (see p. 81), more effective ways of capturing micro-level knowledge, in conjunction with good theoretical frameworks are a desideratum for a better understanding and interaction with technology in the community sector. The research also indicates future agendas to

investigate work and home-based work with ICTs, including gender or occupational distinctions.

- It may well be (as Orlikowski's work with large corporations reveals), a range of organisational cultures will be discovered. For government, this new evidence can sensitise the policy maker and technical planner to the need for careful attention to what people know, and how they behave in conjunction with ICTs. For the theorist of technology, it offers new pathways to understand the complexities of the interaction between people and technology in institutional settings, large and small. For both policy-maker and theorist, it also points to the importance of actually talking to research subjects and taking quite seriously their experience and knowledge of socio-technical structures.

Recommendations for future action and research

The thesis findings lend themselves to the following recommendations.

1. Grounded theory is a powerful means for generating useful information. It could also be used in conjunction with other techniques (quantitative), for empirical exactitude if required. The technique demonstrates that people have expert knowledge, if the method of inquiry is appropriate to the situation. It could be used by those with a much more traditionally technical focus to gain a much better understanding of people's needs and reactions to different technologies.

2. Government, planners and academics in fields such as sociology, planning, social work, community development, and welfare studies could productively utilise the concept of local technologies of care (or variants of it) as a means of better understanding the situation of technology in community-based organisations, associated projects and interventions, and the cycle of social and community complexities they encompass. There may indeed be opportunities for the further integration and modification of ICTs (such as social softwares), but these can only be developed and implemented through increased attention to the particular cultures and operational priorities of community-

based organisations. Such information can be gathered though Grounded Theory or other interpretive methodologies.

3. The concept of 'technologies of care' could be used to equally sensitise community-based organisations into thinking about human and artifactual technologies in new ways. The *Empowerment for the West* project originally revealed some underlying conditions (at least in the case of Neighbourhood Houses) about the infrastructural supports that are needed for more effective use of artifacts, including technical backup, training, but a more total picture of organisational cultures and environments has been gained through an additional layer of theorisation. By suggesting a 'conceptual balance' between the two forms of technology, balance is created against techno-determinist philosophies, but at the same time, community-based organisations can think more effectively about the relationship between action processes which remain in the domain of care, administrative actions which can be more effectively dealt with through technology, as well as more problematic areas of action which need further exploration. This will help them with conducting needs analysis in response to questions about the place of technology in their work.

4. In light of the above a refined and more practical version of the structurational model for analysing technological cultures would be of great assistance to community-based organisations. The activity being conducted with a number of other organisations in Australia as part of a consultancy for the Commonwealth may be an opportunity to develop a practice model (see p. 81).

5. The findings about community-based organisations as a structural arrangement with strongly held values may have something to teach business and government about how to investigate their particular cultures of people-technology interaction. A further adaptation of structuration theory with interpretive methodologies to investigate other small organisations such as small business, with its strong orientation towards independence and family control) could be highly fruitful (Ogbonna and Harris 2005).

References

Abercrombie, N., B. S. Turner, et al. (2000). <u>The Penguin Dictionary of sociology</u>. London, Penguin.

Adams, D. (2004). "Usable knowledge in public policy." <u>Australian Journal of Public Administration</u> 63(1): 29-42.

Adams, P. C. (1995). "A reconsideration of personal boundaries in space-time." <u>Annals of the Association of American Geographers</u> 85(2): 267-285.

Adams, P. C. (1999). "A homemaker in the information age." <u>Urban Geography</u> 20(4): 356-376.

Akrich, M. (1994). The de-scription of technical objects. <u>Shaping technology/building society: Studies in sociotechnical change</u>. W. E. Bijker and J. Law. Cambridge, Mass., MIT Press**:** 205-224.

Althusser, L. and B. Brewster (1969). <u>For Marx</u>. London, Allen Lane.

Anderson, B. (1991). <u>Imagined communities: Reflections on the origin and spread of nationalism</u>, Verso.

Archer, M. S. (1982). "Morphogenesis versus structuration: On combining structure and agency." <u>British Journal of Sociology</u> 33(4): 455-83.

Arnold, M. and M. R. Gibbs (2003). Intranets and local community: 'Yes, an intranet is all very well, but do we still get free beer and a barbeque?' <u>Communities and technologies: Proceedings of the first international conference on communities and technologies, c&t 2003.</u> M. Huysman, E. Wenger and V. Wulf. Boston, Dordrecht, Kluwer Academic Publishers**:** 185-204.

Australia. Information Technology Review Group (1995). Clients first: The challenge for government information technology. Report of Minister for Finance's information technology review group. Canberra, ACT.

Australian Bureau of Statistics. (2000). "Discussion paper. Measuring social capital: Current collections and future directions." Retrieved 20 March, 2002, from http://www.abs.gov.au/852563C30080E02A/0/6CD8B1F3F270566ACA25699F0015A02A?Open.

Australian Bureau of Statistics. (2001a). "4441.0 voluntary work, Australia." Retrieved 1 July, 2003, from http://www.abs.gov.au/Ausstats/abs@.nsf/Lookup/FC4EF7625FCC6809CA256A710004703E.

Australian Bureau of Statistics (2001b). 8696.0. "Community services, Australia." Retrieved 1 July 2003 from http://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbyCatalogue/26122932A97A2ADBCA256A95008004A0?OpenDocument

Australian Bureau of Statistics (2005). 8129.0. "Business use of information technology." Retrieved 1 July 2006 from http://www.abs.gov.au/AUSSTATS/abs@.nsf/lookupMF/9C7742890ADEC989CA2568A900139423

Australian Bureau of Statistics. (2006, 7 February 2006). "8129.0 - Business use of information technology, 2003-04." Retrieved 12 February, 2006, from http://www.abs.gov.au/Ausstats/abs@.nsf/0/9C7742890ADEC989CA2568A900139 423?Open.

Australian Council of Social Services. (1996, September). "Electronic communication and the community sector, final report, ACOSS paper no. 81." Retrieved 7 March, 2001, from http://www.acoss.org.au/papers/current.htm.

Australian Government (2005). Development of a possible model for a national nonprofit coalition. Department of Communications Information Technology and the Arts.

Australian Industrial Relations Commission (2000). Victorian social and community services award.

Australian Roundtable on the Civil Society (2003). Statement from Australian civil society. Melbourne, Rockhampton, Centre for Community Networking Research, Monash University, COIN Internet Academy, Central Queensland University.

Australian Roundtable on the Civil Society (2005). Draft information economy strategy for Australian civil society. Melbourne, Centre for Community Networking Research.

Barker, C. (2000). Cultural studies: Theory and practice. London, Sage.

Barley, S. R. (1986). "Technology as an occasion for structuring: Evidence from observations of CT scanners and the social order of radiology departments." Administrative Science Quarterly 31(Mar): 78-109.

Barley, S. R. and P. S. Tolbert (1997). "Institutionalization and structuration: Studying the links between action and institution." Organization Studies 18(1): 93-117.

Batrouney, T. and L. Stillman (1993). Community relations in selected local government areas in Melbourne. Melbourne, Ethnic Communities Council of Victoria.

Beamish, A. (1995). Communities on-line: Community-based computer networks. Department of Urban Studies and Planning. Cambridge, Mass.

Beck, U., A. Giddens, et al. (1994). Reflexive modernization: Politics, tradition and aesthetics in the modern social order. Cambridge [Eng.], Polity Press in association with Blackwell Publishers.

Bell, D. (1980). The winding passage: Essays and sociological journeys, 1960-1980. Cambridge, Mass., Abt Books.

Benjamin, W. (1992). The work of art in the age of mechanical reproduction. Illuminations. London, Fontana Press: 211-244.

Berger, P. L. and T. Luckmann (1966). The social construction of reality; a treatise in the sociology of knowledge. Garden City, N.Y., Doubleday.

Bernstein, R. J. (1989). Social theory as critique. Social theory of modern societies: Anthony Giddens and his critics. D. Held and J. B. Thompson. Cambridge [Eng.]; New York, Cambridge University Press: 19-33.

Bhaskar, R. (1975). "A realist theory of science." Retrieved 24 June, 2003, from http://www.raggedclaws.com/criticalrealism/archive/rts/index.html.

Bhaskar, R. (1979). The possibility of naturalism: A philosophical critique of the contemporary human sciences. Brighton, Sussex, Harvester Press.

