

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

An Information System for Psychotherapy Research using Expert Commentary of Videotaped Expertise

A dissertation presented in partial fulfilment of the requirements
for the degree of Doctor of Philosophy in Information Systems
at Massey University

Philip Desmond Carter

1997

Abstract

This project looked at the domain of psychotherapy research and asked the question - How can Information System's technology and methods be applied and developed to serve this domain's current needs? Review of the psychotherapy research literature identified 'astute observation and careful description' as the most productive next step in research efforts. As one response, EXpert Commentary of Videotaped Expertise (EXCOVE) was developed as a Knowledge Elicitation (KE) approach. EXCOVE aims to maximise the quality of observation and description of psychotherapy processes. EXCOVE is the collection of expert commentary on specific videotaped, expert-executed events. This strategy aims to retain the advantages of open questioning, minimise the possibility of copious and inaccurate data, and trigger and bring to consciousness the viewing expert's cognitive processes. Psychodrama was chosen as the psychotherapy of focus. Six psychodrama sessions totalling seven hours were videotaped and at least four expert commentaries on each session were collected using the EXCOVE approach.

A computer system was then required to manage this data and to assist in the various qualitative-type analyses envisaged for the data. However, Computer-Assisted Qualitative Data Analysis Software (CAQDAS) were limited in their abilities to meet these requirements. Therefore, a computer system called Flexible Environment for Research And Learning (FERAL) was developed. FERAL's behaviour was modelled on a *sheets-of-paper* metaphor which is proposed as an improvement to some aspects of existing CAQDAS.

The collected data was managed in a FERAL application and various analysis tasks were completed with facilities developed in FERAL. Five psychodrama topics were investigated - *phases, doubling, mirroring, unpredictability, and action*. Results of the investigations appeared to provide some useful contributions to the understanding of psychodrama. The results also indicated that data collected using EXCOVE and its various mechanisms were useful. FERAL was found to be useful during analysis, particularly the data co-ordination facilities and the *sheets-of-paper* interface.

The project resulted in a working information system for psychodrama that contained a sufficient amount of data to be useful for analysis of various psychodrama topics. The process of developing an information system for this application domain also resulted in the identification of innovations in KE and CAQDAS and their initial verification in a live application.

Preface

In 1994 I completed a post-graduate degree in computer science enthusiastic about the creative possibilities of computers. At the same time I was invigorated and inspired by the positive changes I was achieving through participation in a range of psychotherapies. I was keen to continue exploration in both these areas and also study for a PhD. Fortuitously, the new appointment to the Chair of Information Systems, Professor Jon Patrick, was also a psychotherapist and able to bridge the two fields. He assisted me to integrate these two interests in a PhD project with himself as the chief supervisor.

This thesis presents the work done in this project. Chapter one outlines the research questions posed by the research and provides an overview of the research process and rationales for the approaches taken. Chapter two illustrates some of the challenges facing psychotherapy research and introduces EXpert Commentary Of Videotaped Expertise (EXCOVE) an approach to data collection or knowledge elicitation developed as a response to these challenges. Chapter three presents psychodrama, the psychotherapy of focus, giving background information and details of areas that are subjects of later analysis and investigation. Chapter four describes EXCOVE from the perspective of IS by discussing the nature of expertise, the scope of KE and detailed discussion of the important mechanisms of EXCOVE: expert commentary, video recording, and multiple commentary. Flexible Environment for Research And Learning (FERAL) is a computer system developed to organise the data collected through EXCOVE and to provide analysis tools. Chapter five critiques Computer-Assisted Qualitative Data Analysis Software (CAQDAS), the family of computer systems FERAL belongs to. The merits and limitations of CAQDAS are outlined and the innovations required are highlighted. Chapter six outlines the development of FERAL and presents its functions. Chapter seven describes the process of data collection using EXCOVE. Chapter eight presents the analysis done on the data using FERAL. And Chapter nine concludes by discussing the contributions of the project.

Publications

The publications that have been generated from this project so far are:

Carter, P. (1994). Towards a definition for spontaneity. *Australian and New Zealand Psychodrama Association, Inc. Journal*, 3, 39-40.

Carter, P., & Patrick, J. (1997, April). *Expert Commentary on Videoed Expertise: An approach to knowledge elicitation in little-understood complex domains*. Paper presented at the 3rd Pacific Asia Conference on Information Systems, Brisbane, Australia.

Acknowledgements

There are many people I wish to thank for their help in this project. Prof. Jon Patrick has been a rich source of ideas and unfailing in his support and warmth. Dr. Frank Deane, my co-supervisor, added his expertise in the field of psychotherapy research, as well as guidance and encouragement. Dr. Elizabeth Kemp advised on the knowledge elicitation aspects of the project. Dr. Udo Kelle gave useful feedback on chapter five's summary of the field of software for assisting qualitative data analysis.

The psychodrama community were supportive and open to look at themselves. Paddy Paltridge's enthusiasm at the beginning of the project reassured me that such a project would be worthwhile and workable from a psychodrama point of view. The willingness of Dr. Max Clayton to give his time and support was especially welcome and constructive. The opportunity to deepen my study of psychodrama and get to know several leading practitioners personally has been satisfying and productive. My thanks also to all the participants in the video sessions and the expert commentators.

Thanks also to Massey University for providing a three year Doctoral Scholarship that enabled me to devote myself full-time to the project during that period. And thanks to the multitude of people I have talked with about this endeavour. My mother, Eleanor Berry, for the tenacity genes. My partner Robin for her warmth and taking on numerous chores so that I could focus on the PhD work. And finally our daughter Lily for being so adorable and full of adventure.

Phil Carter
Auckland, 1997

Table of Contents

PREFACE	III
TABLE OF CONTENTS	V
LIST OF FIGURES	VII
LIST OF TABLES.....	IX
CHAPTER 1 INTRODUCTION.....	1
1.1 Knowledge elicitation (KE) in ill-defined domains	1
1.2 Usability in Computer-Assisted Qualitative Data Analysis Software (CAQDAS)...	2
1.3 The development of Flexible Environment for Research And Training (FERAL) ..	3
1.4 Application domain focused research.....	4
1.5 Acquiring domain familiarity and data collection.....	6
1.6 Analysing the data.....	7
1.7 Thesis structure.....	10
CHAPTER 2 PSYCHOTHERAPY RESEARCH AND EXPERT COMMENTARY OF VIDEOTAPED EXPERTISE (EXCOVE).....	11
2.1 Psychotherapy research	11
2.1.1 Dealing with complexity.....	11
2.1.2 Research methodologies	12
2.1.3 Level of description.....	13
2.1.4 Ecological validity	14
2.1.5 Observation and description.....	15
2.1.6 Group psychotherapy research.....	16
2.1.7 Conclusions.....	18
2.2 EXCOVE from a psychotherapy research perspective.....	18
2.2.1 High expertise therapists	18
2.2.2 Video recording.....	19
2.2.3 Multiple expert commentaries	20
2.3 Conclusions.....	22
CHAPTER 3 PSYCHODRAMA.....	23
3.1 Psychodrama background.....	23
3.1.1 Origin of psychodrama	23
3.1.2 A definition of psychodrama.....	23
3.1.3 The practice of psychodrama.....	27
3.1.4 Psychodrama research.....	27
3.1.5 Psychodrama theory.....	29
3.2 Psychodrama topics investigated.....	30
3.2.1 Psychodrama phases	30
3.2.2 Doubling.....	32
3.2.3 Mirroring	34
3.2.4 Spontaneity	36
CHAPTER 4 KNOWLEDGE ELICITATION (KE) AND EXCOVE.....	37
4.1 Knowledge elicitation.....	37
4.1.1 What is KE.....	37
4.1.2 The scope of KE.....	38
4.1.3 The nature of expertise	40
4.2 EXCOVE from a KE perspective	42
4.2.1 Expert commentary	42
4.2.2 Multiple experts	44
4.2.3 Video recordings	44
4.3 Conclusions.....	46

CHAPTER 5 COMPUTER-ASSISTED QUALITATIVE DATA ANALYSIS

SOFTWARE (CAQDAS).....	47
5.1 Background.....	47
5.1.1 History.....	47
5.1.2 Types.....	48
5.1.3 Evaluation.....	49
5.2 Merits of CAQDAS.....	51
5.2.1 Systematic and explicit.....	51
5.2.2 Efficiency.....	52
5.2.3 Creativity.....	52
5.3 Limitations and dangers of CAQDAS.....	53
5.3.1 Types of negative impact.....	54
5.3.2 Coding confusion and overuse.....	56
5.3.3 The computer as a medium.....	58
5.4 The innovations required.....	62
5.4.1 Non-text data types.....	63
5.4.2 Temporal support.....	64
5.4.3 Textual data.....	65
5.4.4 Coding mechanisms.....	65
5.4.5 Memoing mechanisms.....	66
5.4.6 Multi-purpose.....	67
5.4.7 User Interface.....	68
5.5 Design decisions.....	70
5.5.1 Functionality.....	70
5.5.2 Interactivity.....	70
CHAPTER 6 FLEXIBLE ENVIRONMENT FOR RESEARCH AND LEARNING (FERAL).73	
6.1 System requirements.....	73
6.1.1 Functions.....	73
6.1.2 Interactivity.....	74
6.2 The development approach and process.....	75
6.2.1 The development approach.....	75
6.2.2 The development process.....	76
6.3 Description of FERAL.....	76
6.3.1 Overview of FERAL's behaviour and operation.....	76
6.3.2 FERAL's interface.....	78
6.3.3 FERAL's functions.....	82
6.4 Discussion of FERAL.....	83
6.4.1 Limitations of FERAL.....	83
6.4.2 Potential future development.....	84
CHAPTER 7 DATA COLLECTION.....87	
7.1 Psychodrama filmings.....	87
7.1.1 Filming one.....	87
7.1.1.1 Background to filming one.....	87
7.1.1.2 Participants in filming one.....	88
7.1.1.3 Procedure of filming one.....	89
7.1.1.4 Ethical issues in filmings.....	89
7.1.1.5 Technical procedures for filming one.....	91
7.1.1.6 Results of filming one.....	91
7.1.1.7 Discussion of filming one.....	92
7.1.2 Filming two.....	95
7.1.2.1 Procedure of filming two.....	95
7.1.2.2 Results of filming two.....	97
7.1.2.3 Discussion of filming two.....	98
7.1.3 Filming three.....	99
7.1.3.1 Procedure of filming three.....	99
7.1.3.2 Results of filming three.....	100
7.1.3.3 Discussion of filming three.....	100
7.1.4 Results of participant ratings.....	101
7.1.5 Discussion of filmings.....	101
7.1.6 Transcription of filmings.....	102
7.2 Expert commentary.....	103
7.2.1 Expert commentators.....	103

7.2.2 Commentary procedure.....	103
7.2.3 Commentary details.....	105
7.2.4 Discussion of commentaries.....	105
7.3 Transfer of data into FERAL applications.....	107
CHAPTER 8 ANALYSIS.....	108
8.1 Initial analysis tasks.....	108
8.1.1 Fine-grain manual encoding.....	108
8.1.2 Macro encoding of commentaries.....	109
8.1.3 Frequency counts of terms.....	110
8.2 Analysis method.....	112
8.3 Analyses of psychodrama topics.....	113
8.3.1 Investigation of psychodrama phases.....	113
8.3.2 Investigation of doubling.....	119
8.3.3 Investigation of mirroring.....	126
8.3.4 Comparison of doubling and mirroring.....	133
8.3.5 Investigation of unpredictability.....	134
8.3.6 Investigation of action.....	138
CHAPTER 9 CONCLUSIONS.....	143
9.1 Contributions to psychodrama and psychotherapy.....	143
9.1.1 The project's contributions to psychodrama.....	143
9.1.2 The project's contributions to psychotherapy research.....	145
9.2 Discussion of EXCOVE and KE.....	146
9.2.1 Evaluation of EXCOVE's aims.....	146
9.2.2 Evaluation of the use of video recording.....	148
9.2.3 Encouraging expert participation.....	150
9.2.4 Discussion of the analysis method.....	151
9.2.5 Summary of EXCOVE.....	152
9.3 Discussion of FERAL.....	153
9.3.1 FERAL's support of analysis tasks.....	153
9.3.2 FERAL's benefits for qualitative analysis.....	159
9.3.3 FERAL's future development.....	163
9.3.4 Evolutionary prototyping.....	164
9.3.5 The development of FERAL as valid research.....	165
9.4 Project conclusions.....	166
REFERENCES.....	168
APPENDIX A: ETHICS APPLICATION.....	186
APPENDIX B: FILMING ONE FORMS.....	192
APPENDIX C: FILMING TWO AND THREE FORMS.....	200
APPENDIX D: EXPERT COMMENTARY FORMS.....	210
APPENDIX E: FERAL'S DEVELOPMENT.....	214
E.1 Pre-FERAL developmental systems.....	214
E.2 Major FERAL developments.....	217
E.3 Technical details of FERAL's development.....	219
E.4 Future technical developments.....	225
APPENDIX F: FERAL'S MENU FUNCTIONS.....	227
F.1 Background menu.....	227
F.2 Document menus.....	228
F.3 Codeset menus.....	230
F.4 Instanceset menus.....	231
F.5 Memo menus.....	232
F.6 Note menus.....	233
F.7 Folder menus.....	233
F.8 Video control.....	233
APPENDIX G: MANUAL FINE-GRAIN ENCODING OF A COMMENTARY.....	234
APPENDIX H: MACRO CODES FOR A COMMENTARY.....	244

List of Figures

Figure 6.1 FERAL 's elements and their logical operations.....	77
Figure 6.2 FERAL 's windows and how they can be arranged.....	78
Figure 6.3 The different types of windows in FERAL	79
Figure 6.4 FERAL 's video control.....	80
Figure 6.5 A window menu.....	80
Figure 6.6 Menu for the contents of a window	81
Figure 6.7 FERAL 's background menu.....	81
Figure 8.1 Phases for filming one.....	114
Figure 8.2 Phases for filming two	115
Figure 8.3 Phases for filming three.....	116
Figure 9.1 The background menu for the filming one application.....	156
Figure 9.2 Part of the 'memo' area for the filming one application.....	157
Figure 9.3 The area for expert D's commentary on filming one	158
Figure E.1 The concepts subsystem showing the concept 'observer' area.....	215
Figure E.2 Part of an intermediate system pre-FERAL.....	216

List of Tables

Table 1.1 The different psychodrama analyses topics and dimensions	8
Table 3.1 Phases according to different writers.....	31
Table 3.2 Summary of literature on doubling.....	33
Table 3.3 Summary of literature on mirroring.....	35
Table 5.1 Evaluation of CAQDAS - adapted from Weitzman and Miles (1995).....	50
Table 7.1 Average ratings for filming two.....	98
Table 7.2 Average ratings for filming two - graphical	98
Table 7.3 Average ratings for filming three.....	100
Table 7.4 Average ratings for filming three - graphical	101
Table 7.5 Average ratings for filmings two and three - graphical.....	101
Table 7.6 Expert commentators and their experience	103
Table 7.7 Expert commentary on the different psychodramas.....	104
Table 8.1 Counts of terms in commentaries and codes.....	110
Table 8.2 Commentary on 'doubling'	120
Table 8.3 Summary of commentaries on 'doubling'	122
Table 8.4 Commentary on 'mirroring'	126
Table 8.5 Occurrences of 'mirroring' as described in the literature	128
Table 8.6 Mimicking at a distance	130
Table 8.7 Mimicking at the same time.....	131
Table 8.8 Feedback and response	132
Table 8.9 Commentary relating to 'unpredictability' and 'the unknown'.....	135
Table 8.10 Commentary on action.....	139
Table 9.1 Commentator convergence.....	151

Chapter One

Introduction

This thesis involved work in two areas of Information Systems (IS) research: knowledge elicitation (KE) in ill-defined domains, and the usability of Computer-Assisted Qualitative Data Analysis Software (CAQDAS). This chapter introduces the work done in these two areas, the difficulties that were identified and the IS research questions these posed, and outlines of this project's responses and solutions. One of the solutions necessitated the development of a computer system. The role of systems development in IS research and how the original design innovations in this project's systems development count as valid IS research are outlined. This chapter then discusses the value of focusing on an application domain from the point of view of IS research. It also is through understanding the needs of the application domain, in this case psychotherapy research, that the motivation and rationale for the work can be understood. The project's processes of domain familiarisation and data collection are described. Finally, the analysis approach taken for investigating the data collected in psychodrama is introduced. These analyses provided some testing, in a real, complex situation, of the value of the IS innovations in KE and CAQDAS that were developed in this project.

1.1 Knowledge elicitation (KE) in ill-defined domains

KE is the initial phase of knowledge acquisition (KA) and is an important area within IS (see section 4.1.2). However, it has mainly been applied in the building of Expert Systems (ES) and so the process of KA independent of whether an ES is developed has not been fully appreciated. Furthermore, as a consequence of ES mainly focusing on well-structured domains, the use of KE for ill-defined domains has not been explored in any depth. KE in ill-defined domains is the focus of this project.

Due to the poorly understood nature of ill-defined domains, an open questioning approach with experts is not only useful, but also necessary. Open questions are used to get certain types of information that can be distorted using specific questions. This includes unanticipated information, an expert's path of association, the relative importance of various aspects, the frame of reference, the chronological order, and the

vocabulary (Gorden, 1975). However, the resulting data using open questions can be copious, irrelevant, and incomplete (Cooke, 1994). The particular challenge or research question for this project involved how to retain the advantages of open questioning while minimising the disadvantages.

One way, is to get the experts to focus on specific examples of expert practice and make commentary in response to open questions. Specific instances cue and activate an expert's processing mechanisms (Regoczei, 1992) and details of operation (Brule & Blount, 1989). This project formulated an approach called EXCOVE (EXpert Commentary Of Videoed Expertise). EXCOVE involves the collection of multiple expert commentary on expert-executed events recorded on videotape. Although none of the components of EXCOVE were new, the integration and particular stress was novel. It is not suggested by Wood and Ford (1993) or given by Cooke (1994).

EXCOVE was given an initial evaluation through its application in psychodrama. Six psychodramas totalling seven hours were video recorded and at least four commentaries on each video recording were made. Use of this data in analyses of several topics in psychodrama indicated EXCOVE's approach can be successful in retaining the advantages of open questions and generating relevant data (see discussion in section 9.2).

1.2 Usability in Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

This project looked at the merits and limitations of computer systems that assist qualitative data analysis and the usability of these systems or how well they served the needs of their users. The study of the use, impact, and effectiveness of computer systems is a major area of concern in IS. The investigation involved analyses of the relevant literature and the functions and operations of the systems themselves. A more comprehensive investigation would have been achieved with a survey of users, of which only one has been reported in the literature (Lee & Fielding, 1995).

The investigation found use of CAQDAS can offer a systematic and explicit approach to analysis and encourage efficiency and creativity. However, many types of possible negative impact were identified. These are discussed under the following headings in section 5.3.1: methodological distortion, orthodox approach, use because easy, too much data, distance from data, and mechanical displaces analytical. There were also difficulties that can be encountered when computers are used. These are discussed in section 5.3.3 under the headings: influence of the tools, illusion of robustness, phobia or euphoria, unfamiliarity, complexity with functionality, and limited interface.

From these findings and the requirements of a system to manage and provide analysis tools for data generated through the use of EXCOVE, several specific areas where innovations were required were identified. Section 5.4 outlines these under the headings: non-text data types, temporal support, textual data, coding mechanisms, memoing mechanisms, multi-purpose, and human-computer interface organisation and operation.

1.3 The development of Flexible Environment for Research And Learning (FERAL)

The resulting research question for this project was how to design and build an information system that might address the above concerns. Consideration of the above points plus an analysis of the advantages of manual, paper-based methods of analysis resulted in the formulation of a new interface based on a *sheets-of-paper* metaphor. The interface was implemented as part of a new information system called FERAL that also integrated some of the other innovations that were identified.

As Nunamaker, Chen and Purdin (1991) point out systems development of itself does not constitute research; it must involve the development of some innovation. Nunamaker *et al.* (1991) and Parker, Wafula, Swatman and Swatman (1994) also argue that development is essential to IS research because fundamentally IS is applied and concerns the design, delivery and use of information systems. They argue strongly for the use of systems development in testing and developing theory. They say the developed system can also be an artefact that becomes the focus of expanded and continuing research.

The development of FERAL was necessary to develop, refine, and test the original design innovation of the *sheets-of-paper* interface. The *sheets-of-paper* interface as implemented in FERAL consists of any number of movable, resizable windows within any number of areas or workspaces where only one area is visible at a time. All operations are achieved through popup menus that are directly attached to the object they operate on whether that be the window itself, or a selection of text within that window. See section 6.3 for a full description of FERAL and its interface. While the movable, resizable windows are an important part of the interface, they are also central to most other recent computer systems. The unique characteristics of FERAL's implementation of the *sheets-of-paper* interface can be summarised as the:

- **Areas.** Simulates the operation of paper within discrete physical areas, for example, desktop and filing cabinet.

- **Popup menus.** Simulates the direct way operations are done to a piece of paper. While it is not exactly the same, it is more direct than doing the operation through a remote menubar.

As well as developing the design innovation of the *sheets-of-paper* interface, the development and use of FERAL also served two other important purposes. It provided a means and a system for the management and analysis of data collected using EXCOVE and the initial testing of EXCOVE in an application domain. It also provided a system with 'live' data for the domain of psychotherapy research.

Section 9.3 summarises the benefits FERAL offered in the analyses of the psychodrama topics. From initial testing in the domain of psychodrama, a set of benefits of the flexible interface modelled on the *sheets-of-paper* metaphor for qualitative research in general is proposed. These benefits are discussed under the headings: user control, transparency, aesthetics, closeness to data, auditing and system closure, easing difficulties with using computers, FERAL applications, adaptability for training, and assistance for good programming style.

1.4 Application domain focused research

The rationale for undertaking the above two tasks can only be understood by knowing the overall goal of the project. This project looked at the domain of psychotherapy research and asked the question: How can IS technology and methods be applied and developed to serve its current needs? Review of the psychotherapy literature (chapter 2) identified 'astute observation and careful description' as the most productive next step in research efforts. KE was considered one way to achieve this. However, existing KE methods were found to be limiting and as a result EXCOVE was formulated. A computer system was then needed to manage and analyse the data generated using EXCOVE. Investigation of existing CAQDAS highlighted certain limitations and as a result a new metaphor for the interface was formulated and FERAL was developed. The IS innovations incorporated in the work on EXCOVE and FERAL were then tested against real, complex data in psychotherapy research.

This research process was therefore initiated and driven by an application domain, in this case psychotherapy research and in particular, psychodrama. As well as the obvious advantage of delivering a useable information system for a set of users (i.e., psychotherapy researchers), this process of domain focus had two main advantages from an IS perspective, namely:

1. **Identification of innovations.** Both EXCOVE and the *sheets-of-paper* interface owe their creation to the initial desire to serve the purposes of psychotherapy research. Their development and refinement were also enhanced through the presence of a real, complex domain to which they were to serve.
2. **Ecological validity.** The validity and usefulness of an innovation can only be tested fully in its application to a real, complex domain. In-depth and careful study of a domain is needed so that the domain needs are appreciated and the innovation can be applied in realistic and meaningful ways. Without this factoring in and use of a domain's complexity, the ecological validity of an innovation can not be known with any surety. For example, some new KE methods have been inadequate because they were developed and trialled on simplified sets of data (Regoczei, 1992).

This process of starting with a domain and letting the domain needs initiate and drive the research does not seem to have been explicitly recognised in IS as a possible research approach. Galliers (1992) taxonomy of research methodologies for use in IS are a generic set used by a variety of disciplines. He does mention systems development which he describes as a method that can be used within one of these methodologies. However, nothing like the structure used in this project is given as a possible methodology. This is surprising, because IS is an applied discipline. IS has been described as the effective design, delivery, use and impact of information technology in organisations and society (Avison & Fitzgerald, 1995). Applying research to real-world domains and their problems and opportunities is therefore important in IS (Nunamaker *et al.* 1991).

Perhaps the research approach used in this project could be developed into a methodology that is distinctive to IS. Given that IS is striving to obtain a identity that distinguishes it from other fields and a corresponding set of techniques and methods (Mingers & Stowell, 1997), such a 'methodology' should be welcome. Especially so considering the IS researcher community has recognised the value of a plurality of research methodologies and perspectives (Avison, 1997). Perhaps the closest is the viewpoint of Nunamaker *et al.* (1991) in stressing the importance of systems development for the development and testing of innovations.

Importantly, the delivery of an information system for an application domain in and of itself does not constitute research. Research could be described as an activity that contributes to the combined knowledge of the field. So the research process must encapsulate the introduction and investigation of some innovation with the new knowledge conceptualised and generalised so that it is accessible and useful to those who would apply it.

1.5 Acquiring domain familiarity and data collection

Acquiring domain familiarity and collecting sufficient data to be analytically useful was an important part of the project. These processes are introduced below.

The domain of the project was psychotherapy research and training. Psychotherapy aims to achieve change for a person in their psychological and social behaviour. Psychotherapy research is primarily concerned with answering the questions: “Does psychotherapy work to help people?”, and “How does it work to help people?” It is the science of how human behavioural change is actualised. The author's vision is that such a science will assist people to take hold of their lives, to find a sense of vitality, and lead meaningful and creative lives. This links with an underlying vision for IS that is echoed in Lyytinen and Klein's (1985) application of Habermas' critical theory to IS; that IS will be used to increase human understanding, emancipate people from undesirable social and physical constraints, distorted communication, and misapplied power.

(i) Domain familiarisation

The first task in this study was to become familiar with and knowledgeable of the domain. Land (1992) points out that knowledge of the users' requirements is crucial to the design of a robust and effective information system. What was perceived to be the most productive and logical approach was followed.

The first step was to become acquainted with the latest writings by leading commentators in the field of psychotherapy research. The overview is presented in chapter two. Their main conclusions are that the field understands little of the process of psychotherapy and needs astute observation and careful description of psychotherapy processes. This perceived lack of understanding led to the decision to first devote attention to psychotherapy process research before focusing on therapist training. The rationale being that it is better to have some understanding of the psychotherapy process before developing a training system.

The next step was to get to know the theory and practice of one specific psychotherapy with as much intimacy and detail as possible using as many avenues as were available. Such an approach is similar to action research in that the author became involved in the organisation, but different in that the involvement was not for the initiation of some change. The involvement was more like that of an ethnographer seeking to understand through becoming immersed. Psychodrama was chosen as the specific psychotherapy to be studied because of previous exposure and familiarity by the author. Psychodrama is distinctive in its use of dramatic methods and techniques. As well as reading extensively,

the author undertook psychodrama training, which served the twin purposes of increasing domain familiarity and creating contact with practitioners. This contact also assisted the process of getting practitioners involved in data collection. Chapter three outlines psychodrama and the lack of conceptual clarity and its theoretical disarray as a discipline, which confirmed the need for astute observation and careful description.

(ii) Collecting psychodrama data

Data collection in this project using the EXCOVE approach involved the video recording of live psychodrama groups lead by expert psychodrama practitioners and the audio recording of expert commentaries on the video recordings. Identifying and involving experts were therefore essential. The strategy adopted was to attempt to first involve the main inspirational figure in the field with the expectation that his involvement would interest and stimulate other experts to become involved. To do this the author undertook psychodrama training with this person. This process appeared to be successful and is described in section 7.1.1.1.

Undertaking training also assisted the author to know, and become known, to other practitioners which, in turn, assisted the author to:

- Contact other experts and prospective participants in the filmings
- Encourage trust through being a person known to the field
- Identify any concerns and issues that might effect how to manage confidentiality for the psychodrama participants involved in the data collection
- Identify the amount of interest in the project from the field and what might be the length and nature of involvement and co-operation possible.

1.6 Analysing the data

After the development of the EXCOVE approach and making FERAL operational a phase of detailed data analysis was undertaken. There were two main purposes for analysing the EXCOVE-collected data using FERAL:

1. To generate new knowledge about psychodrama
2. To provide a basis for evaluation of the usefulness and limitations of EXCOVE and FERAL.

To fit within project time constraints and as a first step, analyses were completed by the author in the role of psychodrama researcher. The topics chosen and to some extent the interpretations arrived at were a product of the author's understanding and 'prejudices'. The author accumulated domain knowledge through reading, psychodrama director training, participation in psychodrama workshops, and field contact

(conferences, meetings, and personal contacts). Accumulating domain knowledge had the benefits of:

- Increasing the chances of the analyses contributing to knowledge of psychodrama
- Simulating the actions of prospective users of EXCOVE and FERAL who will be researchers with domain knowledge, thereby increasing the validity of the evaluations of EXCOVE and FERAL
- Facilitating a greater range of analytical approaches as different approaches require differing researcher initiatives in deciding what to focus on and, in providing his or her own theories and hypotheses.

A greater range of topics and analytical approaches results in greater potential comprehensiveness of the evaluation of EXCOVE and FERAL. Table 1.1 shows the psychodrama topics investigated and some dimensions of the analysis approaches.

psychodrama topics	source of theory			analysis type: theory-	
	literature	researcher	data	confirmation	exploration
phases	x			x	
doubling	x			x	
mirroring	x			x	
unpredictability		x	x		x
action			x		x

Table 1.1 The different psychodrama analyses topics and dimensions

The topics fall into two main types of analysis; theory confirmation of descriptions in the literature (*phases*, *doubling*, and *mirroring*), and theory exploration using data sources (*unpredictability* and *action*). The theory confirmation or validation approach is important for achieving a cumulative approach to knowledge in an area, and if the theory is well formed, then such an approach can be efficient by giving focus to important core areas. The other data-driven, theory exploration approach can discover phenomena that are not well described by existing theory and for domains or areas of domains for which there is no existing theory. In the case of psychodrama with a mixture of well- and ill-formed theory and areas with no theory, both of these approaches to analysis are likely to be used by researchers.

Phases, *doubling*, and *mirroring* were chosen as examples of theory confirmation because they were recognised and considered important by the majority of writers (see chapter three for details). However, there were varying degrees of consensus on what the concepts meant and this was reflected in the varying amounts of theory refinement and construction that resulted from this study's analyses of the topics.

The other type of analysis, data-driven theory exploration, can be approached in different ways. One approach might be described as fine grained where the data is inspected and described in detail. Appendix G shows a manual encoding of a commentary using a fine grained approach. Given the project's time constraints, the large amount of data¹, the time needed for investigation, and the complex nature of the domain, this was not found to be a productive approach.

An alternative approach is to look for and describe the larger and more important processes and concepts present in the data. This approach fits in well with the nature of the data collected (expert commentators were asked to comment on important and core phenomena). This approach was also a logical start in the process of investigating an area of interest; later stages of the process can use a finer grained analysis.

In this project the domain was complex, the amount of data collected was large, and the commentary data was related to important, core, or interesting aspects. Two topics were chosen for theory exploration investigations. *Unpredictability* was chosen as an example of a focus originating from the researcher. In this case, *unpredictability* was an aspect of a theory of spontaneity developed by the author (section 3.2.4). *Action* was chosen because it was stressed as important by many expert commentators and because psychodrama is an action-orientated psychotherapy.

Despite the two types of analysis approaches, the analysis process that developed was similar for all topics. Due to the novelty of the data collected and the use of FERAL, the analysis process was developed as it progressed. It is similar in nature to a generic qualitative analysis process outlined by (Seidel & Kelle, 1995). Fundamentally, the process is (see section 8.2 for a detailed description):

1. Course grained analysis for noticing relevant phenomena and subsequent signposting or coding of the information of interest and memo creation
2. Systematic collection of instances of these phenomena, which involved careful organisation of relevant information

¹ Seven hours of videotape and 26 hours of audiotape.

3. Analysing these phenomena to find commonalities, differences, patterns, and structures which involved fine-grained analysis of certain data resulting in the generation of hypotheses.

1.7 Thesis structure

It is important to appreciate that the work done in this project serves as a gestalt, where the whole is greater than the sum of the parts and that the different aspects are interconnected and interdependent. The thesis is structured according to the order the work was done and so the order of the material does not indicate the importance of the topics from an IS perspective.

Chapter two illustrates some of the challenges facing psychotherapy research and introduces EXpert Commentary Of Videotaped Expertise (EXCOVE) an approach to data collection or knowledge elicitation developed as a response to these challenges. Chapter three presents psychodrama, the psychotherapy of focus, giving background information and details of areas that are subjects of later analysis and investigation.

Chapter four describes EXCOVE from the perspective of IS by discussing the nature of expertise, the scope of KE and detailed discussion of the important mechanisms of EXCOVE: expert commentary, video recording, and multiple commentary. Flexible Environment for Research And Learning (FERAL) is a computer system developed to organise the data collected through EXCOVE and to provide analysis tools. Chapter five critiques Computer-Assisted Qualitative Data Analysis Software (CAQDAS), the family of computer systems FERAL belongs to. The merits and limitations of CAQDAS are outlined and the innovations required are highlighted. Chapter six outlines the development of FERAL and presents its functions.

Chapter seven describes the process of data collection using EXCOVE. Chapter eight presents the analysis done on the data using FERAL. The analysis involved investigation of five topic areas of psychodrama and enabled some initial evaluations of the innovations developed in the project. The findings, presented in chapter nine, show EXCOVE and its mechanisms were useful. FERAL was also found to be useful especially its data co-ordination facilities and *sheets-of-paper* interface.