Bhattacharyya, J. (1995). "Solidarity and agency: Rethinking community development." Human Organization 54(1): 60-68.

Blacher, Y. (2005, 18 May, 2005). "Government and communities in partnerships: Challenges for states and territories (speech)." Government & Communities in

Partnership: The Next Steps Retrieved 18 June, 2005, from http://www.public-policy.unimelb.edu.au/events/next_steps.html.

Black, A. and P. Hughes. (2002). "The identification and analysis of indicators of community strength and outcomes occasional paper no. 3." Retrieved 6 March, 2002, from http://www.facs.gov.au/internet/facsinternet.nsf/vIA/occasional_papers/$file/No.3.rtf.

Blainey, G. (1968). The tyranny of distance: How distance shaped Australia's history. Melbourne, Macmillan.

Blumer, H. (1998). Symbolic interactionism: Perspective and method. Berkeley University of California Press.

Bottomore, T. B. (1983). A Dictionary of Marxist thought. Cambridge, Mass., Harvard University Press.

Bourdieu, P. (1977). Outline of a theory of practice. Cambridge; New York, Cambridge University Press.

Bourdieu, P. (1986). Forms of social capital. Handbook of theory and research for the sociology of education. J. C. Richardson. New York, Greenwood Press**:** 241-258.

Braverman, H. (1975). Labor and monopoly capital; the degradation of work in the twentieth century. New York, Monthly Review Press.

Brocklehurst, M. (2001). "Power, identity and new technology homework: Implications for 'new forms' of organizing." Organization Studies 22(3): 445.

Bryant, C. G. A. and D. Jary (2001). The contemporary Giddens: Social theory in a globalizing age. Houndmills, Basingstoke, Hampshire; New York, Palgrave.

Bullen, P. (1997). Neighbourhood and community centres in NSW. This is what we do, Local Community Services Association of NSW.

Bullen, P. (n.d.). "Evaluating human services. Complexity--uncertainty--self-delusion--rigour." Retrieved March 6, 2001, from http://www.mapl.com.au/A1.htm.

Burgess, R. G. (1984). In the field: An introduction to field research. London; Boston, Allen & Unwin.

Burt, E. and J. Taylor (2001). "When virtual meets values: Insights from the voluntary sector." Information, Communication and Society 4(1): 54-73.

Carmon, N. (2001). Neighborhood: General. International encyclopedia of the social & behavioral sciences. N. J. Smelser and P. Baltes. Oxford, Elsevier Science Ltd**:** 10488-10494.

Carnoy, M. and M. Castells. (1999). "Poulantzas at the millennium." Retrieved 1 July, 2005, from http://www.chet.org.za/poulantzas.html.

Centre for Community Networking Research (2003). The Monash community information and communication technologies index (CICT). Melbourne, Monash University.

Centre for Community Networking Research. (2005). "Victorian e-democracy inquiry (submission)." Retrieved 1 August, 2005, from http://www.Victorianedemocracy.info/FormPub/frm70793.pdf.

Challen, M. (1998). Social capital and community. Opening address from the ANHLC Conference, April 1998.

Charlesworth, M. J. (1984). The aboriginal land rights movement. Richmond, Vic., Hodja Educational Resources Cooperative.

Charmaz, K. (2001). Grounded theory: Methodology and theory construction. International

encyclopedia of the social & behavioral sciences. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 6396-6399.

Churchill, W. and R. R. James (1974). Winston s. Churchill: His complete speeches, 1897-1963. New York, Chelsea House Publishers.

Clement, A., M. Gurstein, et al. (2003). "Canadian Research Alliance for Community Innovation and Networking (CRACIN). A proposal submitted to the Initiative on the New Economy (INE) Research Alliances program of the Social Science and Humanities Research Council (SSHRC)." Retrieved 24 December, 2003, from http://www.fis.utoronto.ca/research/iprp/cracin/.

Clement, A., L. Shade, et al. (2002). "Toward an evaluation framework for community learning networks." Retrieved 11 November, 2002, from http://www.fis.utoronto.ca/research/iprp/.

Coleman, J. S. (1988). "Social capital in the creation of human capital." American Journal of Sociology 94 Supplement: 95-120.

Colomb, R. M. and R. Weber (1998). Completeness and quality of an ontology for an information system. Formal Ontology in Information Systems (International Conference on Formal Ontology in Information Systems--FOIS'98) Trento, Italy, IOS-Press 207-217.

Considine, M. (2003). "Governance and competition: The role of non-profit organisations in the delivery of public services." Australian Journal of Political Science, 38(1): 63-77.

Costar, B. J. and N. M. Economou (1999). The Kennett revolution: Victorian politics in the 1990s. Sydney, UNSW Press.

Cox, E. (1995). "Boyer lectures 1995." Retrieved October 9, 2001, from http://www.ldb.org/evacox.htm.

Crick, B. R. (1982). In defence of politics. Harmondsworth, Penguin.

Crowe, D. (2005). How Telstra millions went walkabout (31 October). Australian Financial Review**:** 1.

Dart, R. (2004). "The legitimacy of social enterprise." Nonprofit Management and Leadership 14(4): 411-424.

Dawson, M. and J. F. Bellamy (1996). "Virtual capitalism: The political economy of the information highway." Monthly Review 48(3): 40-59.

Day, R. E. (2000). "The conduit metaphor and the nature and politics of information studies." Journal of the American Society for Information Science and Technology 51(9): 805-11.

Day, R. E. (2001a). The modern invention of information. Carbondale & Edwardsville, Southern Illinois Press.

Day, R. E. (2001b). "Totality and Representation: A History of Knowledge Management Through European Documentation, Critical Modernity, and Post Fordism." Journal of the American Society for Information Science and technology 52(9): 725-735.

Day, R. E. and A. K. Pyati (2005). "We must now all be information professionals": An interview with Ron Day." InterActions: UCLA Journal of Education and Information Studies 1(2).

De Sanctis, G. and M. S. Poole (1994). "Capturing the complexity in advanced technology use: Adaptive structuration theory." Organization Science 5(2): 121-147.

Denison, T. (2003). Community sector organisations: A digital divide in communication

and knowledge creation? Information technology in regional areas (ITiRA), Caloundra, Qld, ITiRA Conference Committee, Central Queensland University: 21-30.

Denzin, N. K. (2001). Interpretive methods: Micromethods. <u>International encyclopedia of the social & behavioral sciences</u>. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 7881-7885.

Denzin, N. K. and Y. S. Lincoln (1998). <u>Collecting and interpreting qualitative materials</u>. Thousand Oaks, Calif., Sage Publications.

Department of Communications Information Technology and the Arts. (2005a, 6 May). "Community ICT transformation: Case studies." Retrieved 1 November, 2005, from http://www.dcita.gov.au/ie/community_connectivity/community_ICT_transformatio n_case_studies.

Department of Communications Information Technology and the Arts. (2005b, 6 December). "Evaluation of Networking the Nation." Retrieved 6 December, 2005, from http://www.dcita.gov.au/tel/role_of_the_telecommunications_division_and_contact s/networking_the_nation/evaluation_of_networking_the_nation.

Department of Communications Information Technology and the Arts. (2005c). "The role of ICT in building communities and social capital: A discussion paper." Retrieved 1 June, 2005, from http://www.dcita.gov.au/ie/community_connectivity/the_role_of_ICT_in_building_ communities_and_social_capital_a_discussion_paper.

Department of Human Services (Victoria). (2006, 29 May). "Record funding for Victoria's Neighbourhood Nouses (press release)." from http://hnb.dhs.vic.gov.au/web/pubaff/medrel.nsf/2b4e916ca12caa334a2565ae001c6 01d/74e264a6ee17c9c8ca25717c0082cbd2?OpenDocument.

Department of Victorian Communities. (2005). "Modernising Neighbourhood Houses and Learning Centres." Retrieved 1 May, 2005, from http://www.dvc.vic.gov.au/doc/Neighbourhood%20Houses%20Fact%20Sheet%20-%202%20May.pdf.

Dillon, K., M. Gammon, et al. (1995). Itopia or myopia? Neighbourhood Houses in the 'information age', Graduate School of Environmental Science, Monash University.

DiMaggio, P. J. and H. K. Anheier (1990). "The sociology of nonprofit organizations and sectors." <u>Annual Review of Sociology</u> 16: 137-159.