Chapter Two

Psychotherapy Research and EXpert Commentary Of Videotaped Expertise (EXCOVE)

The first half of this chapter examines the following important challenges facing psychotherapy research: dealing with complexity, research methodology, level of analysis, ecological validity, and developing a scientific discipline. Group psychotherapy research is also briefly reviewed. EXCOVE is an approach to data collection designed as the first step to best meet these challenges. The second half of the chapter presents EXCOVE by discussing its major components - high expertise, video capture, and multiple expert commentary - as they pertain to psychotherapy research. EXCOVE is further discussed from an IS perspective in chapter four.

2.1 Psychotherapy research

Psychotherapy is where therapist(s) and client(s) work together for some desirable change in the psychological or social functioning of the client(s). Psychotherapy research typically involves the study of the process and outcomes of change. As a science, it is in its infancy (Greenberg & Pinsof, 1986a) and faces important questions of dealing with complexity, research methodology, level of analysis, ecological validity, and developing a scientific discipline. Each of these is discussed to provide an overview of the aspects of psychotherapy research that pertain to this project. Group psychotherapy research is also briefly reviewed.

2.1.1 Dealing with complexity

The process of change involves all aspects of human functioning, including intra- and interpersonal behaviour, feelings, thoughts, values, and beliefs and so is tremendously complex. This complexity is a major problem facing research (Greenberg & Pinsof, 1986b).

Forty years of research effort reflects this complexity, and, unfortunately, also often increases it. Outcome research, the study of the presence and magnitude of change, has been a major part of research efforts. Lambert and Hill (1994) examined 348 outcome studies published between 1983 and 1989 and found an incredible 1,430 outcome measures with 840 only being used once. They concluded that outcome research is in a state of chaos, with little agreement about measures for even the most commonly studied problems.

Process research, the other major area of psychotherapy research, investigates what happens in psychotherapy sessions. Like outcome measures, process measures have 'exploded' into hundreds (Bergin & Garfield, 1994b) with many only used once (Greenberg & Pinsof, 1986b; Lambert & Hill, 1994; Wampold & Poulin, 1992). Researchers cannot agree upon what measures to use or even what processes to study (Lambert & Hill, 1994). Accumulating knowledge across different studies becomes extremely difficult (Greenberg & Pinsof, 1986b; Lambert & Hill, 1994). The research task is further exacerbated by the lack of commonly accepted or robust theories on the processes of change. Research has made little progress in building measurements and models of this complex domain.

2.1.2 Research methodologies

The dominant research approach is quantitative (Garfield & Bergin, 1994; Kazdin, 1994). However, the complexity of the domain creates many difficulties for a purely quantitative approach. Given that there are approximately 400 psychotherapies (Garfield & Bergin, 1994; Kazdin, 1994) and 300 syndromes (Kazdin, 1994), a comprehensive quantitative study of therapy times therapist times client times syndrome times intervention times setting would produce an impossible research design with hundreds of thousands of cells. And this is assuming that accurate and comprehensive taxonomies of therapists and clients are possible. Mahoney and Patterson (1992) also argue that due to the precise standards of measurements required by the quantitative approach, the range of questions that can be researched is narrowed. Using this approach, researchers tend to favour studying variables that are more easily quantifiable, at the expense of other variables, such as therapist and client characteristics that may be more important.

Statistical aggregation, a core technique within the quantitative approach, also has limitations. In client self-ratings of therapy effect, crucial information can be lost when multiple within-session ratings are aggregated across the session (Mallinckrodt, 1994) or when a portion of subjects find something helpful which is then overwhelmed by aggregation across all subjects (Mallinckrodt, 1994). Process and outcome measurements

are often developed by choosing measurements with highest consensual agreement among raters. However, the benefits of astute observation (Elliott & Shapiro, 1992) and important phenomena that are difficult to assess (Lambert & Hill, 1994) can be lost due to low reliability. Greenberg and Pinsof (1986a) state that the aggregate frequency approach has failed to reveal process-outcome links and suggest that because therapists do not operate in terms of frequencies, but perform acts in specific contexts and sequences, then the study of context, when a process occurs and how it changes over time, is more likely to be productive.

Because of the difficulties of studying and the complexity of the domain Mallinckrodt (1994) claims that "researchers despair of ever cataloguing enough procedural knowledge given the contextual complexity, to adequately inform a science of psychotherapy." (p. 186) and Lambert (1991) concludes that, "basing therapeutic interventions on a firm empirical foundation appears to be farther than ever beyond the reach of our abilities." (p. 2.)

As a response to the limitations of a purely quantitative approach and the complexity of the domain, use of different research methodologies is welcomed (Bergin & Garfield, 1994b; Greenberg & Pinsof, 1986b) and encouraged (Borgen, 1992; Rennie & Toukmanian, 1992). Such methodological diversity provides different insights (Kazdin, 1994) and a complimentary rather than competitive result is possible (Beutler & Clarkin, 1991; Borgen, 1992; Garfield & Bergin, 1994). The most significant trend is towards qualitative approaches (Bergin & Garfield, 1994b; Garfield & Bergin, 1994) with many new initiatives and advances occurring with a discovery-orientated approach (Borgen, 1992).

2.1.3 Level of description

The level of description that is most productive has troubled researchers (Greenberg, 1986). Levels have ranged from atomic units such as speech acts, to episodes or change events in which an intermediate therapeutic goal is achieved, up to sessions and a series of sessions. Greenberg (1986, 1992) and Mallinckrodt (1994) believe investigation at the episode level gives the best possibility of discovering how clients change. There is also a lot of effort going in to developing coding systems of fine-grain, atomic units (Greenberg & Pinsof, 1986b).

While there is merit in all levels of description, the key to enhancing understanding and avoiding meaningless reductionism or useless generality is the ability to relate different levels to each other. However, linking levels involves mixing units of analysis, which has proved to be problematic (Mallinckrodt, 1994). The search for connections between

session-level measures like outcome and client evaluations and finer grain measurements such as therapist techniques and moment-to-moment therapist-client interactions have been disappointing (Mallinckrodt, 1994; Stiles *et al.*, 1994). So far researchers have had difficulty reconstructing meaningful therapeutic processes and events from specific codes (Pinsof, 1986). Beutler and Clarkin (1991) and Mallinckrodt (1994) assert that the theories of change processes that would inform these connections are lacking.

The field has entered an atheoretical or transtheoretical period where the dominance of major theories is over and eclecticism has taken precedence (Bergin & Garfield, 1994b; Garfield & Bergin, 1994). Increasingly the focus is on what works with this type of case and not what is the nature of the human personality (Bergin & Garfield, 1994b). It is an intermediate time of little conceptual clarity (Bergin & Garfield, 1994b). Some are concerned that because eclecticism does not represent any truly systematic view, research on this approach may not be possible (Garfield & Bergin, 1994). However, others are more optimistic and see the beginnings of an integrative transtheoretical approach (Mahoney & Patterson, 1992).

2.1.4 Ecological validity

Ecological validity asks the questions: "Is research studying what is occurring in practice?", and, "Does research attend to what is actually occurring?" Much psychotherapy research suffers from poor ecological validity. There are a number of causes. One is a primary focus on specific techniques, despite relationship factors and therapist variables being potentially more influential (Lambert, 1991). Research can lack adequate descriptions of the type, manner, and quality of therapist behaviours and so fail to describe what is actually occurring (Beutler & Clarkin, 1991; Greenberg, 1986). Similarly, client characteristics are not always appreciated even though it is the client that implements change. For example, Martin (1992) indicates that similar interventions can produce different results because clients are active in experiencing therapist behaviour and so can respond differently to identical interventions.

There are also ecological validity problems in outcome assessment. Outcome is a fluid and continuous process occurring within and outside sessions, yet it is often assumed to be static and best measured at the end of treatment (Greenberg & Pinsof, 1986b). Outcome measurements are good at assessing symptom change, but poor at assessing interpersonal behaviour and changes in character (Beutler & Clarkin, 1991) and often fail to assess the individual's lifestyle and consequences for the social system (Garfield & Bergin, 1994). This is not to say assessing outcome is an easy matter, it is "at best difficult and at worst impossible." (Lambert, 1991, p. 1.)

Further ecological validity problems arise from:

- Extreme reductionism with the loss of meaning (Benjamin, Foster & Roberto, 1986; Gurman, 1987)
- An almost exclusive focus on verbal behaviour (Greenberg & Pinsof, 1986b)
- Heavy reliance on undergraduate psychology students as subjects (Mahoney & Patterson, 1992)
- Focus on psychiatric client groups (Greenberg & Pinsof, 1986b) with few personal growth client groups
- An over-representation of cognitive and behavioural therapies (Bergin & Garfield, 1994b) with few studies on experiential and group therapies (Beutler, Crago & Machado, 1991; Greenberg & Pinsof, 1986b).

Consequently, practitioners can feel that psychotherapeutic research does not capture the essential phenomena that they perceive and so they tend not to integrate research findings into their practice (Garfield & Bergin, 1994). However, some practitioners believe scientific method can not investigate the subtle complexities of practice (Benjamin *et al.*, 1986) and some have an antagonism towards the scientific approach as lacking humaneness. Movement and initiative is needed from both groups in order to close the researcher-practitioner gap.

Perhaps researchers forget that the ultimate aim of psychotherapy research is for therapeutic methods and therapists to be more effective in assisting clients. The fundamental commitment of researchers, like therapists, should be the well-being of the client/subject (Lambert, 1991). With this commitment in mind, researchers will attend to ecological validity and aim to play a leadership role by clarifying and optimising method and techniques. Researchers will also aim for research to be practical, achievable and useful; to attempt the impossible of satisfying scientific demands for vigour and clinical demands for responsiveness and immediacy (Alexander, Holtzworth-Munroe & Jameson, 1994).

2.1.5 Observation and description

Greenberg (1986) argues strongly that the most pressing need in psychotherapy research is good observation and description. He points out that despite huge efforts in psychotherapy research, progress has been slow and this is largely due to the failure to follow the usual and most productive developmental course of a scientific discipline. The first stage in a scientific discipline, to accurately observe and describe, has not been done. The emphasis has been upon verification before meaningful variables have been identified. Elliott and Shapiro (1992) have identified this problem too, stating: "Psychotherapy research has been dominated by premature quantitative, hypothesis

testing approaches at the expense of qualitative, discovery-orientated research." Robust experimental designs and sophisticated statistical analysis are wasted efforts if the variables studied are not meaningful.

Greenberg (1986) describes the observation and description he calls for as:

Recognition by an observer, in a relatively open inquiry, of patterns, consistencies, and covariations without previously rigorously specifying what the elements or variables will be, allows for discovery of important phenomena...the open discovery-oriented aspect which requires observation and interpretation requires astute observers of human performance who can differentiate relevant patterns.. (p. 731.)

Identification of important phenomena from such observation can do much to address the other needs and challenges already described. It will potentially enhance the ability to reduce complexity, guide what level of analysis to focus on, enhance the ability to build theories of change processes that can then connect different levels, and will assist ecological validity and practical research,

2.1.6 Group psychotherapy research

There are many types of group psychotherapies with 'bewildering' differences in technical style (Yalom, 1995). However, research on group psychotherapy has been a major area of neglect (Greenberg & Pinsof, 1986b) and this is reflected in its minimal profile in Beutler *et al.*'s (1991) summary of major research efforts. Nevertheless, there have been hundreds of studies, although they have been scattered across a diverse range of some 160 journals (Fuhriman & Burlingame, 1994b).

Like individual psychotherapy, complexity is a characteristic that makes the research task difficult; further compounded in group psychotherapy by group dynamic and group development factors (Fuhriman & Burlingame, 1994a). Yalom (1995) exposes another complexity by pointing out that the human encounter at the centre of therapy is deeply subjective and non-quantifiable. And Bednar and Kaul (1994) illustrate this by drawing a parallel between the concepts of group cohesion and dignity; they are both recognisable, but extremely difficult to describe or measure.

The effectiveness of group psychotherapy has been consistently demonstrated for diverse disorders and treatment methods (Bednar & Kaul, 1994; Fuhriman & Burlingame, 1994a). However, an unnecessarily large proportion of effort continues to be put into answering this question of effectiveness (Demby & Budman, 1991; Kanas, 1991). There is also some agreement on the general types of therapeutic factors in group

psychotherapy (Bednar & Kaul, 1994; Fuhriman & Burlingame, 1994a; Yalom, 1995) and the general phases of group development (Beck, Dugo, Eng & Lewis, 1986), however, research on the effect of these factors is only in the exploratory stage (Bednar & Kaul, 1994).

Criticisms of studies in group psychotherapy include:

- Over-dominance of positivistic methodologies (Frey, 1994)
- Under-emphasis of the group as an interactive ecosystem (Fuhriman & Burlingame, 1994a)
- Use of irrelevant elements from individual psychotherapy (Bednar & Kaul, 1994; Dies, 1985)
- Failure to integrate process and outcome measures (Dies, 1985)
- Inability to link across studies (Fuhriman & Burlingame, 1994a)
- Suspect ecological validity with the majority of research using student, zero-history laboratory/classroom groups (Frey, 1994)
- Almost exclusive focus on group decision making at the expense of group communication (Frey, 1994)
- Concepts and procedures that do not meet even the most modest criteria for conceptual or operational adequacy. Bednar and Kaul (1994) detail conceptual and operational inadequacy as involving a lack of information about: the style of group leadership, the frequency and intensity of critical group events, the composition of the group, the modal styles of group interactions, and group norms about confidentiality, outside social contacts between group members, and length of group meetings.

When summarising 50 years of reviews of group psychotherapy research, Burlingame, Kircher and Taylor (1994) found there was an "indisputable convergence of reviewer exhortations for careful observation and description" (p. 49). Bednar and Kaul (1994) argue that little is known about the most central group process variables because so little time is devoted to clarifying their essential nature and meaning with astute observation and careful description. So, like Greenberg (1986) for psychotherapy research, they strongly advise that the group disciplines shift their research emphasis to clarifying, describing, and measuring the central phenomena of the discipline from which theoretical understandings and good experimentation follows. An example of the value of such an approach is Yalom's (1995) influential contribution to group research which is based on careful observation and description of group process.

In summary, the challenges facing group psychotherapy research are similar to those facing individual psychotherapy. There is acknowledgement for more collaboration

between researcher and practitioner and an aim for both rigor and relevance (Fuhriman & Burlingame, 1994b). The trend is towards using multimethodological approaches (Dies, 1985; Rennie & Toukmanian, 1992) with a greater emphasis on qualitative investigations (Frey, 1994) especially, astute observation and careful description.

2.1.7 Conclusions

The challenges outlined above indicate some guidelines for future research into the processes of psychotherapy. Methods are needed to organise the complexity of psychotherapy processes without over-simplification or loss of meaningful concepts. There is a need for multiple levels of analysis and mechanisms enabling different levels to be related to each other. Ecological validity is a priority so the gap between the research and practice is minimised. Approaches need to be multimethodological with qualitative analysis playing an important role. And, above and before all else, astute observation and careful description is the key next step to action the above and provide a foundation for productive experimentation and theoretical development.

2.2 EXCOVE from a psychotherapy research perspective

EXCOVE is an approach to data collection developed in this project as one possible response to the challenges facing psychotherapy research outlined above. Essentially, EXCOVE is the capture on videotape of therapy sessions lead by highly experienced and regarded practitioners. The practitioners and other experts in the field then comment on the sessions through viewing the videotapes. EXCOVE is designed to maximise the quality of observations and descriptions identified as the essential next step for psychotherapy research. This section presents EXCOVE from the point of view of psychotherapy research by discussing its components: high expertise practitioners, video recording, and multiple expert commentary.

2.2.1 High expertise therapists

Studying therapy performed by high expertise practitioners has received little recognition or application in psychotherapy research as evidenced by its absence in major reviews of psychotherapy research (Bergin & Garfield, 1994a; Greenberg & Pinsof, 1986b) and research methodologies (Kazdin, 1980; Wampold & Poulin, 1992). Moreno (1994) claims there are no studies comparing outcomes for patients in group therapies with expert versus non-expert therapists.

Most research involves therapy conducted by researchers who have some clinical experience or by trained graduate students (Lietaer, 1992). Because of the experience, training, and skill involved in being a highly effective therapist, such an approach will

mostly be studying therapy practised to a poor or average proficiency. The core elements of therapist excellence and the greatest potentials of a therapy will not be discovered by studying the behaviour of therapists of limited experience or proficiency. For these reasons, Lambert (1991) urges researchers to study the behaviour and qualities of the unusually effective therapist as did Bloom (1975) more than twenty years ago. Bloom identified practitioners with a high level of competency and experience who have worked back and forth between their individual theory of practice and experience as possessing 'practice wisdom'. He believes that practice wisdom is an untapped source of knowledge and experience that is typically lost, or only communicated through workshops. He suggests it be accessed and formulated into concepts that can be tested against practice.