DiMaggio, P. J. and J. A. Weiss (1983). "The iron cage revisited: Institutional isomorphism and collective rationality in organisational fields." <u>American Sociological Review</u> 48(2): 147-60.

DiMaggio, P. J., J. A. Weiss, et al. (2002). "Data to support scholarship on nonprofit organizations. An introduction." <u>The American Behavioral Scientist</u> 45(10): 1474-1493.

Dourish, P. (2001). "Seeking a foundation for context-aware computing." <u>Human-Computer Interaction</u> 16(2-3): 229-241.

Down, S. and S. Taylor. (2003, 8-12 September). "Spatial frontiers: Organising work in 'proximate space'." <u>IRA 13th World Congress</u> Retrieved 10 March, 2004, from www.fu-berlin.de/iira2003/papers/ track_2/Workshop_2_2_Down.pdf.

Dutton, W. H., M. Peltu, et al. (1999). <u>Society on the line: Information politics in the digital</u>

age. New York, Oxford University Press.

Dyer-Witheford, N. (2005). Cyber-Negri: General intellect and immaterial labor. The philosophy of Antonio Negri: Resistance in practice. T. S. Murphy and A.-K. Mustapha. London; Ann Arbor, MI, Pluto Press**:** 136-161.

Dyer-Witherford, N. (2002). "Empire, immaterial labor, the new combinations, and the global worker." Rethinking Marxism 13(3/4): 70-80.

Engestrom, Y. and D. Middleton (1996). Cognition and communication at work. Cambridge; New York, NY, USA, Cambridge University Press.

Englebart, D. (1962). "Augmenting human intellect: A conceptual framework." Retrieved April 3, 2004, from http://sloan.stanford.edu/mousesite/EngelbartPapers/B5_F18_ConceptFrameworkInd.html.

Family and Community Support Branch. Community Care Division. Victorian Government Department of Human Services (2002). Neighbourhood house coordination program. Melbourne.

Feenberg, A. (n.d.). "From essentialism to constructivism: Philosophy of technology at the crossroads." Retrieved 1 July, 2004, from http://www.sfu.ca/~andrewf/talk4.html.

Ferris, T. L. J. (2003). Exploration of the application of 'ready-to-hand' and 'present-to-hand' in the design of systems. Proceedings of the 9th ANZSYS Conference, Systems in Action, Melbourne, Australia, Paper No. 3000061, Melbourne.

Fetterman, D. (1994). "Empowerment evaluation." Evaluation Practice 15(1): 1-15.

Fetterman, D. (1997). "Empowerment evaluation: A response to Patton and Scriven." Evaluation Practice 18(3): 253-266.

Fitzgerald, B. and S. Hall (2005). VICNET 10 years online: An examination of Victoria's ICT network development and emerging issues for public libraries. Information Online 2005, Sydney.

Foucault, M. (1988). Technologies of the self: A seminar with Michel Foucault. London, Tavistock.

Foucault, M., J. D. Faubion, et al. (2000). Power. New York, New Press.

Foucault, M. and C. Gordon (1980). Power/knowledge: Selected interviews and other writings, 1972-1977. New York, Pantheon Books.

Frankel, B. (1982). Marxist theories of the state. Classes, power, and Conflict: Classical and contemporary debates. A. Giddens and D. Held. Basingstoke [Eng.], Macmillan**:** 257-273.

Frankel, B. (2001). "The rise of the sociologist king." Arena Magazine 52(April-May): 20-26.

Frayn, M. (1965). The tin men. London, Collins.

Geertz, C. (1973). The interpretation of cultures: selected essays. New York, Basic Books.

Geertz, C. (2000). Local knowledge: Further essays in interpretive anthropology. New York, Basic Books.

Geiselhart, K. (2002). Net value: The use of the internet by non-profit organisations. School of Business Information Technology Working Paper Series. Melbourne, RMIT.

Gibson, W. and B. Sterling (1992). The difference engine. New York, Bantam Books.

Giddens, A. (1971). Capitalism and modern social theory: An analysis of the writings of Marx, Durkheim and Max Weber. Cambridge, University Press.

Giddens, A. (1976). New rules of sociological method: A positive critique of interpretative

sociologies. London, Hutchinson.

Giddens, A. (1979a). <u>Central problems in social theory: Action, structure and contradiction in social analysis</u>. Berkeley, University of California Press.

Giddens, A. (1979b). <u>Emile Durkheim</u>. New York, Viking Press.

Giddens, A. (1982). Power, the dialectic of control, and class structuration. <u>Social class and the division of labour: Essays in honour of Ilya Neustadt</u>. A. Giddens, Cambridge University Press**:** 29-45.

Giddens, A. (1984). <u>The constitution of society: Outline of the theory of structuration</u>. Berkeley, University of California Press.

Giddens, A. (1989). A reply to my critics. <u>Social theory of modern societies: Anthony Giddens and his critics.</u> D. Held and J. B. Thompson. Cambridge [England]; New York, NY, USA, Cambridge University Press.**:** 249-301.

Giddens, A. (1990). <u>The consequences of modernity</u>. Stanford, Calif., Stanford University Press.

Giddens, A. (1991). <u>Modernity and self-identity: Self and society in the late modern age</u>. Stanford, Calif., Stanford University Press.

Giddens, A. (1992). <u>The transformation of intimacy: Sexuality, love, and eroticism in modern societies</u>. Stanford, Calif., Stanford University Press.

Giddens, A. (2000a). <u>Runaway world: How globalization is reshaping our lives</u>. New York, Routledge.

Giddens, A. (2000b). <u>The third way and its critics</u>. Malden, Mass., Polity Press.

Glaser, B. G. and A. L. Strauss (1967). <u>The discovery of grounded theory: Strategies for qualitative research</u>. New York, Aldine.

Goffman, E. (1971). <u>The presentation of self in everyday life</u>. Harmondsworth, Penguin.

Goffman, E. (1983). "The interaction order." <u>American Sociological Review</u> 48(1): 1-17.

Goffman, E. (1997). Frame analysis. <u>The Goffman reader</u>. E. Goffman, C. C. Lemert and A. Branaman. Cambridge, Mass., Blackwell**:** 285.

Goggin, G. (2003). "Wiring the country: Local telecommunications and Australian rural communities." <u>Southern Review</u> 36(1): 34-47.

Golden-Biddle, K. and K. D. Locke (1997). <u>Composing qualitative research</u>. Thousand Oaks, Calif., Sage Publications.

Gottdeiner, M. (1993). "A Marx for our time: Henri Lefebvre and the production of space." <u>Sociological Theory</u> 11(129-134).

Gould, N. (2003). The caring professions and information technology: In search of a theory. <u>Information and communication technologies in the welfare services</u>. E. Harlow and S. A. Webb. London; Philadelphia, Pa., Jessica Kingsley Publishers**:** 29-48.

Graham, G. (2005). "Community networking as radical practice." <u>Journal of Community Informatics</u> 1(3).

Granovetter, M. (1973). "The strength of weak ties." <u>The American Journal of Sociology</u> 78(6): 1360-1380.

Granovetter, M. (1985). "Economic action and social structure: The problem of embeddedness." <u>American Journal of Sociology</u> 91(3): 481-510.

Green, V. and G. Zappalà (2005). From welfare to place management: Challenges and developments for service delivery in the community sector. <u>Research and Advocacy Briefing Paper</u>. Sydney, Smith Family.

Greenbaum, J. M. (2004). <u>Windows on the workplace: Technology, jobs, and the organization of office work</u>. New York, Monthly Review Press.

Gregory, D. (1986). Structuration theory. <u>The Dictionary of human geography</u>. R. J. Johnston, D. Gregory and D. M. Smith. Oxford, Blackwell Reference**:** 464-469.

Gregson, N. (1989). On the (ir)relevance of structuration theory to empirical research. <u>Social theory of modern societies: Anthony Giddens and his critics</u>. D. Held and J. B. Thompson. Cambridge [England]; New York, Cambridge University Press**:** 235-248.

Grönlund, A. (2005). <u>What's in a field--exploring the egoverment domain</u>. Proceedings of the 38th Annual Hawaii International Conference on System Sciences (HICSS'05) - Track 5, Hawaii.

Guba, E. G. and Y. S. Lincoln (1981). <u>Effective evaluation</u>. San Francisco, Jossey-Bass Publishers.

Gurstein, M. (2000). Community informatics: Enabling communities with information and communications technologies. <u>Community informatics: Enabling communities with information and communications technologies</u>. M. Gurstein. Hershey, PA, Idea Group Pub.**:** 1-30.

Gurstein, M. (2003). "Effective use: a community informatics strategy beyond the digital divide." <u>First Monday</u> 8(12).

Habermas, J. (1972). <u>Toward a rational society</u>. London, Heinemann.

Habermas, J. (1974). "Public sphere: An encyclopedia article (1964)." <u>New German critique</u> 1(3): 49-55.

Habermas, J. (1984). <u>Theory of communicative action</u>. Boston, Mass., Beacon Press.

Hagerstrand, T. (1970). "What about people in regional science?" <u>Papers and Proceedings of the Regional Science Association</u> 24: 7-21.

Hagerstrand, T. (1975). Space, time and human conditions. <u>Dynamic allocation of urban space</u>. A. Karlqvist, L. Lundqvist and F. Snickars. Westmead, Hans.; Lexington, Mass., Saxon House: Lexington Books**:** 3-14.

Halbwachs, M. (1980). <u>On collective memory</u>. New York, Harper & Row.

Hall, E. T. (1959). <u>The silent language</u>. New York, Doubleday.

Hall, E. T. (1969). <u>The hidden dimension</u>. New York, Anchor Books.

Hanson, S. and G. Pratt (1995). <u>Gender, work, and space</u>. London; New York, Routledge.

Haraway, D. (2000). <u>A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century</u>. London, Routledge.

Haraway, D. J. (1991). <u>Simians, cyborgs, and women: The reinvention of nature</u>. New York, Routledge.

Hardt, M. and A. Negri (2000). <u>Empire</u>. Cambridge, Mass.; London, Harvard University Press.

Harlow, E. and S. A. Webb (2003). <u>Information and communication technologies in the welfare services</u>. London; Philadelphia, Pa., Jessica Kingsley Publishers.

Harvey, D. (1989). <u>The condition of postmodernity</u>, Blackwell.

Harvey, D. (1990). "Between space and time: Reflections on the geographical imagination." <u>Annals of the Association of American Geographers</u> 80(3): 418-434.

Heidegger, M. (1977). The question concerning technology. <u>The question concerning technology and other essays</u>. W. Lovitt. New York, Garland Publishing, Inc.**:** 3-35.

Heidegger, M. and J. Stambaugh (1996). <u>Being and time: A translation of Sein und Zeit</u>.

Albany, NY, State University of New York Press.

Heim, M. (1999). <u>Electric language: A philosophical study of word processing</u>. New Haven, Yale University Press.

Held, D. and J. B. Thompson (1989). <u>Social theory of modern societies: Anthony Giddens and his critics</u>. Cambridge [Eng.]; New York, Cambridge University Press.

Henfridsson, O. (2000). "Ambiguity in it adaptation: Making sense of First Class." <u>Information Systems Journal</u> 10(2): 87-104.

Hodges, A. (1999). <u>Turing</u>. New York, Routledge.

Horwitt, S. D. (1989). <u>Let them call me rebel: Saul Alinsky, his life and legacy</u>. New York, Knopf: Distributed by Random House.

Hughes J.A., O'Brien J., et al. (2001). " Some 'real' problems of 'virtual' organisation." <u>New Technology, Work and Employment</u> 16(1): 49-64.

Human Services News. (2002). "Neighbourhood houses wired to the world." 8 June. Retrieved 1 June, 2003, from www.dhs.vic.gov.au/humanservicesnews/jun02/wired.htm.

Humphrage, L. (2005). Building Victorian communities: Outcomes of the Neighbourhood House & Learning Centre Sector. Melbourne, Centre for Applied Social Research, RMIT University.

Humphries, P. and P. Camilleri (2002). "Social work and technology: Challenges for social workers in practice: A case study." <u>Australian Social Work</u> 55(4): 251-259.

Hustedde, R. J. and J. Ganowicz (2002). "The basics: What's essential about theory for community development practice?" <u>Journal of the Community Development Society</u> 33(1): 1-20.

Huws, U. (2003). <u>The making of a cybertariat: Virtual work in a real world</u>. New York, Monthly Review Press.

Ife, J. W. (2002). <u>Community development: Community-based alternatives in an age of globalisation</u>. Frenchs Forest, N.S.W., Pearson Education.

Industry Commission (Australia). (1995). "Charitable organisations in Australia." Retrieved 8 March, 2001, from http://www.pc.gov.au/ic/inquiry/45charit/finalreport/index.html.

Jackson, A. C. and F. Donovan (1999). <u>Managing to survive: Managerial practice in not-for-profit organisations</u>. St. Leonards, N.S.W., Allen & Unwin.

Jakubowicz, A. (1988). Welfare provision. <u>The Australian people: An encyclopedia of the nation, its people and their origins</u>. J. Jupp and Australian Bicentennial Authority. North Ryde, N.S.W., Angus & Robertson**:** 963-967.

Janelle, D. G. (1969). "Spatial reorganization: A model and concept." <u>Annals of the Association of American Geographers</u> 59(2): 348-364.

Johanson, G. and L. Stillman (2002). <u>Conference proceedings, electronic networking 2002: Building community conference</u>, Monash University, Caulfield Campus, Centre for Community Networking Research.

Johnston, R. B. and S. K. Milton (2002). "The foundational role for theories of agency in understanding of information systems design." <u>Australasian Journal of Information Systems</u> 9: 40-49.

Jones, C. (1998). <u>Social work: themes, issues and critical debates</u>. London, Macmillan Press.

Jones, G. S. (2004). "Samuel, Raphael Elkan (1934-1996)." <u>Oxford Dictionary of National</u>

Biography Retrieved 15 September, 2005, from
http://www.oxforddnb.com/view/article/64002.

Kamenka, E. (1989). <u>Bureaucracy</u>. Oxford; New York, N.Y., B. Blackwell.

Kaufer, D. S. and K. M. Carley (1993). <u>Communication at a distance: The influence of
print on sociocultural organization and change</u>. Hillsdale, NJ, Lawrence Erlbaum
Associates.

Kitay, J. (1997). "The labour process: Still stuck? Still a perspective? Still useful?"
<u>Electronic Journal of Radical Organiation Theory</u> 3(1): online.

Kling, R. (1973). <u>Towards a person-centered computer technology</u>. Proceedings of the
annual conference, Atlanta, Ga., ACM: 387--391.

Kling, R. (2000). "Learning about information technologies and social change: The
contribution of social informatics." <u>The Information Society, 16:217–232, 2000</u>
16(3): 217-232.

Kondrat, M. E. (1994). "Culture and power in technology transfer: Perspectives from a
critical theory of knowledge." <u>Social Development Issues</u> 16(3): 45-65.

Kreuger, L. W. and J. J. Stretch (2000). "What is the role of hypertechnology in social work
today?" <u>Social Work</u> 45(5): 457.

Kubisch, A. C. (1997). <u>Voices from the field: Learning from the early work of
comprehensive community initiatives</u>. Washington, DC, Aspen Institute.

Kuhn (1970). <u>The structure of scientific revolutions</u>. Chicago, University of Chicago.

Lamb, R. and R. Kling (2003). "Reconceptualising users as social actors in information
systems research." <u>MIS Quarterly</u> 27(2): 197-235.

Lambert, W. G. (1960). <u>Babylonian wisdom literature</u>. Oxford, Clarendon Press.

Latham, M. (1998). <u>Civilising global capital: New thinking for Australian labor</u>. St
Leonards, N.S.W., Allen & Unwin.

Latham, M. (2005). <u>The Latham diaries</u>. Carlton, Vic., Melbourne University Press.

Latour, B. (1994). Where are the missing masses? The sociology of a few mundane
artifacts. <u>Shaping technology/building society: Studies in sociotechnical change</u>. W.
E. Bijker and J. Law. Cambridge, Mass., MIT Press**:** 224-258.

Latour, B. and M. Akrich (1994). A summary of convenient vocabulary for the semiotics of
human and nonhuman assemblies. <u>Shaping technology/building society: Studies in
sociotechnical change</u>. W. E. Bijker and J. Law. Cambridge, Mass., MIT Press**:**
259-263.