A key element of EXCOVE is the capture and study of the work of high expertise practitioners. Expertise is best evaluated by looking at performance, which in psychotherapy can be equated with effectiveness. However, as previously discussed there are no agreed upon criteria for measuring outcome. In the absence of being able to measure effectiveness, reputation or regard and experience are two criteria that can be applied. Studying what highly regarded and experienced practitioners do is likely to increase the possibility of getting to the core, optimal application of the particular therapy while minimising the risk of attending to behaviour and qualities that are of no great effectiveness. The same principle is applied in developing excellence in sports; first observe and then imitate those that are already masters.

2.2.2 Video recording

EXCOVE uses video recording as the optimal way to capture the behaviour and qualities of the expert practitioners, the other participants, and the therapeutic process.

Research has relied heavily on the recording of psychotherapy sessions (Greenberg & Pinsof, 1986a). However, despite the superiority of video over audio in its ability to capture nonverbal as well as verbal behaviour, video recording has been far less common than audio and is under-utilised as a powerful tool in research efforts. One reason for this has been the relative ease and lower cost of audio recording. More importantly, research has mostly focused on verbal dimensions of psychotherapy process and audio recording was considered sufficient. As a result, critical, nonverbal behaviour such as voice quality, facial expressions, and body posture, have been virtually unexplored (Greenberg, 1986). Video recording will be essential for investigating these nonverbal dimensions and also for facilitating careful observation and description.

Video replay has been used to assist therapists and clients to recall their experiences of therapy sessions (Elliott, 1986; Kagan, 1975). The major advantage is that video-assisted recall provides an ability for participants to provide information on their perceptions, intentions and reactions without having to intrude into the therapy session (Elliott, 1986; Elliot & Shapiro, 1992).

The validity of the methodology is relatively untested. A crucial question is: Are responses obtained during videotape-assisted reviews accurate representations of actual experiences during therapy? Hill *et al.* (1994) reasoned that during therapy participants are actively participating and during reviews they are observing and evaluating and that these different perspectives may result in differences. Also learning over time can create differing perceptions, for example, a confrontation may be viewed initially as negative and later in the light of new learnings as positive. However, in response to these questions, Hill *et al.* (1994) found that client and therapist helpfulness ratings, therapist intentions, and client reactions were highly consistent between in-sessions evaluations and reviews. Katz and Resnikoff (1977) also found moderate correlations between live ratings of comfort or discomfort and ratings recalled during videotape stimulation. Such findings offer support for the validity of videotaped-assisted reviews as a means of assessing in-session experiences. However, Hill recommended that reviews be done within two weeks and Elliot (1986) suggests 48 hours. Hill also found that videotape-reviews appear to have some dampening effects on client and therapist mood and on therapist evaluations of session quality.

There is little work on what makes video recall work (Hill *et al.*, 1994). However, Elliott (1986) proposes the mechanisms as: cue, recency (48 hours), slow down (by stopping), and reliving. Hill *et al.*'s. (1994) study also indicates that videotape recall can enable participants to re-experience sessions. These findings plus the sensory rich nature of video indicate that video will assist reviewers aiming to provide accurate observations and descriptions. Video data can also be used to assist a variety of validation tasks: to ground concepts and constructs in data, to clarify what is being described, and to assist researchers to refer to the same thing when they use a concept and so avoid talking past each other.

2.2.3 Multiple expert commentaries

EXCOVE uses a team of highly experienced practitioners and therapist trainers within the therapy modality being studied to observe and describe the psychotherapeutic processes captured on videotape. Both the therapist leading the videotaped session and non-participating experts comment on the session. Using this approach, the

commentators are encouraged to utilise their experience and knowledge of the domain to provide rich and accurate descriptions of the processes they observe.

The use of practitioners to describe therapeutic processes is strongly advocated because practitioners have constructed vast stores of experiential knowledge that are integrated with theoretical and personal knowledge (Martin, 1992). In contrast, researchers' models may be more simple (Beutler & Clarkin, 1991) and result in important information being lost during observation and description, especially when the observers are students (Rennie, 1992).

There have been varying degrees of structure provided in framing and guiding the review of videotaped psychotherapy sessions. The majority of studies structure review by providing a list of responses and/or specifying the unit of review, which may be a certain time period or an event. While this serves certain purposes, sparse and more open guidelines on how and what to describe leads to spontaneous data richer in meaning (Rennie, 1992) and does not inhibit the reviewers formulating descriptions in their own words (Lietaer, 1992). In an effort to be non-directive, Hill and O'Grady (1985) developed a list for reviewers that did not have theoretical bases, but Wampold and Poulin (1992) argue this was still directive. Horvath, Marx and Kamann (1990) attempted to make the unit of review flexible by having the video stopped whenever the therapist's intention changed, but still found that information was lost. It appears that letting the reviewer choose when to stop the video and how and what to describe would assist reviewers to fully communicate their knowledge. EXCOVE uses this approach to promote the quality and richness of the commentary. Section 4.2.1 discusses further the advantages of 'open' questioning.

EXCOVE uses experienced and highly regarded commentators to increase the likelihood of high quality and rich commentary. The common sense reasoning is that the greater the experience and the higher the regard, the more likely the commentary will be rich and useful. However, this is not necessarily the case. The two types of commentary, self commentary by the therapist reviewing themselves and commentary by a non-participant, both have limitations. For self commentary, studies in expertise (Gordon, 1992) have shown that an expert's knowledge is often tacit and the reasoning they give for their actions can be inaccurate (see section 4.1.3 for a discussion). Experts have varying degrees of understanding and ability to verbalise their own processes. On the other hand, non-participatory commentary will be restricted in what it can identify. For example, Wampold and Poulin (1992) claim that because a counsellor's rationale is covert, therapist intentions must be measured by means other than observation. So, on their own, both types of commentary have potential limitations. However, using both

types of commentary together should help minimise these limitations. Obtaining accurate and useful commentary is also likely to be enhanced by increasing the number of commentaries and using trainers. Multiple commentaries allow consensual checking by the researchers and hopefully trainers will have made previous efforts to conceptualise and communicate their knowledge thereby greatly increasing their ability to give concise and accurate descriptions (Reason, 1994).

2.3 Conclusions

EXCOVE was developed as a response to the challenges facing psychotherapy research. EXCOVE aims to maximise the quality, usefulness, and accuracy of commentary by utilising and integrating high expertise, video capture, and multiple expert commentators. To identify, access, and involve such experts in the research, close contact with the field was necessary by the researcher.

A computer system, FERAL, was specifically designed to manage the data collected using EXCOVE and provide analysis facilities. A variety of general and special purpose computer software are now being used in psychotherapy research². However, their use is usually not acknowledged in studies (for example see Toukmanian and Rennie, 1992) which makes it difficult to know how much they are being used and in what way. The family of computer systems FERAL belongs to, Computer-Assisted Qualitative Data Analysis Software (CAQDAS), is discussed in chapter five.

Psychodrama, an experiential, action-orientated, group psychotherapy was chosen as the psychotherapy of focus. Psychodrama is a popular psychotherapy in Australasia that has had little exposure in the research community. The choice of psychodrama was therefore seen as an opportunity to bring the psychodrama and research communities into closer contact with each other. Psychodrama was also chosen because the author was already familiar with the field. Chapter three introduces psychodrama and discusses aspects of psychodrama relevant to this project.

² For example see the research and analysis tools listed at the Centre for Psychology, University of York website <http://www.york.ac.uk/inst/ctipsych/web/CTI/DirTxt/contents.html>.

Chapter Three

Psychodrama

This chapter focuses on psychodrama, the specific psychotherapy chosen for investigation. The first half of this chapter presents background information on the origin, definition, current practice, and state of research and theory in psychodrama. The second half of this chapter describes the accumulated theoretical knowledge on specific areas in psychodrama which were analysed using FERAL and the data collected using EXCOVE.

3.1 Psychodrama background

3.1.1 Origin of psychodrama

Inspired by the creative play acting of children, the ancient Greek theatre, and a desire to have a practical theology, J. L. Moreno formulated psychodrama. Psychodrama is the application of the methods and techniques of drama for therapeutic purposes (Moreno, 1994). Moreno, with considerable input from Zerka Moreno (Fox, 1987), developed the psychodrama method from the 1920s to the 1960s (Kipper, 1992). However, the use of dramatic methods by a group of people for the purpose of creating meaning and healing is not new. It shares similarities and functions with Greek theatre and the playing of significant events in rituals and ceremonies, especially the non-scripted, audience participation form of earlier cultures (Barbour, 1995; Fox, 1987; Moreno, 1974).

3.1.2 A definition of psychodrama

Psychodrama is variously categorised as humanistic (Blatner & Blatner, 1988; Kellermann, 1992; Rowan, 1992), existential (Goldman & Morrison, 1984; Kellermann, 1992; Yalom, 1995), and experiential (Greenberg, Elliott & Lietaer, 1994). It is predominantly used as a group psychotherapy having been conceived that way and not branching out of a theory of individual therapy like most of the leading contemporary group psychotherapies (Kipper, 1992). However, it is also used dyadically³ (Fowler, 1992; Stein & Callahan, 1982).

³ One therapist and one client.

The term 'psychodrama' has two meanings: a generic umbrella term to embrace the related action methods of psychodrama, sociodrama, sociometry, and role training (Board of Examiners, 1989); and a term for the specific method of psychodrama itself. In this project, psychodrama refers to the specific method of psychodrama and to the whole approach, not just parts of the method or the method integrated with other therapeutic methods.

Confusion has occurred because definitions of psychodrama in the literature have differed and even Moreno's definitions have been considered inconsistent and contradictory (Kellermann, 1992). In this thesis a definition of psychodrama based on the common practise of the method is put forward to introduce core elements and terms and some concepts which will be investigated later in the project. Such a procedural or operational definition is very similar to definitions given by Blatner (1995) and Kellermann (1992) and is essential for investigating psychodrama so that there is some clarity about terminology to prevent researchers talking at cross purposes (D'Amato & Dean, 1988; Kellermann, 1992). Following this definition, an example of a psychodrama is provided.

Psychodrama is a group psychotherapy that uses the mechanisms and techniques of drama for therapeutic and aesthetic purposes. The group leader (director) is responsible for leading the group, producing the drama, and being a therapeutic guide. Typically, a psychodrama session consists of warm-up, enactment, and sharing phases. During the warm-up phase a group member is chosen to be a protagonist for the enactment that will occur. Optimally the protagonist reflects the concerns and obtains the interest of the group. The enactment occurs in the here and now and may be of anything in the protagonist's experience or consciousness including unresolved situations from the past, future situations, fantasies or expressions of mental states. The enactment will either follow a theme or a storyline and usually consists of a series of scenes or portrayals.

In the enactment phase, the protagonist projects (concretises) their inner world on to the stage area by choosing objects or group members (auxiliaries) to be aspects of their personality or significant people, animals, or objects in their life. Each concretisation is called a role. Typically, the protagonist will first portray or be the role and then the director will get the protagonist to switch roles (role reversal) with an already existing role played by an auxiliary. The auxiliary, in the new role, will enact back (mirror) what the protagonist did and said and the protagonist will respond from the point of view of the role they are now in. The protagonist will therefore experience each role in an immediate way and from the point of view of at least one other role. The approach can be called systemic because multiple interacting roles and role relationships are explored.

The approach can be called holistic in that all aspects of behaviour - thought, feeling, and action - can be expressed. The director may encourage the protagonist to accentuate (maximise) a thought, feeling, or action to facilitate this expression and experience.

These activities of concretisation, maximisation, and role reversal proceed under the direction of the director. The director is therefore responsible for producing the protagonist's world on to the therapeutic stage and assisting the protagonist to experience and investigate their world. The director is also a therapeutic guide initiating therapeutic interventions at appropriate times. There are a variety of possible aims for a psychodrama, with an encompassing aim, from a theoretical point of view, being stimulation of a protagonist's 'spontaneity' which could be described as a fresh creative response that integrates all their resources for some satisfactory result.

The example of a psychodrama that follows is taken from Williams (1989).

Portia, a flamboyant, attractive, and overweight woman of 30, complains in the group that 'against all reason' she has given up the healthy life style that she had begun in the previous year. Now, she says, she uses cigarettes in the morning to 'kick-start the lungs'. She claims she drinks too much, eats too much junk food, and smokes too much dope. Somewhere or other, she 'went off the rails', as she puts it.

Don, the director, asks Portia to construct some 'rails'. Portia chooses four people from the group, who lie on the floor in two parallel lines. Portia then stands between the lines and Don asks her when it was that she went off the rails. After some consideration, Portia replies that it was in August. Don asks her what was happening in August. At first Portia cannot remember. Then she recalls that a friend, Lucy, had applied for a job in her organisation, and had been very angry when she missed out.

Don tells Portia to 'go off the rails'. She falls over to one side, and hides under a chair; objects representing food, drink, cigarettes, and drugs are supplied to her. She consumes them all, becoming distressed. The more distressed she is, the more rapidly and desperately she smokes, eats, and drinks. Don asks her whether she has been in this state before. Portia replies that it reminds her of a time when she was aged about three, crouching behind the bathroom door eating bread while her parents were arguing in the kitchen.

The kitchen and bathroom scenes are established, and Portia chooses people from the group to play the roles of father and mother. Portia's parents are having a furious, hysterical argument. Her mother accuses her father of being 'no good' and

repeatedly screams at him, 'I don't want to live any more'. Her father rages around impotently and says that he can't understand anything that is happening, that he is totally confused. Portia crouches behind the bathroom door stuffing bread into her mouth. She says she feels 'bad'. She begins to cry uncontrollably.

Her helplessness is apparent. In an aside to Don, she says that she is 'stuck'. Don asks her whether anyone could help her. She replies, 'There is no-one.' He asks her to choose someone from the group to act as herself viewing this scene. Portia steps outside the drama and witnesses Portia as a little girl in this stressful and overwhelming context. Soon this new role as witness is too passive for her. She becomes an indignant protector of the little girl, calls out to the parents to stop. She insists that they pay attention to their daughter and stop hurting each other.

Don asks Portia to become in turn her mother and her father. In these roles, they are first outraged at this new, intrusive person's interference, and then they resume their fighting, ignoring any interruption. Back in role as herself as three years old, and with the help and loving encouragement of her protector, Portia grapples with them physically, and after a long struggle and much shouting, rolls them both out the door. She is triumphant, but is also very sad. Don has the parents re-enter the scene, and Portia, weeping, tells her mother how she wished the latter had been more 'present' to her, and how her mother's depression and 'terrible marriage' got in the way of their ever being close.

Don then returns Portia to the first scene with her friend, Lucy, and re-establishes the four group members as 'rails'. Portia stands between the rails once more. Lucy fumes at her for causing her to miss out on the job. At first Portia begins to wheedle and explain, but after encouragement from her 'indignant protector', who is still watching over her. she exclaims: 'I'm not guilty, I'm not guilty. I might have managed things a little better, but I'm not guilty.' With authority and grace, she goes over to each of her parents, and says, 'I'm not guilty. I didn't cause you, or your hatred, or your messes, I'm not guilty.'

The drama ends with her standing between the rails once more as she embraces her 'witness' who turned into her protector. They promise not to be parted, and declare their mutual need and affection for each other. She pauses for a moment, still connected to the tissue of the past, but free of it. She then thanks the group members who have played various roles, and sits down with Don.

For the next 20 minutes or so, the group tell of the memories, emotions, and thoughts they had about their own lives while Portia was enacting her drama. The entire session, including the 'sharing' at the end, lasts about 90 minutes. (pp. 1-2).

3.1.3 The practice of psychodrama

Psychodrama is practised around the world (D'Amato & Dean, 1988) in North America (Goldman & Morrison, 1984), South America (Carlson-Sabelli, Sabelli & Hale, 1994), Britain (Karp, 1988), Europe (Holmes, Karp & Watson, 1994), Israel (Hare, 1988), Australia and New Zealand (Clayton, 1988) and to some extent in Asia (Mashino, 1988; Parry, 1988). Each area tends to have its own style. This project focuses on psychodrama as practised in Australia and New Zealand (ANZ). Dr. Max Clayton, arguably the most influential person in ANZ in psychodrama⁴, stresses role theory, group process, dramatic production, systemic thinking, and experiential learning (Clayton, 1988, 1989, 1991, 1992, 1993, 1994).

The eclectic nature of most practising therapists and counsellors (Hermansson, 1992) and the lack of any survey data makes it difficult to ascertain how widespread the use of psychodrama is in ANZ. However, there are ten psychodrama training institutes, close to one hundred certified psychodramatists, and several hundred advanced trainees (M. Clayton, personal communication, August 7, 1997). This indicates psychodrama is a popular and widespread psychotherapy. The figures are slightly up on those in 1988 (Clayton, 1988) which indicates there is a continuing, but slow growth in the practice of psychodrama.

3.1.4 Psychodrama research

There have been few empirical evaluations of psychodrama (D'Amato & Dean, 1988; Kane, 1992) and little systematic research (Kellermann, 1992). Reviews of outcome indicate good results when the method is employed by trained professionals aware of the method's limitations (Schramski & Feldman, 1984) and a valid alternative to other therapeutic approaches especially in promoting change in adjustment, antisocial, and related disorders (Kellermann, 1987). In Schramski and Feldman's (1984) review of outcome studies of action methods (includes psychodrama, sociometry, and role playing) 39 out of the 200 studies applied directly to psychodrama and the rest to related action methods. Half the studies were experimental with differing subject groups in terms of age, ethnicity, and profession. Therapist experience differed as did the outcome measures used. Kellermann's (1987) review summarised 23 outcome studies

⁴ Dr. Clayton is the primary trainer of a number of leading psychodramatists, for example Dr. A Williams (Williams, 1989) and R. Brodie. He has written extensively (Clayton, 1988, 1989, 1991, 1992, 1993, 1994) and been a trainer for 26 years.

between 1952 and 1985 that where all classical psychodrama and adhered to a rigorous research design. Subjects included very disturbed, normal and behaviourally disturbed client groups and outcome measures varied.

The lack of empirical study is likely due to a number of factors, such as, the complex nature of the domain, the difficulty of quantifying some of the phenomena, and the lack of coherent theoretical guidelines. In addition, the action-orientated, experiential nature of the method has tended to attract people who have a preference for action before research. Many practitioners claim that the method itself clearly demonstrates its effectiveness when practised (Greenberg, 1974; Kellermann, 1987; Starr, 1977) and that honest client reporting and careful observation by the therapist are sufficient proof of effectiveness (Kane, 1992).

Most accounts of the effectiveness of psychodrama have been quasi-naturalistic or anecdotal. Kellermann (1992) claims that at worst these accounts describe psychodrama as boring and a waste of time with almost no negative side effects. However, Kane (1992) lists dangers in the application of the method involving: inadequately trained or skilled psychodramatists, manipulative psychodramatists, misuse of techniques, insincerity in protagonist and auxiliaries, drama or performance centred, and failure to integrate and complete closure. Responses to the author's own personal inquiries have also revealed similar complaints, including: too directive and manipulative, over emotional, encouraging shallow show-off behaviour, and guru-type leaders that produce a 'magic' method and compliant and rescued followers.

Psychodrama literature, including a dedicated international journal, *The Journal of Group Psychotherapy, Psychodrama, and Sociometry*, contain mostly descriptive rather than empirical studies. The theses that have been written to complete the requirements for certification as a psychodrama practitioner in ANZ since 1974 are mostly commentaries on the psychodramatist's field of expertise and experience.

Given that there has been little systematic research, an important question is - What is the most productive next step to take in research? While there is some support for an increase in the number of quantitative studies on psychodrama (Kane, 1992), D'Amato and Dean (1988) point out the limitations of such studies. Like outcome research in other psychotherapies, there is enough evidence to show that treatment is effective and there is no need to repeat outcome studies on their own. A quantitative approach without careful targeting of important phenomena is likewise unproductive (for example see Martin and Labott, 1991). So Kellermann (1992) calls for systematic and multi-

methodological approaches. Astute observation and careful description would be a productive first step.

As previously introduced, EXCOVE is an approach to data collection designed to maximise the quality of observation and description. FERAL is a computer system developed to manage the data collected using EXCOVE and to provide a range of analysis tools. The second half of this chapter summaries psychodrama theory and describes in some detail existing theory on different aspects of psychodrama that were analysed using FERAL and the data collected using EXCOVE. These analyses are reported in detail in chapter eight.

3.1.5 Psychodrama theory

Goldman and Morrison (1984) believe psychodrama is not incomprehensible or mystical and Jonathan Moreno claims that psychodrama contains a rich and unique theoretical apparatus and is not just a bag of loosely associated therapeutic tricks (stated in his foreword to *Focus on Psychodrama*, Kellermann, 1992), However, psychodrama does not have a coherent, concise, or comprehensive theory (Kellermann, 1992). Most psychodramatists still refer to the incoherent and incomplete formations of J. L. Moreno (Kellermann, 1992). Moreno was more a visionary and poet than a systematic theoretician (Blatner, 1988) with his writing tending to be stream of consciousness infused with valuable insights and ideas.

Since Moreno, psychodrama theory has remained a collection of unintegrated ideas with little development or refinement (Kellermann, 1992; Williams, 1989). Each practitioner brings their own background and ideas to their application of psychodrama and different varieties of psychodrama result (Goldman & Morrison, 1984). Important books from Greenberg's (1974) *Psychodrama: Theory and Therapy* to *Psychodrama Since Moreno* demonstrate a huge variety and richness of ideas but lack a unifying theory. Each important writer has a differing combination of core principles and underlying concepts which include; role theory, sociometry, systems theory, spontaneity and creativity, encounter, and role playing or enactment. Of these, spontaneity receives the highest agreement on its importance as an underlying principle (Blatner, 1988). There is, however, no clear definition or description of what spontaneity means in psychodrama. And there are therefore no guidelines for practise generated from this underlying principle.

It is useful to compare the theoretical status of psychodrama with that of Gestalt; a related existential and experiential psychotherapy. Gestalt has a well agreed upon set of underlying principles (De-Riet, Korb, & Gorrell, 1980; Passions, 1975; Polster &

Polster, 1974; Simkin, 1979) which provide clear guidelines for practise. They also give Gestalt a clear identity. In comparison, psychodrama, has a proliferation of theoretical underpinnings with no clear consensual winner to which adherents acclaim - this is psychodrama.

There is, however, universal agreement on the basic elements of psychodrama. They are: director; protagonist; auxiliary; audience; and stage (Blatner, 1988; Clayton, 1989, 1991; Goldman & Morrison, 1984; Holmes, 1991; Kellermann, 1992; Kipper, 1992; Moreno, 1974, 1977; Williams, 1989). This agreement is due to the self-evident nature of the elements.

Estimates of the number of psychodrama techniques range from 200 to 300 (Moreno, 1974). Each writer has a different list of techniques even when identifying core or important techniques. However, *role reversal*, *doubling*, *mirroring*, and *soliloquy* are almost always identified as important techniques. Two of these, *doubling* and *mirroring*, were chosen for analysis.

3.2 Psychodrama topics investigated

Five topics or areas in psychodrama were investigated using FERAL and the data collected using EXCOVE (described in chapter eight). The analyses had the twin aims of adding to knowledge about psychodrama and investigating the usefulness of EXCOVE and FERAL. The analysis approach taken for each topic were introduced in section 1.2.5 and summarised in table 1.1. Three topics, *phases*, *doubling*, and *mirroring*, had existing theory in the literature and resulted in theory confirmation type analyses. This section summarises the relevant theoretical and conceptual knowledge for them. The remaining two topics of *unpredictability* and *action* were essentially data driven and resulted in theory exploration. *Unpredictability* is introduced here as relating to the author's description of spontaneity. However, the investigation of *action* was entirely driven by the collected data collected and so is not described here.

3.2.1 Psychodrama phases

At a macro-level, a psychodrama has been divided up by most commentators into three phases; warm-up, action, and sharing (Blatner, 1988; Board of Examiners, 1989; Goldman & Morrison, 1984; Holmes, 1991; Kipper, 1992; Moreno, 1969, 1977). Warm-up is also referred to as group warm-up and beginning, action is also called enactment, and sharing is also referred to as closure and integration. Agreement on these three phases is understandable given the easy division of a typical psychodrama around the beginning and end of action (Kipper, 1992). Analyses in this study will attempt to

identify these three phases using the video and commentary data and will explore whether other finer grain divisions are also used.

In the literature, finer grained phases are rarely described and are inconsistently used when they are proposed. Table 3.1 provides a summary of these descriptions.

writer	warm-up	action					sharing
Kellermann	warm-up	action	working thru		closure	sharing	
Clayton	interview or warm-up	production	investigation		therapeutic	sharing or integration	
Kipper	warm-up	portrayal	exploration		rehearsal	sharing & analysis	
		typically 5 key scenes & 3 connecting scenes					
Goldman & Morrison		present	recent present	recent past	deeper past	early childhood	

Table 3.1 Phases according to different writers

Kellermann (1992) identifies warm-up, action, working through, closure, and sharing phases. He describes the action phase as when the protagonist is assisted to achieve catharsis, gain action-insight and act-fulfilment and has beginning, middle, and end segments and contains scene setting, putting auxiliaries into role, and enactment. Working through (which is also called integration, winding down, and re-learning) is described as the integration of feelings with cognitive insight and the ordering of internal chaos. However, he describes working through as both a process within the action phase and as a phase on its own. He describes the sharing phase as preparation for the return to the outer world of day-to-day realities. He breaks down the pre-action phase into not only warm-up (as described earlier), but also selecting the protagonist, treatment contract, and interviewing. There is then a lack of clarity and consistency on what constitutes the warm-up and action phases and whether working through is a phase on its own or a process within the action phase.

Clayton (1991) identifies interview, action and sharing phases. He describes the functions of the interview phase as development of a working relationship between director and protagonist, identification of a purpose, and assessment of various items to guide future director decisions and actions. However, Clayton (1994) also describes the warm-up phase as pre-action without mentioning an interview phase. He describes the action phase as including production, investigative, and therapeutic phases. However, it is unclear whether these phases have a discrete beginning and end, tend to occur at specific places in a drama, or whether they are better described as processes that might occur more than once and overlap.

Kipper (1992) identifies three connected segments within the action phase: role playing portrayal of present difficulty, explorations and clarifications with a number of scenes to investigate the difficulty, rehearsing and searching for alternatives and enactment of solutions for the conflicts. These segments correlate fairly well with Clayton's divisions. He says typically there are five key scenes and three connecting scenes with the shift between different scenes producing therapeutic effect. Goldman & Morrison (1984) have a similar breakdown of the action phase into a number of scenes with a prototype session consisting of the following scenes: present, recent present, recent past, deeper past, and early childhood. In both these cases, the delineation is limited because no two psychodrama sessions are alike (Goldman & Morrison, 1984).

3.2.2 Doubling

Doubling is one of the four techniques that are almost always identified as important to psychodrama. Table 3.2 summarises the information in the literature relevant to this study's analyses of *doubling*. The table does not give any indication of the degree of consensus the different aspects receive or their relative importance. Each category is discussed in turn.

Kipper (1986) sums up the essence of the double as the *psychological twin* of the protagonist; the double attempts to establish a "feeling of closeness, as close a psychological identity as possible, with the protagonist" (p. 152). Moreno's (1953) summary is similar in that he states that the double and protagonist act as though they are the one and same person; they create a united front (Moreno, 1987).

There is general agreement in the literature on the mechanics of doubling. An auxiliary stands or sits close beside and slightly behind the protagonist and replicates the physical posture and non-verbal communications of the protagonist (Clayton, 1989; Holmes, 1991; Kellermann, 1994; Kipper, 1986; Moreno, 1969, 1974, 1987; Starr, 1977).

Category	The double:-
Essence	<ul style="list-style-type: none"> • Has a close psychological identity with the protagonist.
Mechanics	<ul style="list-style-type: none"> • Is beside and slightly behind the protagonist • Replicates the physical and non-verbal actions of the protagonist.
Process	<ol style="list-style-type: none"> 1. Imitates the protagonist's body posture and movement 2. Tunes in with the protagonist's mental and emotional state and checks it out with the protagonist 3. Expands and elaborates, especially difficulties. Encourages the protagonist to openly express thoughts and feelings.
Purposes and outcomes	<ul style="list-style-type: none"> • Serves as the protagonist's inner voice and consciousness • Assists the protagonist in assessment of his or her problems • Uncovers concealed thoughts and concerns • Supports in presenting the protagonist's position and feelings • Assists the protagonist to express themselves fully and openly • Assists the therapist by providing information on the protagonist and acting as a therapeutic agent.
Indications or the context used in	<ul style="list-style-type: none"> • When the protagonist is in a conflict of experiencing undue stress • When the protagonist feels alone, sad, depressed, or hurt • When the protagonist seems inhibited or intimidated by the encounter he or she experiences with the other auxiliary • When the level of interaction between the protagonist and the other auxiliary is superficial and needs to be either deepened or directed to the core issue(s) • When the protagonist is having great difficulty accepting herself.
Miscellaneous	<ul style="list-style-type: none"> • Doubling is a developmental need and stage

Table 3.2 Summary of literature on doubling

Kipper (1986) describes doubling as a process involving a series of steps, namely;

1. The double imitates the body postures of the protagonist in order to become involved and get cues to the psychological state of the protagonist (also mentioned by Holmes, 1991 and Kellermann, 1992).
2. The double tunes in with the mental and emotional state of the protagonist, that is the double establishes an empathetic bond (Holmes, 1991; Moreno, 1987). The double needs to check out how congruent their perceptions are with the protagonist by verbalising them and getting feedback from the protagonist. Expression by the double can be affirmed or clarified (Holmes, 1991) with the degree of non-acceptance and conflict important (Moreno, 1953). This process of confirmation assists to build the bond between protagonist and double.
3. The double can expand and elaborate on the protagonist's experience by reading between the lines, exposing hidden concerns, thoughts, and feelings; focusing on fears, inhibitions, and dilemmas; and taking chances to express hypotheses. The double can also encourage the protagonist to express themselves openly.

Various purposes for a double have been proposed, such as:

- Serves as the protagonist's inner voice and consciousness (Kipper, 1986)
- Assists the protagonist in assessment of his or her problems (Clayton, 1989; Moreno, 1969, 1974)
- Uncovers concealed thoughts and concerns (Holmes, 1991; Kipper, 1986; Kellermann, 1992)
- Supports in presenting the protagonist's position and feelings (Holmes, 1991; Kipper, 1986; Moreno, 1987) and assists the protagonist to express these fully and openly (Kipper, 1986)
- Kipper (1986) also states that the double has a duty to assist the therapist in understanding the protagonist by providing clues and explanations regarding the protagonist's thoughts and feelings, and to act as an intermediate agent through which the therapist can implement desirable changes in the protagonist's behaviour.

Kipper (1986) gives four situations when the use of doubling would be beneficial. These are given as the first four items in the “indications or the context used in” category of table 3.2. In addition, Clayton (1993) advises that if the enactment indicates that the protagonist is having great difficulty accepting him or herself then the use of a double would be good.

Some also view doubling as a developmental need and stage. Kipper (1986) argues that when the young child moves independently into space, he or she needs self-affirmation which can be transmitted by the caregiver through affirmative doubling.

In talking of the function of the director to perceive the protagonist Kellermann (1992) says that the director becomes a 'double', which he identifies as the same as 'pacing' in the psychotherapy approach called Neuro-Linguistic Programming. He describes this as the director attempting to match the verbal and nonverbal behaviours of the protagonist by giving special attention to eye-movements, breathing, body posture, and changes in facial muscles.

3.2.3 Mirroring

As previously mentioned, *mirroring* is one of the four techniques that is almost always identified as important. Table 3.3 summarises the literature on *mirroring* without giving any indication of the degree of consensus the different aspects receive or their relative importance.

Category	Details
Mechanics	<ol style="list-style-type: none"> 1. Replacement of the protagonist by an auxiliary 2. The protagonist moves to outside the action space 3. The protagonist observes the auxiliary play the role of the protagonist in an enactment usually a replay of what has just occurred.
Purposes and outcomes	<p>The protagonist can:</p> <ul style="list-style-type: none"> • Observe self from outside • Have self-awareness of interaction with others • See how other people experience him or her • Be provoked into action on observing self portrayed.
Indications	<p>When a protagonist:</p> <ul style="list-style-type: none"> • Is withdrawn and not involved in interacting with the auxiliaries • Lacks insight into his or her behaviour and their impact • Is unable to interact with others appropriately.

Table 3.3 Summary of literature on mirroring

The majority of writers agree on the mechanics of *mirroring* as the replacement of the protagonist by another member of the group (auxiliary or mirror), the protagonist standing or sitting outside the action area, and the protagonist watching the auxiliary portraying the protagonist's verbal and non-verbal behaviour (Blatner & Blatner, 1988; Clayton, 1989; Goldman & Morrison, 1984; Holmes, 1991; Kellermann, 1992; Kipper, 1986; Moreno, 1969, 1974; Starr, 1977; Williams, 1989). Some describe the portrayal by the auxiliary as replay of action that has just occurred (Blatner & Blatner, 1988; Goldman & Morrison, 1984; Kellermann, 1992). Other writers view the portrayal as new with the auxiliary assuming the identity of the protagonist and playing the role as they perceive the protagonist would (Clayton, 1989; Holmes, 1991; Moreno, 1969, 1974; Starr, 1977; Williams, 1989).