Law, J. (2001). "Networks, relations,cyborgs: On the social study of technology (draft)."
Retrieved 6 June, 2003, from http://www.comp.lancs.ac.uk/sociology/soc042jl.html.

Lazzarato, M. (n.d.). "General intellect: Towards an inquiry into immaterial labour."
Retrieved 1 August, 2005, from
http://www.emery.archive.mcmail.com/public_html/immaterial/lazzarat.html.

Lefebvre, H. (1968). <u>Dialectical materialism</u>. London, Jonathan Cape.

Lennie, J. (2002). <u>Including a diversity of rural women in a communication technology
access project: Taking the macro and micro contexts into account.</u> Electronic
Networking 2002--Building Community: Conference Proceedings (CD Rom),
Monash University, Centre for Community Networking Research.

Lessig, L. (2005). Do you floss? <u>London Review of Books</u>. 27**:** 24-25.

Lewandowski, J. D. (2003). "Thematizing embeddedness: Reflexive sociology as
interpretation." <u>Philosophy of the Social Sciences</u> 30(1): 49-66.

Lewis, J. A. and J. A. Lewis (2001). <u>Management of human service programs</u>. Belmont, CA, Brooks/Cole: Thomson Learning.

Lie, M. (1997). "Technology and gender versus technology and work: Social work and computers." <u>Acta Sociologica</u> 40(2): 123-142.

Lincoln, Y. S. and E. G. Guba (1985). <u>Naturalistic inquiry</u>. Beverly Hills, Calif., Sage Publications.

Lockwood, D. (1970). Some remarks on the 'social system'. <u>Modern sociology: Introductory readings</u>. P. Worsley. Harmondsworth, Penguin**:** 428-438.

Lofland, J. and L. H. Lofland (1995). <u>Analyzing social settings: A guide to qualitative observation and analysis</u>. Belmont, Calif., Wadsworth.

Lupton, D. (2000). <u>The embodied computer/user</u>. London, Routledge.

Lynd, R. S. (1939). <u>Knowledge for what? The place of social science in American culture</u>. Princeton, Princeton university press.

Lynd, R. S. and H. M. Lynd (1956). <u>Middletown: A study in American culture</u>. New York, Harvest Books.

Lyons, M. (1992). "Defining community services." <u>Impact (Australian Council of Social Service)</u> 22(4): 12-13.

Lyons, M. (1999). "Special article. Australia's nonprofit sector (year book Australia, 1999)." Retrieved March 23, 2002, from http://www.abs.gov.au/ausstats/abs@.nsf/0/5EBE1496169C5D31CA2569DE002842 B6?Open.

Lyons, M. (2001). <u>Third sector: The contribution of nonprofit and co-operative enterprises in Australia</u>. St Leonards, N.S.W., Allen & Unwin.

Lyons, M. (2003). Why the third sector should interest (Australian) political scientists. Canberra, ACT, Research School of Social Sciences, Political Science Program Seminar.

Macey, D. (2000). <u>The Penguin Dictionary of critical theory</u>. London, Penguin.

Macintosh, M. (1971). Changes in the organisation of thieving. <u>Images of deviance</u>. S. Cohen. Harmondsworth, Penguin**:** 98-133.

Mäki, M. (2001). Models, metaphor, narrative, and rhetoric: Philosophical aspects. <u>International encyclopedia of the social & behavioral sciences</u>. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 9931-9937.

Manning, P. K. (1997). "Organizations as sense-making contexts." <u>Theory, Culture & Society</u> 14(2): 139-50.

Martin, D. G. (2002). "Constructing the 'neighborhood sphere': Gender and community organizing." <u>Gender, Place and Culture. A Journal of Feminist Geography</u> 9(4): 333-350.

Marx, G. T. (2001). Technology and social control. <u>International encyclopedia of the social & behavioral sciences</u>. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 15506-15512.

Marx, K. (1856). "Speech at anniversary of the people's paper." Retrieved 5 December, 2003, from http://www.marxists.org/archive/marx/works/1856/04/14.htm.

Marx, K. (1867). "Capital." Retrieved 1 August, 2005, from http://www.marxists.org/archive/marx/works/1867-c1/index.htm.

Marx, K. and F. Engels (1962). <u>Karl Marx and frederick engels: Selected works in two volumes</u>. Moscow, Foreign Languages Pub. House.

Marx, K. and M. Nicolaus (1973). Grundrisse: Foundations of the critique of political economy (rough draft). London, Allen Lane.

Massey, D. (1992). "Politics and space/time." New Left Review 196(1): 65-84.

Massey, D. B. (1994). Space, place, and gender. Minneapolis, University of Minnesota Press.

Mautner, T. (1997). The Penguin Dictionary of philosophy. London; New York, Penguin Books.

McClintock, C. (1987). Conceptual and action heuristics: Tools for the evaluator. Using program theory in evaluation. L. Bickman. San Francisco, Jossey Bass: 43-57.

McLaren, J. and G. Zappalà (2003). Patterns of computer and internet access and usage among low-income households. Barriers to participation. Financial, educational and technological. A report into the barriers to societal participation among low-income Australians. G. Zappalà. Sydney: 63-81.

Meiksins, P. (1996). "Work, new technology, and capitalism." Monthly Review 48(3): 99-115.

Mendes, P. (2003). "Community development and social work: Are they compatible?" New Community Quarterly 2(2): 24-27.

Meredyth, D., S. Ewing, et al. (2003). "Divided opinions over the digital divide." Southern Review 36(1): 1-10.

Meredyth, D., S. Ewing and J. Thomas (2004). "Neighbourhood renewal and government by community. The Atherton Gardens network." International Journal of Cultural Policy 10(1): 85-101.

Merton, R. K. (1968). Social theory and social structure. New York, Free Press.

Miles, M. B. and A. M. Huberman (1988). Drawing valid meaning from qualitative data: Toward a shared craft. Qualitative approaches to evaluation in education: The silent scientific revolution. D. M. Fetterman. New York, Praeger: 222-244.

Miles, M. B. and A. M. Huberman (1994). Qualitative data analysis: An expanded sourcebook. Newbury Park, Sage.

Miles, M. B. and A. M. Huberman (1998). Data management and analysis methods. Collecting and interpreting qualitative materials. N. K. Denzin and Y. S. Lincoln. Thousand Oaks, Calif., Sage Publications: 179-210.

Miliband, R. (1973). The state in capitalist society. London, Quartet Books.

Milio, N. (1996). Engines of empowerment: Using information technology to create healthy communities and challenge public policy. Chicago, Ill, Health Administration Press.

Mills, C. W. (1959). The sociological imagination. New York, Oxford University Press.

Minichiello, V. (1995). In-depth interviewing: Principles, techniques, analysis. Melbourne, Longman.

Mjøset, L. (2001). Theory: Conceptions in the social sciences. International encyclopedia of the social & behavioral sciences. Oxford, Elsevier Science Ltd: 15641-15647.

Morino, M. (1994). "Assessment and evolution of community networking. First presented at the 1994 "Ties that bind" Conference on building community networks." Retrieved 1 July, 2005, from http://www.morino.org/under_sp_asse.asp.

Mouzelis, N. (1989). "Restructuring structuration theory." The Sociological Review 37(4).

Muir, K. (2004). Connecting communities with CTLCs:: From the digital divide to social inclusion. Research and Development. Sydney, The Smith Family.

Multimedia Victoria (2004). Connecting communities: The second wave. Melbourne, Multimedia Victoria.

Munro, D. (2000). "The knowledge economy." <u>Journal of Australian Political Economy</u>(45): 5 -17.

Murgatroyd, L. (1989). Only half the story: Some blinkering effects of 'malestream' sociology. <u>Social theory of modern societies: Anthony Giddens and his critics</u>. D. Held and J. B. Thompson. Cambridge [England]; New York, NY, USA, Cambridge University Press**:** 147-161.

Myerson, G. (2003). Heidegger, Habermas and the mobile phone. <u>The end of everything: Postmodernism and the vanishing of the human</u>. R. Appignanesi. Cambridge [Eng.], Icon**:** 139-188.

Navarro, V. (1977). <u>Class struggle, the state & medicine</u>. London, Martin Robertson.

Ogbonna, E. and L. C. Harris (2005). "The adoption and use of information technology: A longditudinal study of a mature family firm." <u>New Technology, Work and Employment</u> 20(1): 2-18.