Mirroring is thought to provide the protagonist with the opportunity observe the self from outside (Kellermann, 1992; Starr, 1977) potentially provoking and shocking the protagonist into action (Moreno, 1953); increase self awareness (Clayton, 1993) and a more objective awareness in interactions with others (Holmes, 1991); and see how other people experience him or her (Clayton, 1989, Moreno, 1969, 1974; Williams, 1989).

Indications for the use of mirroring are given by Kipper (1986) as when a protagonist:

- Is withdrawn and not involved in interacting with the auxiliaries
- Lacks insight into his or her behaviour and their impact
- Is unable to interact with others appropriately.

The term *mirroring* has also been used by Clayton (1992) and Goldman and Morrison, (1984) to refer to the situation after an auxiliary has role reversed with the protagonist and the auxiliary repeats the behaviour the protagonist has just portrayed. For example,

the protagonist performs some behaviour in role A probably directed at role B who is played by an auxiliary. The protagonist and auxiliary then role reverse so that the protagonist is in role B and the auxiliary is in role A. In role A, the auxiliary repeats the behaviour the protagonist displayed in role A prior to role reversal. The aim is for the auxiliary to repeat what the protagonist has said and done, expressing the same meaning, feeling, tone, and physical expressions (Clayton, 1992). The difference from the previously mentioned *mirroring* is that the protagonist stays in the action space (in the role the auxiliary was in before the role reversal) and the protagonist responds from the perspective of the role they are now in and not in the role of outside observer. Clayton (1992) claims that accurate portrayal of another person after adequate role reversal is a powerful therapeutic intervention.

The video and commentary data will be investigated to ascertain the 'goodness of fit' for these descriptions. The analyses should also indicate if there are two types of *mirroring* and assist refinement of the descriptions if that is necessary.

3.2.4 Spontaneity

As previously mentioned spontaneity is widely accepted as an essential principle (Clayton, 1992; Fox, 1994; Goldman & Morrison, 1984; Holmes & Karp, 1991; Kellermann, 1992; Williams, 1989). Yet there is no clear, consistent or comprehensive definition or description of spontaneity, even within Moreno's (1953, 1959, 1969, 1977) extensive writings.

The author has attempted to remedy this by developing a description of spontaneity building on ideas presented in Carter (1994). The author hopes that such a description will assist the formulation of a clear and coherent conceptual framework for psychodrama that will also be useful as guidelines for practice. According to the author's description, a person in a spontaneous state has four characteristics, namely: vitality, congruence, readiness, and attunement.

This study will focus on the idea of *unpredictability* which relates to the characteristic of readiness. Readiness is an ability for an unpremeditated and fresh response to the emerging moment. This concept assumes that we exist in the here and now moment and that the universe is constantly changing. The emerging moment is therefore different from any moment that has come before and is unable to be predicted with any surety. There is therefore an element of unpredictability. This study will do an initial explorative investigation of the commentary data to discover if, and how, the idea of *unpredictability* is used by expert commentators.

Chapter Four

Knowledge Elicitation (KE) and EXCOVE

EXCOVE is a knowledge elicitation (KE) approach developed as a response to the needs of psychotherapy research and from a deficiency of suitable KE methodologies. This chapter frames EXCOVE from the perspective of information systems by describing KE, its scope, and the nature of expertise and the implications for KE. The components of EXCOVE - expert commentary, multiple experts, and video recordings - are then presented.

4.1 Knowledge elicitation

4.1.1 What is KE

KE is the gathering of information from sources of expertise and is the initial phase of knowledge acquisition (KA) (Brule & Blount, 1989; Cooke, 1994; Cooke & McDonald, 1988; Pidgeon, Turner & Blockley, 1991; Regoczei, 1992; Wood & Ford, 1993). Early on in the field when the end aim of the undertaking was computerisation of the knowledge, KA was conceived as consisting of KE and knowledge representation which is formulation of the data collected during KE for transference to an knowledge-based system. More recently, as KA has become more implementation independent, the intermediate phases of interpretation and analysis have been added to the KA process (Belkin, Brooks & Daniels, 1987; Kemp, Todd, Silva & Gray, 1994; Kidd, 1987; Wielinga, Schreiber & Breuker, 1991). Interpretation is the application of a conceptual framework to understand the data collected (Kemp *et al.*, 1994; Wielinga *et al.*, 1991). Analysis activities cover a wide range, for example, protocol analysis (Belkin *et al.*, 1987) and the breaking down of the outputs of the elicitation phase into concepts, attributes and relationships (Kemp *et al.*, 1994).

While KE is critical to the quality and success of KA, little attention has been given to KE (Hart, 1992; Hoffman, 1992). Regoczei and Plantinga (1988) think that this lack of attention could be because KE is perceived as being much harder to deal with. There is little consensus on methodology (Gruber, 1989) and very little systematic

understanding of how best to do KE (Wood & Ford, 1993) with most research and practise being based on a 'patchwork' of methods and techniques imported from other disciplines (Gaines, Shaw & Woodward, 1993). Cumulative knowledge about KE is also severely hampered by the lack of informative details about methods used during KE sessions (Hoffman, 1992). The process of KE needs to be made explicit and different methods need to be investigated and documented.

4.1.2 The scope of KE

In computing, KA has been considered part of the field of expert systems where the aim is to fully or partially automate some activity of human expertise. However, KA cannot be constrained within the field of expert systems, even when the scope of expert systems is expanded out of a strict artificial intelligence and automation framework (Regoczei, 1992). KA is increasingly important for a range of other computing endeavours; for example, tutoring systems and adaptive interfaces (Cooke, 1994) and tools for social science research (Heather & Lee, 1995). Systems analysis can also be considered to involve a large amount of KA if the system user is perceived as an expert informant for a particular situation (Kemp, 1996; Regoczei & Plantinga, 1988).

Independence of KA from expert systems is also suggested by important commentators within the field of KA. They see the elicitation and representation of knowledge using the techniques of KA, independent of whether an expert system is created, as helping people to create new understandings and capabilities (Clancey, 1993), as worthwhile (Hoffman, 1992), and a grand new enterprise (Regoczei, 1992). This is supported by Ford and Bradshaw's (1993) finding that often the most important product of expert system projects is the insight gained from KA rather than the knowledge-based system.

One of the consequences of confining KA within expert systems, is that development and study of KE techniques have been limited to well-structured domains (Belkin, *et al.*, 1987; Ericsson & Simon, 1993). This focus is understandable given the success of expert systems in this type of domain; for example, diagnosis of meningitis and blood infections and mineral classification. However, the vast majority of real world problems are ill-defined which Reitman (1964) describes as when one or more of the initial state, transitions, or final states are unclear and/or when there is no systematic way to tell whether the solution is correct. This thesis uses the term 'open' to refer to domains where the language of description can not be defined in total. Such domains have been variously referred to as: complex; soft; real world; ill-structured; ill-defined; and human. Regoczei (1992) criticises the field in general for developing and testing methods of KE on over-simplistic tasks which fail to capture real world complexity.

Researchers in expert systems have realised the brittleness and limited nature of their successes, but have been unable to build a functional expert system for a general task domain. Obstacles are complexity (Ericsson & Simon, 1993), the common sense problem (Lenat, 1986), and the dynamic, changing nature of the world (Clancey, 1993). However, rather than building expert systems that simulate all the functioning of an expert, there is increasing realisation of the usefulness of augmenting human capabilities in collaborative systems (Clancey, 1993). Here the general strategy is to divide the work so the person and the machine each do what they are good at (Gruber, 1989). Clancey's (1993) vision is that such expert systems will collaborate with social scientists providing them with flexible prototyping tools for adjusting to change and tools that will facilitate not just automate conversations. Such tools have already appeared in social science research to assist theory development and qualitative data research, and provide advice and instruction (Heather & Lee, 1995). Such approaches mean expert systems can be developed in more complex, general task domains. Appropriate KE and KA techniques for these 'open' domains will be required.

Information Systems, too, is increasingly concerned with the study of 'open' domains. Holistic real-world answers are needed to real-world problems (Rouse & Dick, 1994), which includes the study of human-to-human and human-to-technology behaviour within an organisation (Parker *et al.*, 1994). However, there is a scarcity of published material on research methodologies for 'open' domains, especially qualitative methods, and software tools to support such efforts (Rouse & Dick, 1994). Rouse and Dick (1994) found that most case studies go directly from a discussion of the sampled population to the research findings without any description of how the pages of notes and interview reports are reduced and interpreted and with little reference as to how such analysis might be enhanced by computer support.

In summary, in the field of computing KA needs to be independent of the narrow confines of expert systems. There is a need to develop KE and KA methodologies for 'open' domains for a range of computing endeavours. This is more so as computing moves out of relatively well-structured concerns such as word processing, spreadsheets, and business databases, and into more complex arenas such as, education, psychology, and linguistics. Prior to 1987, there were few studies of KA in 'open' domains (Belkin *et al.*, 1987). Since then, some studies have emerged (for example, Kemp *et al.*, 1994). The development and investigation of EXCOVE as a KE methodology for 'open' domains aims to facilitate this expansion.

4.1.3 The nature of expertise

One of the first steps in KA is to identify the experts. However, there is often no indication of the criteria used. When given, the criteria are typically general, based loosely on performance; for example, a high success rate in performance (Eaves, 1994) and perceived by the field to be functionally better (Ford, Bradshaw, Adams-Webber & Agnew, 1993). However, identifying performance is problematic. For example, in the field of psychotherapy, as previously discussed in chapter two, there are no agreed-upon measures of therapy outcome that could be used to evaluate performance; and this is despite 40 years of research effort in outcome assessment. Cooke (1994) concludes that identifying an expert is non-trivial. Brule and Blount's (1989) criterion that an expert has knowledge valuable for the system being developed is somewhat circular and too general to be useful. Comparative studies of differences between experts, novices, and advanced beginners (Ericsson & Simon, 1993) do not provide guidelines that could be used as criteria either.

The most comprehensive and potentially useful criteria are provided by Scott, Clayton and Gibson (1991) who state experts are; more accurate, quicker, more economical and more consistent than the average person, have years of experience, have current experience, perform on a routine basis, and less experienced people seek out their help, advice, and instruction. In the absence of an ability to assess performance, as is the case in psychotherapy, the remaining criteria from those given above can be refined to length and currency of experience and high regard from the field.

A very important question for KE is whether an expert's knowledge is tacit, and if it is, how much is tacit. Anderson's (1983) distinction between static, *declarative* knowledge about facts and *procedural* knowledge which is knowledge about *how* to perform cognitive activities is accepted by many in cognitive psychology (Gordon, 1992). While declarative knowledge is able to be verbalised, much of our skilled behaviour is driven by procedural knowledge that can not be. Studies in cognition show procedural knowledge for a task becomes highly automated over time so that processing requires little conscious cognitive resources and is unavailable to conscious awareness (see Gordon, 1992 for a summary). As procedures become automated, the ability to verbalise the knowledge decreases.

The years of learning and experience it takes to become an expert, suggests experts' procedural knowledge is tacit (Brule & Blount, 1989; Gruber, 1989). In an early but influential paper, Nisbett and Wilson (1977) proposed that there is little or no direct introspective access to an expert's cognitive processes. They found that verbal reporting is based on *a priori*, causal judgements of plausibility which are sometimes accurate,

sometimes not. This has support from studies that show reconstructed reasoning, of the kind that forms the basis of most major textbooks, is inaccurate (Musen, 1993).

Does this mean that an expert's knowledge is not available to introspection and their verbal reports can not be accurate or complete? Fortunately, studies since Nisbett and Wilson have identified factors that affect consistency and accuracy of expert's verbal reports. The type of questioning has an important impact on the ability to access tacit knowledge. There is evidence that concurrent (occurring at the time of the task being done), 'think aloud' verbal reports give richer data about the cognitive processes the reporter is going through than do interviews and post-event questioning (see Ericsson & Simon, 1993 for a summary). Think aloud reports where the expert just verbalises the thoughts they are thinking has shown greater accuracy than ad-hoc justification and explanation (Ericsson & Simon, 1993).

It has been reasoned that subjects verbalise thoughts in response to specific cues in attention and perception (Cooke & McDonald, 1988; Ericsson & Simon, 1993; Ford *et al.*, 1993). Kagan and Kagan (1991) find the use of video playback greatly enhances viewers ability to access cognitive processes occurring in the original event. These studies suggest that what is in, and available to, consciousness is influenced by contextual factors; the closer the context of the recall, the greater the access and accuracy. This has crucial implications for how KE can be successfully achieved.

Another potential factor that impacts on the ability to self report is an expert's degree of consciousness about competence. There has been little recognition of the possibility of varying degrees of consciousness. An exception is Regoczei (1992) who states that the ability of an expert to verbalise and communicate his knowledge seems connected with whether the expert has a conceptual model of the knowledge. Reason (1994) explicitly addresses this possibility believing that experts can be trained to be more conscious. He found that although initially there is often a decline in the expert's ability to perform the task, this can be re-established.

4.2 EXCOVE from a KE perspective

There are three principle topics in KE that are relevant to the innovations in EXCOVE (Carter & Patrick, 1997). They are expert commentary, multiple expertise, and video recordings.

4.2.1 Expert commentary

In the initial phase of KE, it is claimed that the expert should be encouraged to talk freely (Wood & Ford, 1993) and in a natural way (Gruber, 1989; Hart, 1992). While a concurrent, think aloud method encourages this and is good for accessing tacit knowledge as previously discussed, it cannot be used when the task of itself involves verbal communication or already has high cognitive demands (Cooke, 1994). This is the case in many tasks and certainly in psychotherapy. In these cases unstructured interviews using an open questioning style are usually considered the best way to achieve the initial data gathering aims and is the most common technique used (Cooke, 1994).

Scott *et al.* (1991) classify questions on a spectrum from highly open to very closed where the most open question might begin; "Tell me about...". Gorden (1975) gives five dimensions of scope for questions and also gives, "Tell me about..." as an example of the beginning of the most open question. Open questions have many advantages over more closed or specific questions. The way in which a question is phrased has a demonstrable effect on the answer which is given (Brule & Blount, 1989; LaFrance, 1987). Open questions can minimise the possibilities of leading questions and introducing bias (Pidgeon *et al.*, 1991). The dangers of the knowledge engineer⁵ interrupting (Hart, 1992; Wood & Ford, 1993) or dominating (Pidgeon *et al.*, 1991; Wood & Ford, 1993) are also minimised.

Open questions are used to get certain types of information that can be distorted using specific questions. This includes unanticipated information, an expert's path of association, the relative importance of various aspects, the frame of reference, the chronological order, and the vocabulary (Gorden, 1975). These sorts of information are needed in the initial phase of KE, especially when the domain is not well understood and is complex as in psychotherapy. Open questions also have important motivational effects (Gorden, 1975) in establishing rapport between knowledge engineer and expert (Cooke, 1994) and involving the expert in the process so that they become committed to it (Pidgeon *et al.*, 1991).

⁵the knowledge engineer conducts KE with the domain experts and usually formulates the knowledge for use in an expert system.

However, the usual way of using open questioning in an unstructured interview comes at a large cost, that is; copious, unwieldy data that can be irrelevant and incomplete (Cooke, 1994). This results not from open questions, but from the lack of focus on specific instances which causes vagueness, digression, repetition, and information difficult to analyse (Hart, 1992). Specific instances cue and activate an expert's processing mechanisms (Regoczei, 1992) and details of operation (Brule & Blount, 1989). It seems knowledge becomes structured only in response to some specific problem to be solved or set of complex information to be acted upon (Bellezza, 1992).

A profitable approach would therefore be one that combines open questioning with a focus on specific instances thereby retaining the multiple advantages of open questioning, minimising the possibility of unwieldy and irrelevant information, and activating the appropriate cognitive processes. Such an approach appears to have received relatively little attention. Wood and Ford (1993) suggest the use of examples with open questions but do not list this approach in their table of question types (see Wood & Ford, 1993, table I, p. 78). Cooke (1994) lists various techniques that focus on specific cases but does not explicitly link open questions with them. And Cordingley (1989) describes retrospective case description, indirect questions (open), and the use of video recording, but does not combine them to be a significant KE approach.

EXCOVE takes this approach of combining open questions with focus on specific events (realised through the use of video-recordings) and calls it commentary. Multiple experts comment on a video-recording of an event (multiple experts and the advantages of video recording are discussed in the following sections). Commentators are of two types, those who participated in the event and those who didn't. Both types of commentators are given broad and general guidelines for giving their comments on the videotaped event. Commentary is recorded on audiotape that facilitates the commentators expression in a free and natural way (Hart, 1992).