O'Neil, D. (2002). "Assessing community informatics: A review of methodological approaches for evaluating community networks and community technology centers." <u>Internet Research</u> 12(1): 76-103.

Office of the e- Envoy, U. (2002). "E-enabling the voluntary and community sector." 29 November, 2001. Retrieved 30 October, 2003, from http://www.e-envoy.gov.uk/assetRoot/04/00/08/28/04000828.pdf.

Ogbonna, E. and L. C. Harris (2005). "The adoption and use of information technology: A longditudinal study of a mature family firm." <u>New Technology, Work and Employment</u> 20(1): 2-18.

Ong, W. J. (1982). <u>Orality and literacy: The technologizing of the word</u>. London; New York, Methuen.

Oppenheim, A. L. (1967). <u>Letters from Mesopotamia: Official business, and private letters on clay tablets from two millennia</u>. Chicago, University of Chicago Press.

Oppenheim, A. L. and E. Reiner (1977). <u>Ancient Mesopotamia: Portrait of a dead civilization</u>. Chicago, University of Chicago Press.

Orlikowski, W. (1995). "Action and artifact: The structuring of technologies-in-use." Retrieved 20 October, 2003, from http://hdl.handle.net/1721.1/2600.

Orlikowski, W. J. (1992). "The duality of technology: Rethinking the concept of technology in organizations." <u>Organization Science</u> 3(3): 398-427.

Orlikowski, W. J. (1999). <u>Technologies-in-practice: An enacted lens for studying technology in organizations</u>. Cambridge, MA, Sloan School of Management Massachusetts Institute of Technology.

Orlikowski, W. J. (2000). "Using technology and constituting structures: A practice lens for studying technology in organizations." <u>Organization Science</u> 11(Jul/Aug): 404-428.

Orlikowski, W. J. (2002). "Knowing in practice: Enacting a collective capability in distributed organizing." <u>Organization Science</u> 13(May/Jun): 249-273

Orlikowski, W. J. and S. R. Barley (2001). "Technology and institutions: What can research on information technology and research on organizations learn from each other?" <u>MIS Quarterly; management information systems</u> 25(Jun): 145-165.

Orlikowski, W. J. and D. C. Gash (1993). <u>Technological frames: Making sense of information technology in organizations</u>. Cambridge, Mass., Alfred P. Sloan School

of Management Massachusetts Institute of Technology.

Orlikowski, W. J. and J. Yates (1994). "Genre repertoire: The structuring of communicative practices in organizations." Administrative Science Quarterly 39(Dec): 541-575.

Orlikowski, W. J. and J. Yates (1999). It's about time: An enacted view of technology in organisations. Sloan Working Papers. Cambridge, MA, Sloan School of Management, Massachusetts Institute of Technology.

Orlikowski, W. J. and J. Yates (2002). "It's about time: Temporal structuring in organizations." Organization Science 13(Nov/Dec): 684-700.

Osbourne, D. and T. Gaebler (1992). Reinventing government: How the entrepreneurial spirit is transforming the public sector, Addison-Wesley.

Our Community Pty Ltd (2003). The community manifesto - valuing Australia's community groups. Melbourne, Our Community Pty Ltd.

Outer Suburban/Interface Services and Development Committee. Parliament of Victoria (2006). Inquiry into building new communities. Final report. Melbourne, Parliament of Victoria.

Owen, J. M. and P. J. Rogers (1999). Program evaluation, forms and approaches. St Leonards, Allen & Unwin.

Parker, J. (2000). Structuration. Buckingham, Open University Press.

Patton, M. Q. (1990). Qualitative evaluation and research methods. Newbury Park, Sage.

Patton, M. Q. (1997). Utilization-focussed evaluation. Thousand Oaks, Sage.

Patton, M. Q. (1999). "Evaluation and the non-profit sector." Evaluation Journal of Australasia 11(1): 72-78.

People Focus. (2001). "Victoria joins world-wide neighbourhood." April. Retrieved 2002, 1 June, from http://www.dhs.vic.gov.au/humanservicesnews/apr01/wwn.htm.

Permezel, M. (2001). The practice of citizenship: Place, identity and the politics of participation in Neighbourhood Houses (unpublished PhD). Faculty of Architecture, Building and Planning, University of Melbourne

Philanthropy Australia. (2003). "The non-profit sector in Australia." Retrieved 1 October, 2003, from http://www.philanthropy.org.au/factsheets/7-05-03-nonprof.htm.

Pigg, K. (2001). "Applications of community informatics for building community and enhancing civic society." Information, Communication and Society 4(4): 505-527.

Pigg, K. (2005). "Introduction: Community informatics and community development." Community Development: Journal of the Community Development Society. 36(1): 1-7.

Poole, D. L. and I. C. Colby (2002). "Do public neighborhood centers have the capacity to be instruments of change in human services?" Social Work 47(2): 142-152.

Popper, K. R. (1976). Unended quest: An intellectual autobiography. [London], Fontana.

Poulantzas, N. A. (1973). Political power and social classes. London, NLB; Sheed and Ward.

Preece, J. (2002). "Supporting community and building social capital." Communications of the ACM 45(4): 37-39.

Preskill, H. and A. T. Coghlan, Eds. (2003). Using appreciative inquiry in evaluation. New directions for evaluation. San Francisco, Jossey-Bass.

Pusey, M. (1990). The impact of economic ideas on public policy in Canberra. 19th Conference of Economists (Australia), University of New South Wales.

Putnam, R. (1995). "Bowling alone: America's declining social capital." Journal of

Democracy 6(1): 65-78.

Raphael, F. (1998). Popper. London, Phoenix.

Raysmith, H. (2001a). "Building better communities. A plan for Victoria." Retrieved July 17, 2001, from http://www.vlga.org.au/.

Raysmith, H. (2001b). "Building better communities: The way to go." Retrieved October 8, 2001, from http://www.vlga.org.au/.

Read, H. (1951). The meaning of art. London, Faber.

Reddel, T. (2005). Local social governance and citizen engagement. Community and local governance in Australia. P. Smyth, T. Reddel and A. Jones. Sydney, University of New South Wales**:** 187-204.

Reed, M. I. (1992). The sociology of organizations: Themes, perspectives and prospects. New York, Harvester Wheatsheaf.

Reed, M. I. (1997). "In praise of duality and dualism: Rethinking agency and structure in organizational analysis." Organization Studies 18: 21-42.

Relph, E. (2001). Place in geography. International encyclopedia of the social & behavioral sciences. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 11448-11451.

Resch, R. P. (c1992). Althusser and the renewal of Marxist social theory. Berkeley, University of California Press.

Rheingold, H. (2004). The future we're creating. Shaping the network society: The new role of civil society in cyberspace. D. Schuler and P. Day. Cambridge, Mass., MIT Press**:** 253-377.

Richards, L. (1990). Nobody's home. Dreams and realities in a new suburb. Melbourne, Oxford University Press.

Rose, J. (1998). Evaluating the contribution of structuration theory to the information systems discipline. Proceedings of the 6th European Conference on Information Systems, Baets, W.R.J. (Ed) Euro-Arab Management School, Granada, Spain.

Rose, J. (1999a). Towards a structurational theory of IS, theory development and case study illustrations. Proceedings of the 7th European Conference on Information Systems, Copenhagen.

Rose, J. (2000). Information systems development as action research - soft systems methodology and structuration. PhD thesis. School of Management. Lancaster, University of Lancaster UK.

Rose, J. and R. Hackney (1999). Towards a structurational theory of information systems: A substantive case analysis. Proceedings of the 7th European Conference on Information Systems, Copenhagen, Copenhagen Business School.

Rose, J. and R. Scheepers (2001). Structuration theory and information systems development; frameworks for practice. European Conference on Information Systems, Bled, Slovenia.

Rose, N. S. (1999b). Powers of freedom. Reframing political thought. Cambridge, United Kingdom; New York, Cambridge University Press.

Rose, N. S. and P. Miller (1992). "Political power beyond the state: Problematics of government." British Journal of Sociology 43(2): 173-205.

Rothman, J. (1972). Three models of community organization practice. Strategies of community organization. F. M. Cox. Itasca, Ill, FE Peacock**:** 20-36.

Rothman, J. and J. E. Tropman (1970). Models of community organization and macro

practice perspectives: Their mixing and phasing. <u>Strategies of community organization</u>. F. M. Cox. Itasca, Ill, FE Peacock: 3-26.

Rowe, A. and C. Murrell (2005). Testimony to outer suburban/interface services and development committee. Inquiry into building new communities. Melbourne, Parliament of Victoria.

Salvador, T. and J. Sherry (2004). "Local learnings: An essay on designing to facilitate effective use of ICTs " <u>Journal of Community Informatics</u> 1(1): 76-83.

Sandfort, J. R. (2003). "Exploring the structuration of technology within human service organizations." <u>Administration & Society</u> 34(Jan): 605-631.

Scanlon, C. (2001). "The network of moral sentiments: The third way and community." Retrieved October 6, 2001, from www.arena.org.au.

Scanlon, C. (2004). What's wrong with social capital. <u>The Australian Fabian Society Pamphlet and Arena Publications Blue Book Series (Arena Journal 69)</u>. Melbourne. Blue Book 8, Australian Fabian Society Pamphlet 63**:** 1-12.

Schauder, D. and G. Johanson. (2005). "Australian civil society and the second world summit on the information society, november 2005, tunis." Retrieved 1 December, 2005, from http://www.ccnr.net/?q=node/119.

Schauder, D., L. Stillman, et al. (2004). Sustaining and transforming a community network. The information continuum model and the case of vicnet. <u>Community Informatics Research Network Prato Conference Proceedings 2004</u>. L. Stillman and G. Johanson. Prato, Italy, Community Informatics Research Network. 2**:** 179-192.

Schon, D. (1983). <u>Reflective practitioner: How professionals think in action</u>, Basic Books.

Schuler, D. and P. Day (2004). <u>Community practice in the network society: Local action/ global interaction</u>. London; New York, Routledge.

Schutz, A. (1972). <u>The phenomenology of the social world</u>. London, Heinemann Educational.

Searle, J. R. (1990). "Is the brain a digital computer?" Presidential address., 1990." <u>Proceedings of the American Philosophical Association</u> Retrieved 8 September, 2004, from http://www.ecs.soton.ac.uk/~harnad/Papers/Py104/searle.comp.html.

Seedco (2002). The evolving role of information technology in community development organisations. New York, NY, Seedco.

Sewell, W. H. (1992). "A theory of structure: Duality, agency, and transformation." <u>American Journal of Sociology</u> 98(1): 1-29.

Siisiäinen, M. (2000). <u>Two concepts of social capital: Bourdieu vs. Putnam</u>. ISTR Fourth International Conference The Third Sector: For What and For Whom? July 5-8, 2000, Dublin.

Simpson, L. (2004). Big questions for community informatics initiatives: A social capital perspective. <u>Community and information technology: The big questions. A search conference report 19 october 2002</u>. L. Stillman. Melbourne, Australian Scholarly Publishing.

Singh, S. (2001). "Gender and the use of the internet at home." <u>New Media & Society</u> 3(4): 395-416.

Smallwood, H. and R. Hurworth (1998). "Literature syntheses for program planning and policy development: A practical guide." <u>Evaluation News and Comment</u>: 37-43.

Smith, D. (2004). "Williams, Raymond Henry (1921-1988), rev." <u>Oxford Dictionary of National Biography</u> Retrieved 17 Sept, 2005, from

http://www.oxforddnb.com/view/article/39847.

Smyth, P., T. Reddel, et al. (2005). <u>Community and local governance in Australia</u>. Sydney, University of New South Wales.

Stall, S. and R. Stoecker (1998). "Community organizing or organizing community? Gender and the crafts of empowerment." <u>Gender & Society</u> 12(6): 729-756.

Stark, D. (1982). Class struggle and the transformation of the labour process: A relational approach. <u>Classes, power, and conflict: Classical and contemporary debates</u>. A. Giddens and D. Held. Basingstoke [Eng.], Macmillan**:** 310-329.

Steward, E. C. (1972). <u>American cultural patterns</u>. Yarmouth, Maine, Intercultural Press.

Stewart-Weeks, M. and J. Barraket (2002). Information communication technology and the third sector. <u>Working Paper Series</u>. Sydney, Centre for Australian Community Organisations and Management (CACOM).

Stillman, L., Ed. (2004). <u>Community and information technology: The big questions</u>. Melbourne, Australian Scholarly Publishing.

Stillman, L. (2005). "Participatory action research for electronic community networking projects." <u>Community Development: Journal of the Community Development Society.</u> 36(1).

Stillman, L. (forthcoming). The interview and grounded research: Using personal information without compromising ethical integrity. <u>Researching with communities</u>. A. Williamson and R. DeSouza. Auckland, NZ, Muddy Creek Press.

Stillman, L. and B. Craig (2006). <u>Incorporating Indigenous World Views in Community Informatics</u>. OTM Workshops 2006, LNCS 4277. Montpellier, France, Springer Berlin / Heidelberg: 237-246.

Stillman, L. and R. Stoecker (2004). <u>Empowerment for the west: Community information, knowledge management & technologies for community service providers in Melbourne's western region: A prospective report.</u> Building & Bridging Community Networks: Knowledge, Innovation & Diversity through Communication, 31st March - 2nd April, 2004, University of Brighton, UK.

Stillman, L. and R. Stoecker (2005). <u>Structuration, ICTs and community work</u>. Community Informatics Research Network Prato Conference Proceedings 2004, Prato, Italy, Community Informatics Research Network: 219-240.

Stoecker, R. (1996, Revised, March, 1996). "The community development corporation model of urban development: A political economy critique and an alternative." Retrieved 20 February, 2004.

Stoecker, R. (2005a). "Is community informatics good for communities? Questions confronting an emerging field." <u>The Journal of Community Informatics</u> 1(3): (online).

Stoecker, R. (2005b). <u>Research methods for community change: A project-based approach</u>. Thousand Oaks, Sage Publications.

Stoecker, R. and L. Stillman (2006). <u>Who leads, who remembers, who speaks?</u> Constructing and sharing memory: community informatics, identity and empowerment, Prato 2006 (to appear 2007), Prato, Italy, Centre for Community Networking Research.

Stokman, F. N. (2001). Networks: Social. <u>International encyclopedia of the social & behavioral sciences</u>. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd**:** 10509-10514.

Suchman, L. (1995). "Making work visible." Communications of the ACM 38(Sep): 56-61+.

Suchman, L. (1996). Constituting shared workspaces. Cognition and communication at work. Y. Engestrom and D. Middleton. Cambridge; New York, NY, USA, Cambridge University Press: 35-60.

Suchman, L. (1999). Working relations of technology and use. The social shaping of technology. J. Wajcman and D. A. MacKenzie. Milton Keynes, [Eng.]; Philadelphia, Pa., Open University Press: 258-265.

Suchman, L. (2002). "Located accountabilities in technology production." Retrieved 15 September, 2004, from www.comp.lancs.ac.uk/sociology/papers/Suchman-Located-Accountabilities.pdf.

Suchman, L., J. Blomberg, et al. (1999). "Reconstructing technologies as social practice." The American Behavioral Scientist 43(Nov/Dec): 392-408.

Taylor, C. (1993). To follow a rule... Bourdieu: Critical perspectives. C. J. Calhoun, E. LiPuma and M. Postone. Chicago, University of Chicago Press: 45-60.

The National Office for the Information Economy. (2002). "Defining the digital divide." Retrieved 17 June, 2003, from http://www.noie.gov.au/projects/access/Connecting_Communities/divide.htm.

Thompson, J. B. (1989). The theory of structuration. Social theory of modern societies: Anthony Giddens and his critics. D. Held and J. B. Thompson. Cambridge [England]; New York, NY, USA, Cambridge University Press.. 56-76.

Thrift, N. (1985). "Bear and mouse or bear and tree? Anthony Giddens's reconstitution of social theory." Sociology 19(4): 609-622.

Toews, J. E. (2001). Linguistic turn and discourse analysis in history. International encyclopedia of the social & behavioral sciences. N. J. Smelser and P. B. Baltes. Oxford, Elsevier Science Ltd: 8916-8922.

Tonnies, F. (1970). The constrast between *Gemeinschaft* and *Gesellschaft*. Modern sociology: Introductory readings. P. Worsley. Harmondsworth, Penguin: 295-301.