The use of teacher or trainer experts in the field as commentators is not explicitly specified in EXCOVE although it is potentially very useful. As previously discussed, experts are most likely to have varying degrees of consciousness about their competence. Teachers will have already made the effort to understand and communicate their knowledge. Ericsson and Simon (1993) and Scott *et al.* (1991) express support for the use of teachers especially in the early stages of KE. However Ericsson and Simon (1993) describe studies that show the correlation between expert competency and ability to teach related skills is low and the cognitive processes mediating expert

performance may be quite different from the steps given by teachers to novices. Further studies are required for clarity on this matter.

4.2.2 Multiple experts

Many expert system projects benefit from the use of multiple experts during KE (Brule & Blount, 1989). Gaines (1987) states groups of experts, rather than individuals, should be used in developing expert systems because multiple sources can increase relevance, completeness, correctness, and assist when knowledge is tacit or unable to be easily understood.

There is little documentation on difficulties that can occur when using multiple experts in KE. Scott *et al.* (1991) comment on the difficulty of accommodating different interactive styles and the role of the researcher when the group of experts meet together. Commentary occurs one at a time and minimises the need for accommodating different interactive styles because of the minimal interaction and non-directive nature of commentary. The majority of the literature on multiple experts refers to post-KE needs such as how to combine information and resolve differences from multiple sources. Recommendations include using psychological scaling techniques (Cooke & McDonald, 1988) and having a head expert who resolves differences (Brule & Blount, 1989).

4.2.3 Video recordings

There are few reported cases of the use of video recordings in KE and of these the majority are for recording interviews with experts (Scott *et al.*, 1991) rather than recording performance, although Cordingley (1989) describes video recording both at the same time. A study by Belkin *et al.* (1987) demonstrates the advantages of recording expertise for use in KE. The expert is audio recorded at work on real problems in her normal environment with subsequent interviews greatly enhanced by having the recorded data at hand. Although the recording is audio, the same procedure can be used with video. The strong advantages video offers KE, especially for expertise that has a visual component, have been virtually ignored. The advantages of video for KE are: sensory-rich memory cues; control over viewing; enhanced awareness; convenience; non-evasive; and usefulness in analysis. Each of these is discussed below.

- **Sensory-rich memory cues.** Concurrent reporting is considered powerful because subjects verbalise thoughts entering attention in response to specific cues in attention and perception. Whereas, post-event recall is relatively inaccurate and weak because of the deficiency of specific cues. Studies by Tulving (1983) show the ability to recall a past event depends on compatibility between the trace (memory about the event) and the cue (information at the time of retrieval). Video increases

this compatibility by providing cues rich in visual and auditory information. Use of video minimises memory retrieval errors and assists re-construction (Cooke, 1994) and recall as discussed in chapter two.

- **Control over viewing.** Another key advantage of video recording is control over viewing. Video gives the expert commentator the abilities to both slow the viewing process down (Kagan & Kagan, 1991) through pause and, for multiple viewing using rewind. Pausing and rewinding fosters detailed examination of events that occur in human interactions that are too numerous to consciously attend to in real time. However, rewinding using a videotape player is often awkward and time consuming because of the difficulty of searching and finding the appropriate segment of video.
- **Enhanced awareness.** Kagan and Kagan (1991) found that when participants viewed video replay of their previous inter-personal activities, they were conscious of things they were not normally aware of, such as other people's subtle emotions. Kagan and Kagan believe one reason for this is that during video replay viewers are not so caught up emotionally as they are during the real event. Further research is needed to explore whether video replay provides a greater ability to attend to and be aware of thoughts compared with the *in-vivo* situation.
- **Convenience.** Video captures the event for viewing at convenience. This is especially useful when the number of viewers is large and multiple viewings are necessary. However, arranging the video recording of the event can require considerable effort as can be seen in chapter seven.
- **Non-evasive.** Video can be useful when direct observation will interfere with performance (Brule & Blount, 1989; Cooke, 1994). However, the extent to which video interferes with performance is not well known. The presence of cameras and the thought of being later viewed will have some effect on participants' performance. Careful attention is needed to create safety for participants so that this effect is minimised.
- **Useful in analysis.** Video data can also be invaluable in later stages of analysis. It can be used in a variety of ways such as, confirmation and validation of models against the data, and in developing consensual rating schemes.

There are two important questions concerning the use of video. First, are responses obtained during videotape-assisted reviews accurate representations of the actual experiences? This has been discussed in section 2.2.2 with initial indications that recall is fairly accurate. The other question is how being video recorded effects the behaviour of those being videoed? Shotter (1983) points out that a subject's behaviour changes from when the subject is unaware of the camera and then is aware of it knowing they will view and self-evaluate the video. He believes that there is an increase in self-

awareness, but says further investigation is needed to ascertain which aspects of behaviour are attended to and for what purpose.

4.3 Conclusions

Methods of doing KE especially in 'open' domains have received little explicit attention. KE needs to be independent of the field of expert systems so that it can be applied to other endeavours in information systems.

The collection of commentary from (independent or observer) experts on specific videoed-taped therapy sessions is the core of EXCOVE. This strategy aims to retain the advantages of open questioning, minimise the possibility of copious, unwieldy and inaccurate data, and trigger and bring to consciousness appropriate cognitive processes.

Although none of the elements of EXCOVE's approach are new, the combination appears to be novel. It is not suggested by Wood and Ford (1993) or Cordingley (1989) and it fails to fit easily into any of the categories given by Cooke (1994) in her comprehensive coverage of KE methods from the fields of psychology, business management, education, counselling, cognitive science, linguistics, philosophy, knowledge engineering and anthropology. Using her categories, EXCOVE best fits under the 'process tracing' family of techniques as a verbal report that is off-line (retrospective) and aided (video). However, the addition of non-participating commentators is not given for this category and the use of open questions is not explicitly specified.

Chapter Five

Computer-Assisted Qualitative Data Analysis Software (CAQDAS)

The descriptive nature of the data collected using EXCOVE plus the theoretical immaturity of psychodrama meant analysis tasks were most akin to qualitative approaches. FERAL was designed to assist these qualitative analysis tasks. This chapter looks at the merits and dangers of Computer-Assisted Qualitative Data Analysis Software (CAQDAS⁶), the family of computer systems FERAL belongs to. A set of suggested software innovations relevant to this project was produced providing some guidelines for the development of FERAL.

5.1 Background

A clear and distinctive definition of qualitative research is difficult. There are many different approaches belonging under the qualitative umbrella as evidenced by the diversity of approaches in Denzin and Lincoln's (1994) *Handbook of Qualitative Research*. There is little agreement on how the different approaches might be categorised (Weitzman & Miles, 1995) and what might be distinguishing characteristics. Two suggested characteristics are an emphasis on worldviews of the actors in the field under study (Kelle & Laurie, 1995; Seidel & Kelle, 1995) and immersion in the data (Lee & Fielding, 1995). Kelle (1995) also suggests that qualitative approaches focus more on generating new insights and developing new theoretical concepts, than testing hypotheses derived from existing theories.

5.1.1 History

A computer program to assist quantitative analyses appeared as early as 1966 doing word frequency counts for content analysis (Kelle, 1995). However, dedicated programs were not developed for qualitative analysis tasks until the 1980s. Qualitative researchers did not imagine that the computer, basically a mechanical device as they perceived it,

⁶ CAQDAS can refer to the field or to all of the programs for assisting qualitative analysis with the context indicating which meaning. A particular program can be variously referred to as a program, system, or software

could assist in qualitative analysis tasks that necessitated the understanding of the meaning of texts and the capture of complexity and ambiguity (Kelle, 1995). It was not until the 1980s with the spread of the personal computer and word processing, that the possibilities for computer assistance in qualitative analysis tasks such as text manipulation were realised and systems were developed and used.

Prior to the mid-1980s, most qualitative research was done by manual, paper-based methods (Weitzman & Miles, 1995). During the 1980s, several programs were developed providing code and retrieval facilities (Kelle, 1995). During the 1990s, these facilities were further developed and other facilities were introduced, such as hypertext linking, hypothesis testing, and conceptual linking and diagramming. In an informal survey in 1991 of over 120 qualitative researchers Miles and Huberman (1994) found 43% of the respondents used software for analysis. Lee and Fielding (1995) have the strong impression that use of CAQDAS is spreading rapidly amongst qualitative researchers with those who don't use CAQDAS, thinking they should at least know about it.

5.1.2 Types

Computer software that assists qualitative data analysis can be grouped into general and special purpose systems (Richards & Richards, 1994; Tesch, 1991b). General purpose systems are those also used outside qualitative research, and include; word processors, database management systems for textual data, and conceptual modellers. This chapter focuses on the specific purpose systems.

Specific purpose systems have some ability to manage text data, including storage, manipulation, copying, and retrieval. These systems have typically been divided into two types; *code and retrieve* and *code-based theory builders* (Fielding, Sept, 1994; Weitzman & Miles, 1995). However, Kelle (1997) argues strongly that the *theory builders* do not build theory and are just sophisticated versions of *code and retrieve* systems. Despite the misleading label, there does seem to be a distinction. The core facilities of *code and retrieve* systems are the attaching of codes to text segments and the ability to do simple search and retrieval based on the codes. Search and retrieval of text strings is also usually provided, as is attaching of notes and memos to text. The so-called *theory builders* provide some combination of one or more of the following facilities:

- Sophisticated search and retrieval mechanisms such as combining codes and text strings and the use of Boolean operators that can check for co-occurrence of codes
- The creation and linking of memos to codes as well as text
- Hypertext linking
- Auditing mechanisms

- Hypothesis testing
- Conceptual network building and diagramming.

Some of the more powerful features of leading software are:

- **AQUAD.** Logic programming for hypothesis examination that can be extended using PROLOG. Useful for cross-case configuration analysis.
- **ATLAS/ti.** Memos on any component. Construction of graphical and conceptual networks of components with links to data maintained and dynamically updated. Filtering of data. Support for multiple authors.
- **HyperQual.** Flexible managing and filtering of text data of different types. Some hypertext linking.
- **HyperRESEARCH.** Flexible organisation of data by cases. Simple if-then hypothesis testing.
- **Hypersoft.** Different types of hypertext links between text.
- **Kwalitan.** Friendly program that does the basics of coding and memoing without complications.
- **Martin.** Easy to do cutting and pasting of text facilitating increasing levels of abstraction. Flexible on-screen arrangement of system objects (either icons or text windows).
- **NUDIST.** Powerful code-based searching. Development of hierarchical categories of codes. System closure. Indexing of off-line data.
- **WINMAX.** Assists organising data from survey questionnaires. Information stored in standard dBase format so data can be exported to other software. Construction and display of hierarchical relationships between codes.

A textbase management program that also has some useful facilities is:

- **Folio VIEWS.** Excellent text interfacing facilities. Outlining (table of contents expandable and collapsible), different types of highlighting, dynamic updating of indexing when text changed. Powerful hypertext linking.

5.1.3 Evaluation

Evaluation of CAQDAS has not been comprehensive. One difficulty is that many of the latest versions of systems have not been around long enough for careful and considered appraisal. Surprisingly, there have been almost no studies on the use of CAQDAS with only one study of users' experience reported in the literature (Lee & Fielding, 1995). Of the reviews that have been done, many are by the developers of the respective systems themselves and so while illuminating the more positive aspects of a program, they do not always outline the limitations. The most comprehensive assessment and comparison of popular CAQDAS to date has been provided by Weitzman and Miles (1995). Table

5.1 shows a summary of their findings. However, it has already become somewhat dated because new versions of many of the systems have already appeared.

Software	Data Entry & Structure	Coding	Memoing & Notes	Data-Linking	Search & Retrieval	Conceptual & Theory Development	Graphics Editing	Data output & Display	User Friendliness
Hyper-Qual2	weak	okay	okay	okay	weak	weak	okay	okay	okay
Kwalitan	okay	strong	strong	okay	okay	okay	-	okay	strong
Martin	okay	okay	okay	weak	weak	okay	-	okay	strong
QUALPRO	okay	weak	weak	-	weak	-	-	okay	okay
THE Ethnograph	okay	okay	okay	-	okay	-	-	okay	okay
AQUAD	okay	okay	okay	weak	weak	okay	-	weak	okay
ATLAS/ti	strong	strong	strong	strong	okay	strong	okay	okay	strong
Hyper-RESEARCH	-	okay	-	-	okay	okay	-	okay	strong
NUD•IST	okay	strong	okay	weak	strong	strong	-	okay	strong
QCA	okay	n/a	okay	weak	weak	okay	-	okay	weak

"-" means absent

Table 5.1 Evaluation of CAQDAS - adapted from Weitzman and Miles (1995)

Weitzman and Miles (1995) conclude that NUDIST and ATLAS/ti stand out as far superior to others in almost all respects although neither has a comprehensive set of features. However, others have found NUDIST and ATLAS/ti awkward to use and overburdened with functions (U. Kelle, personal communication, July 22, 1997). The author has also encountered several researchers who reverted back to using simple *code and retrieve* programs because the programs did what they wanted without complications. This highlights one of the difficulties and challenges in designing computer systems, namely, how to add functionality without overburdening the user with complexity in the human-computer interface⁷. These and other aspects concerning the user interface are discussed in section 5.4.7.

⁷ The human-computer interface is also referred to as the 'user interface', 'computer interface' and 'the interface'.

5.2 Merits of CAQDAS

CAQDAS have been variously described as; of advantage (Miles & Huberman, 1994; Tesch, 1989), of real benefit and an enhancement (Lee & Fielding, 1991), a quantum leap forward from the scissors-and-paper approach (Weitzman & Miles, 1995), and supporting in intellectually meaningful ways (Weitzman & Miles, 1995). The general merits and benefits of using CAQDAS are discussed under the headings; systematic and explicit, efficiency, and creativity.

5.2.1 Systematic and explicit

Commentators are in general agreement that CAQDAS makes procedures followed in qualitative research more systematic (Conrad & Reinartz, 1984; Tesch, 1989, 1991a; Weitzman & Miles, 1995), more transparent and explicit (Conrad & Reinartz, 1984; Mangabeira, 1995; Tesch, 1989), more thorough and less likely to miss things (Tesch, 1989; Weitzman & Miles, 1995), more rigorous (Conrad & Reinartz, 1984), and more replicable (Mangabeira, 1995).

This is a desired development given that qualitative research has been criticised for a lack of clarity on analytic principles and procedures (Dey, 1993). Dey (1995) argues that CAQDAS can help researchers avoid the "traditional penchant for impression, insight, and intuition rather than systematic and rigorous analysis" (p. 73). Kelle and Laurie (1995) believe that CAQDAS can diminish the danger in qualitative research of neglecting counter evidence and building arguments on hastily chosen quotations. At least, CAQDAS can illuminate what aspects of the qualitative process can be systematised and made explicit and what aspects are more elusive and perhaps creative in flavour.

The use of CAQDAS has also been the catalyst for some reflection on qualitative procedures. NUDIST with its ability to represent hierarchical structures by connecting codes, exposed a lack of methodological discussion on the necessary preconditions for use of hierarchical structures and the dangers of the process (Richards & Richards, 1995). In response to these concerns, Richards and Richards formulated general principles for the construction of hierarchical structures they hoped would help resolve a difficulty quite common in qualitative theory building - achieving both fine-grained descriptions and progressing to abstract notions.

CAQDAS may also be a positive bridge between methodological differences of quantitative and qualitative approaches (Lee & Fielding, 1991) and lead to some reconciliation (Dey, 1993). Richards and Richards (1991) believe that by promoting

vigorous qualitative research without sacrificing the features of qualitative research, the dichotomy of quantitative and qualitative will be challenged. Mangabeira (1995) points out that the hypothesis testing ability of HyperRESEARCH has challenged a taken-for-granted assumption that model building would bring a kind of perverting, positivistic kind of reasoning to the qualitative approach. On the contrary, she believes the influence has been good and made more explicit the way in which research results are produced. Such tools have the potential to assist the problem areas in qualitative inquiry of validity and replication. A more explicit codification of qualitative techniques also has potential to facilitate the sharing of data and results (Mangabeira, 1995) and thereby assist group work.

5.2.2 Efficiency

CAQDAS can save time (Mangabeira, 1995; Richards & Richards, 1994; Tesch, 1989; Weitzman & Miles, 1995) and reduce tedium and drudgery on a number of mechanical-type processes (Mangabeira, 1995; Tesch, 1989), for example, attaching codes to text (Dey, 1993). CAQDAS also facilitates data entry, storage and retrieval especially as the amount of data grows (Lee & Fielding, 1995). Efficiency is achieved in the search and retrieval of instances of codes which can take hours manually compared with seconds using software (Lee & Fielding, 1995). Such easy and quick retrievals assists exploration of all information and, theory and hypothesis refinement (Kelle & Laurie, 1995). In comparison, manual testing of hypotheses requires re-reading of the text. CAQDAS also assists management of larger samples (Kelle & Laurie, 1995) and so can add greater breadth to the analysis.