Tufte, E. R. (1997). Visual explanations: Images and quantities, evidence and narrative. Cheshire, Conn., Graphics Press.

Tufte, E. R. (2003). The cognitive style of Powerpoint. Cheshire, Conn., Graphic Press.

Turing, A. M. (1950). "Computing machinery and intelligence." Mnd 433-460.

Turner, J. H. (1987). Analytical theorizing. Social theory today. A. Giddens and J. H. Turner. Cambridge, Polity: 156-194.

Upward, F. (1997). "Structuring the records continuum, part two: Structuration theory and recordkeeping." Archives and Manucscripts 25(1).

Urquhart, C. (2001). An encounter with grounded theory: Tackling the practical and philosophical issues. Qualitative research in information systems: Issues and trends. T. E. Hershey, PA, Idea Group Publishing: 114-140.

Urry, J. (1982). "Duality of structure: Some critical issues." Theory, Culture & Society 1: 121-154.

Urry, J. (1985). Social relations, space and time. Critical human geography. D. Gregory and J. Urry. Basingstoke, Macmillan: 20-48.

Urry, J. (1991). Time and space in Giddens' social theory. Giddens' theory of structuration: A critical appreciation. C. G. A. Bryant and D. Jary. London; New York, Routledge: 160-175.

Urry, J. (1999). " 'Automotility, car culture and weightless travel' (draft)." Retrieved 21 July, 2003, from http://www.comp.lancaster.ac.uk/sociology/soc008ju.html.

Urry, J. (2000). Sociology of time and space. The blackwell companions to social theory. B. S. Turner. Malden, MA, Blackwell Publishers.

Vandenberghe, F. (1999). "Powers of freedom. Reframing political thought (review)." The Sociological Review 47, no. 4, pp. (29)(4): 824-826.

Victorian Council of Social Service. (1997, September). "Bridges and barriers research project." Retrieved 7 March, 2001, from http://www.skills.net.au/download/Bbrpt.doc.

Vidich, A., J. Bensman, et al. (1970). Reflections on community studies. Modern sociology: Introductory readings. P. Worsley. Harmondsworth, Penguin: 345-349.

Virnoche, M. (2001). "Pink collars on the internet: Roadblocks to the information superhighway." Womens Studies Quarterly 29(3/4): 80-102.

Wadsworth, Y. (1998). "What is participatory action research?" Retrieved June 17, 2001 http://www.scu.edu.au/schools/gcm/ar/ari/p-ywadsworth98.html.

Wajcman, J. (1991). Feminism confronts technology. North Sydney, Allen and Unwin.

Wajcman, J. (2000). "Reflections on gender and technology studies: In what state is the art?" Social Studies of Science 30(3): 447-464.

Wajcman, J. (2001). Gender and technology. International encyclopedia of the social & behavioral sciences. Oxford, Elsevier Science Ltd: 5976-5979.

Wajcman, J. and D. A. MacKenzie (1999). The social shaping of technology. Milton Keynes, [Eng.]; Philadelphia, Pa., Open University Press.

Walsham, G. (1995a). "The emergence of interpretivism in IS research." Information Systems Research 6(4): 376-394.

Walsham, G. (1995b). "Interpretive case studies in IS research: Nature and method." European Journal of Information Systems 4(2): 74-81.

Warren, R. L. (1972). The community in America. Chicago, Rand McNally.

Webb, S. A. (2003). Technologies of care. Information and communication technologies in the welfare services. E. Harlow and S. A. Webb. London; Philadelphia, Pa., Jessica Kingsley Publishers: 223-238.

Weber, M. and W. V. Heydebrand (1994). Sociological writings. New York, Continuum.

Weber, M., C. W. Mills, et al. (1958). From Max Weber: Essays in sociology. New York, Oxford University Press.

Weber, M., E. Shils, et al. (1949). The methodology of the social sciences. New York, The Free Press.

Weick, K. (1990). Technology as eviquoque: Sensemaking in new technologies. Technology and organizations. P. S. Goodman and L. Sproull. San Francisco, Jossey-Bass: xxi, 281.

Weick, K. E. (1995). Sensemaking in organizations. Thousand Oaks, Sage Publications.

Wellman, B. (2001). "Computer networks as social networks." Science Retrieved 14 September, 2001, from http://www.chass.utoronto.ca/~wellman/publications/index.html.

Wellman, B. and G. Milena (1998). Net surfers don't ride alone: Virtual community as community. Networks in the global village: Life in contemporary communities. B. Wellman. Boulder, Colo, Westview Press. 331-67: xxiv, 377 ,.

Whitwell, G. (1998). "What is economic rationalism?" Retrieved February 20, 2002, from

http://www.abc.net.au/money/currency/features/feat11.htm.

Whyte, W. F. (1966). <u>Street corner society</u>. Chicago, Chicago University Press.

Wiggins, R. (2000). "Al gore and the creation of the internet." <u>First Monday</u> 5(10): online.

Wilcox, D. (2001). "The story of uk community networking." Retrieved 13 September, 2005, from http://www.partnerships.org.uk/stories/intro.htm.

Wilcox, D. (2005). Personal communications.

Williams, R. (1961). <u>The long revolution</u>. London, Chatto and Windus.

Williams, R. (1989). <u>Resources of hope: Culture, democracy, socialism</u>. London; New York, Verso.

Williamson, K. (1984). Information seeking by users of a citizens' advice bureau. <u>Department of Librarianship, Archives and Records.</u> Melbourne, Monash University.

Willmott, H. (1996). " "Smart machine derailed" - engineers accuse passengers." <u>Electronic Journal of Radical Organization Theory</u> 2(2): online.

Winter, I. (2001). Major themes and debates in social capital literature: The Australian connection. <u>Social capital and public policy in Australia</u>. I. Winter. Melbourne, Australian Institute of Family Studies. 2002**:** 17-42.

Wiseman, J. (2005). Designing public policy after neo-liberalism. <u>Community and local governance in Australia</u>. P. Smyth, T. Reddel and A. Jones. Sydney, University of New South Wales**:** 57-74.

Wrong, D. (1961). "The oversocialized conception of man in modern society." <u>American Sociological Review</u> 26: 183-93.

Wyatt, J. (2001). E-enabling the voluntary and community sectors. Glasgow, Hall Aitken with Ashbrook Research and Partnerships Online.

Yates, J. and W. Orlikowski (2002). "Genre systems: Structuring interaction through communication norms." <u>The Journal of Business Communication</u> 39(Jan): 13-35 ,23 pages.

Yates, J. and W. J. Orlikowski (1992). "Genres of organizational communication: A structurational approach to studying communication and media." <u>Academy of Management. The Academy of Management Review</u> 17(Apr): 299-327

Yates, J., W. J. Orlikowski, et al. (1995). "Constituting genre repertoires: Deliberate and emergent patterns of electronic media use." <u>Academy of Management Journal</u> Best Papers Proceedings 353-357.

Zappalà, G. (2000). How many people volunteer in Australia and why do they do it? <u>Research and Advocacy Briefing Paper</u>. Sydney, The Smith Family.

Zuboff, S. (1988). <u>In the age of the smart machine: The future of work and power</u>. New York, Basic Books.

Appendix A

Interview Schedule

1. Basic Demographic data, qualifications and work history.

2. What work the coordinator does in the Neighbourhood House.

3. Work practices before the introduction of computing and the Internet

4. Values of Neighbourhood Houses; global, for workers, with clients

5. Work now performed with computers/Internet. Description of what is done with email, World Wide Web, Search Engines?

6. Perceptions of change in the activity and values of Neighbourhood Houses with the introduction of computers and the Internet.

7. Whether moves towards electronic reporting and management affecting the human side of the organisation and operation in a potentially negative way.

8. Positive or negative relationships between the way IT is used and the way that clients are looked after.

9. What things seem personal and normal, what things don't with computers. Interaction with computers: opportunities and constraints.

10. Changes in patterns of communication with workers, agencies, clients.

11. Experiences in being closer or more distant to other organisations and people because of electronic communication.

12. Experiences with changes in uses or perceptions of time because of electronic communication.

13. Use of computers/Internet at home. Work at home. Changes to how family communicates for work or leisure.

14. Gender as a factor in the interviewee's use of electronic equipment.

Appendix B

Incorporating Indigenous World Views in Community Informatics