5.2.3 Creativity

While CAQDAS cannot replace the thinking and analysis at the heart of qualitative research, it can support these efforts and facilitate a more creative approach by:

- **Making mechanical things easy.** By making mechanical things easy, they are less likely to get in the way of analytic processes (Lee & Fielding, 1991). For example, insights can be written as memos without losing contact with data and thoughts. Information needed to link the memo with the source can be written automatically. Done manually, entry of this information could interfere with the analytic focus and contact with the immediate data. Such automation also frees up time that can be spent on more creative and analytic tasks.
- **Allowing experimentation and exploration.** Tesch (1991a) finds CAQDAS fosters creativity by allowing the researcher to be more 'playful' since its much easier to repeat an analysis if the previous approach didn't work. Audit trails assist this revisiting of processes. Exploration of relationships of different categories once

encoding has been done can also facilitate a more creative approach (Lee & Fielding, 1995).

Some facilities offered by CAQDAS may result in research being done in new and progressive ways. For example:

- **Hyperlinking.** The ability to create dynamic links between data so that multiple, non-sequential pathways are possible through the data has been strongly championed as a potentially powerful aid to analysis (Dey, 1993; Coffey, Holbrook & Atkinson, 1996). While it is not a common method, it is not new. Kelle (1997) points out that in essence, it is cross-referencing that has been used for hundreds of years. Hyperlinking does not come without difficulties either. A lot of effort is required to set up the links (Coffey *et al.*, 1996) and the creator must still be selective in what pathways are created and what items are expanded (Lee & Fielding, 1996). The increased complexity of multiple pathways also means the user of a hyperlinked system must decide which pathways to choose and then maintain some kind of tracking or monitoring of these decisions.
- **Fine-grain and abstract foci.** As previously mentioned, Richards and Richards (1995) have indicated how a user might switch between text and index foci; to go from detailed in-depth examination to a more abstract, meta-view. One major restriction to the ease of doing this is the limited nature of the computer interface (discussed in section 5.4.7).
- **Integrated conceptual networks.** Computer systems offer the ability to build conceptual networks that are linked to the text and code data they represent. ATLAS/ti provides the best example of this facility.
- **Multimedia data.** The increasing ability of computer systems to manage audio and video as well as textual data means these types of data can be integrated into the research process.

5.3 Limitations and dangers of CAQDAS

Use of CAQDAS can have negative influences as well as positive. Negative influences and limitations of particular programs are not always identified or acknowledged because commentators can often be well disposed to the use of computers and program reviewers are often the program developer. This section discusses some of the concerns that they have been raised and highlights the importance of user awareness of a system's underlying theoretical orientation as essential to minimising any negative influences. The central mechanism of most CAQDAS, the process of coding, is looked at in detail and the lack of clarity over its importance and role in CAQDAS and qualitative analysis is

discussed. The section concludes with a discussion of some of the difficulties people have with using computers for qualitative data analysis.

5.3.1 Types of negative impact

Some of the major concerns that have been raised are discussed below.

- **Methodological distortion.** Perhaps the most common concern has been that CAQDAS might isolate researchers from the fundamentals of their methods (Lee, 1995) and that the style of the software may coerce a project along a particular direction (Richards & Richards, 1994) and so drive the research rather than serve the research (Seidel, 1991). Mangabeira (1995) talks of seduction that diverts attention from the logic of the research design and adequacy of the analysis. However, in the only reported study of users of CAQDAS, Lee and Fielding (1995) found users had little hesitancy in abandoning a program when it did not meet their needs or when it was perceived to be at variance with their analytical approach. Kelle (1997) believes that the danger of methodological distortion has been overemphasised. Studies are needed to explore and clarify this issue.
- **Orthodox approach.** Coffey *et al.* (1996) expressed the concern that the central mechanism of most CAQDAS, code and retrieve, was discouraging a healthy plurality of approaches and establishing a dominant approach especially for data management. They also suggested that there was a strong link between CAQDAS and grounded theory. In response to this, Lee and Fielding (1996) looked up 163 studies that had used ETHNOGRAPH (associated with grounded theory) and found only 30% of the studies cited a work associated with the grounded theory tradition and 70% cited other methods' texts. Kelle (1997) looked at the methodological backgrounds of the developers of three programs, Ethnograph, WINMAX, and AQUAD, and found that they were all different despite all the programs being based on 'code and retrieve'. He argues that 'code and retrieve' is an open technology more related to data management than analysis and that it can be used by a variety of methodologies.
- **Use because easy.** Dey (1995) argues that if software makes one analytic procedure easier than another, the users will be inclined to use that procedure. Lee (1995) echoes this danger saying research procedures can be used because they're easy not because they're appropriate. So Tesch (1991) points out that, "it will take a knowledgeable researcher to avoid the trap of taking advantage of all the features provided by a program and avoid composing research questions that accommodate the program functions" (p. 324).
- **Too much data.** The relative ease of handling larger amounts of data, can lead to collection of more data than is necessary (Weitzman & Miles, 1995) with researchers being overwhelmed (Kelle & Laurie, 1995) and drowning in complexity

(Dey, 1995). Seidel (1991) reports a growing infatuation in qualitative research with collecting large amounts of data. He fears that researchers will be lured into analytic practices that are more conducive to breadth analysis than depth analysis and so resolution will be traded for scope.

- **Distance from data.** The claim that use of CAQDAS can cause distance from data (Lee, 1995) is often voiced but is a vague statement that needs to be more specific to be useful. More specifically, Taft (1993) says that coding can de-contextualise the data and Dey (1995) discusses data fragmentation (arising from procedures which segment text) where data is not *in situ* and the overall sense is lost. Other examples are the inability to get retrievals in context and the inability to place any data alongside any other data (for example, memos with their source). Discomfort and unfamiliarity with technology can also result in a feeling of distance from the data (Taft, 1993).
- **Mechanical displaces analytical.** Dey (1993) claims analytic skills can be displaced through the automation of mechanical processes. An example occurs with a group using Ethnograph who found that rather than focus on coding as an intellectually interpretative process as they did manually by writing in interpretations and notes onto the transcript, they treated it as a mechanical process (Lee & Fielding, 1995). Lee (1995) warns that an increase in the level of technical proficiency is not always accompanied by greater theoretical acumen.
- **Computer related.** There are various difficulties and dangers connected with the use of the computer. These are discussed in detail in the section 5.3.3 under the headings: influence of tools; illusion of robustness; phobia and euphoria; unfamiliarity; complexity with functionality; and limited interface.

While there are different ways CAQDAS can adversely effect analysis, the degree of impact is dependent on the attitude of the user and his or her ability to discern the system's biases. Weitzman and Miles (1995) argue that for the user the important issue is not whether CAQDAS are neutral or controlling but,

understanding a program's properties and presuppositions, and how they can support or constrain your thinking to produce unanticipated effects. (p. 330).

To assist the system user to understand, it is crucial that the underlying methodological and theoretical assumptions of the system are made explicit. This has not been done adequately (Kelle & Laurie, 1995; Mangabeira, 1995). However, recent books (Kelle, 1995; Weitzman & Miles, 1995) and the debate in *Sociological Research Online* are making progress in this area.

5.3.2 Coding confusion and overuse

Nearly all CAQDAS are centred around some sort of coding - the attaching of labels to data segments. However, the lack of clarity on different types of coding and their importance and role in qualitative research strategies plus the centrality of coding in CAQDAS and the ease with which it can be done, can easily lead to inappropriate use and over-emphasis of coding and confusion of analytical purpose through disconnection from a strategic context.

Opinions differ on the importance and role of coding. Dey (1993) finds that selecting data, assigning to a category, and making connections between categories is central to a range of qualitative approaches. Richards and Richards (1991) suggest its importance has increased with the new ability CAQDAS has given to shift from a text focus to a code focus. Agar (1991), however, believes coding is over-emphasised and suggests a large part of the researcher's work consists of interpretation and fine grain hermeneutic analysis.

The problem is that use of software presupposes a way of seeing the problem and the situation, the pinnacle of the top-down framework that guides one into gathering of material, development of research categories, and perceptions of relationships among them. That critical way of seeing, in my experience at least, comes out of numerous cycles through a little bit of data, massive amounts of thinking about that data, and slippery things like intuition and serendipity, an electronic ally doesn't have much of a role to play. (p. 193)

Likewise, Lonkila (1995) believes grounded theory, a common analysis strategy in CAQDAS, has an over-emphasis on discovering categories and constructing coding structures at the expense of extracting the essence of the original texts through interpretation of the lived experience in the interactional context.

It is unclear how representative Agar and Lonkila's approaches are of other researchers. However, Lee and Fielding's (1995) study of CAQDAS users in Great Britain showed that problems to do with coding were often the reasons why researchers abandoned using software. These users found coding using CAQDAS, mechanical, tedious, dull, and time consuming. In one group, the coding scheme was changed and because there was no time for re-coding they worked from the original transcripts without re-coding. Another group dropped coding as an approach altogether.

Factual and referential codes

Some of the difficulty arises from a lack of a clear distinction between different types or functions of coding and their place in research strategies, and the implications for how coding is done and used. Seidel and Kelle (1995) provide a useful distinction between

two different types or functions of codes and place them in their respective research strategies showing how they should be done and used. They distinguish between codes as signposts and, codes as denoters of facts; or what Richards and Richards (1995) refer to as factual and referential codes.

1. Denotating, or factual codes are used in a deductible style of textual analysis in the style of classical content analysis. The absolute or relative frequency of the occurrence of codes are used to draw inferences and support or reject hypotheses. This analysis strategy requires that codes be applied in a systematic and consistent way to achieve high degrees of validity and reliability. Therefore coders must use the same code scheme and apply it in the same way and the coding must be inclusive and exhaustive, that is every instance be coded. To do this, there must be a ready-made category scheme, and if the scheme is modified then the data must be re-coded.
2. Signpost, or referential codes are characteristic of an open, inductive style of inquiry employed by interpretative-type analysis of textual data. These codes are merely indicators or pointers to some phenomena; they make no attempt to indicate the meaning of the phenomena or categorise it as is the case with factual codes. Such codes used in such an analysis strategy are imprecise and vague if compared with codes used for the representation of facts.

They will be attached not to precisely defined incidents in the data but to text segments which seem to be distinct incidents, anecdotes, or stated opinions about discrete events and which are tentatively classified into the simple content categories we had decided in advance. But this lack of precision is a necessary pre-requisite for their use in interpretative research, which incorporates a methodology of discovery. (Seidel & Kelle, 1995, p. 58)

Problems are occurring because both types of coding can be done using CAQDAS. Seidel and Kelle (1995) highlight two problems:

1. **Losing the phenomenon by reifying the code.** In this situation the analyst creates referential codes but then treats them as though they are factual. For example, a researcher may use referential codes to build hypotheses and code structures and then switch to testing hypotheses treating the referential codes as though they were factual. CAQDAS may seduce users into this because the computer can give the air of substance and concreteness. If such a switch is required, then the material needs to be re-coded using the re-formulated coding scheme.
2. **Losing the context.** In this situation, codes are separated from the context they originate from. This is possible in systems like NUDIST that encourage researchers to deal directly with their code structures. Richards and Richards (1994) therefore point out that the weak link will always be the adequacy of the coding process. Having the ability to restore the original context at any time is important for avoiding

this problem and researcher familiarity with the data through careful multiple reading is also an added precaution.

5.3.3 The computer as a medium

When a computer system is used in qualitative data analysis and other endeavours users can experience various difficulties, which include such things as the tool influencing the task, an illusion of robustness, phobia or euphoria, unfamiliarity, complexity with functionality, and a limited interface. These are discussed below.

(i) Influence of the tools

Computers will change the way qualitative research is conducted (Tesch, 1991a), but whether this is constructive depends on the users clear understanding of what computers can and can't do and how that serves their research objectives and strategies. Using the computer when its easier to use other methods is over-reliance and over-reliance on a tool can lead to loss of skills. Use of calculators has probably not done much for our mental arithmetic ability nor watching TV for our ability to entertain ourselves. Seidel (1991) argues technological innovation in qualitative research has been a double-edged sword and cites the audio-recorder as an example. Perhaps the introduction of audio-recording into field research has resulted in field researchers having less of an analytical frame of mind in the field and losing some on-the-spot analytical skills, preferring to leave analysis to when they sort through the massive amounts of data they collect.

(ii) Illusion of robustness

Use of the computer can impart some people with the false impression of robustness and correctness, a stamp of authority and approval. Concerns that have been raised are that use of computers may:

- Reinforce the idea that the researcher's concepts and codes are real (Taft, 1993)
- Give a false sense of accomplishment and productivity (Tallerico, 1991)
- Divert attention from the adequacy of the analysis (Mangabeira, 1995)
- Lead to premature theoretical closure (Lee & Fielding, 1991)
- Appear to be comprehensive and authoritative, especially through the use of hypertext to create multiple links to supporting information (Lee & Fielding, 1996).

(iii) Phobia or euphoria

The debate on the use of computers for qualitative research appears to have moved beyond seeing the computer as either “a panacea for analytic woes or as a devil-tool of positivism and scientism” (Lee & Fielding, 1996, 4.5). However, users are not neutral in their attitude to technology and can fall on a spectrum from the technophorics at one end to the technophobics at the other.

Technophorics in qualitative research are excited by the possibilities of the computer to the extent that the focus becomes the technology and not the research (Tallerico, 1991). Dey (1995) says obsession with technology and procedures will blind the analyst to conceptual challenges. Such researchers may also mistakenly think that good analysis will have to be done on the computer.

Technophobics are tentative in their use, failing to explore and exploit capabilities. Lee and Fielding (1995) find that many qualitative researchers tend to assume the program is magic and therefore fail to explore and exploit capabilities and realise limitations. They stress the importance of having an attitude of working with the system. In a somewhat similar strain, Richards and Richards (1994) find novice users of NUDIST are too often stalled by anxiety about creating a perfect index system up front, not trusting the promise that they can create and re-create the index system as they develop theories and discover patterns.

(iv) Unfamiliarity

Time and exposure is needed to become familiar with a computer system. This may be relatively longer in the qualitative research field where there is little tradition of using computers and most researchers have little experience beyond the basics of word processing (Lee & Fielding, 1995). Lee (1995) points out that learning time is time that can be used for research efforts. However, Weitzman and Miles (1995) believe there is a good return on this time investment in that new tasks are done more efficiently. The time needed to learn a new system will depend somewhat on the amount of exposure users have with other systems. The time needed to become acquainted can also have an effect on the selection of suitable systems. Users might be more influenced by familiarity and convenience than suitability because of the time needed to find and learn to use a system (Taft, 1993).

(v) Complexity with functionality

The added functionality that CAQDAS offers can lead to extra complexity and confusion for users (Richards & Richards, 1994) and increase the time needed to do analysis. Lee and Fielding (1995) say that by making the process more thorough and enabling more complex relationships to be examined, analysis time is increased. This increased complexity may become another reason why researchers never finish a study (Richards and Richards, 1994).

However, functionality and ease of use cannot always be both achieved and there is usually a trade-off. Richards and Richards (1994) found users were alarmed when they

removed constraints on the size and variety of records in NUDIST. In attempting to maximise functionality and retain ease of use, Richards and Richards (1994) suggest,

not to force a feature onto a researcher if it is not appropriate for a particular task - and to provide flexibility and 'a light touch' in the more powerful features so they do not run away with their users. (p. 460).

(vi) Limited interface

Apart from the replacement of the command line interaction style with the mouse and iconic style, there has been little change or progression in the nature of the usual human computer interface. No metaphor has taken the initiative from the desktop metaphor. And the physical means of the interface (keyboard, mouse, and screen) are still dominant. This interface has remained highly restrictive for a number of tasks.

The CAQDAS field has generally under-valued the importance of the interface and has rarely realised the influential role it plays in users' satisfaction with a particular system and their ability to do analysis tasks. For example, Lee and Fielding (1991) draw attention to the inability of CAQDAS users to easily make fleeting notes and doodles within which insight is often captured, but fail to see it as a deficiency in the computer interface. Seidel (1991) specifically designed his system, The Ethnograph, to enhance a researcher's relationship with the data, but was distressed and sounded somewhat puzzled that a user found it was diminished. He appears to have failed to consider the possibility that the distress related to the interface.

Agar (1991), however, has drawn attention to the importance of the interface for his analysis process:

What's important is the large space that I can visualise all at once...If I could sit in the middle of a room-sized screen, I would be telling you about how I had used the computer in the early stages of my research instead of why I didn't. The large, simultaneously accessible visual space is critical for me in snapping the macro frame for an ethnography into focus.

The large screen would also have played a role in the micro analysis. In that phase, I need to lay out a couple of stretches of transcript on a table so I can look at it all at once. Then I need to mark different parts in different ways to find the pattern that holds the text together and ties it to whatever external frame I'm developing. The software problem here would be simple to solve. You'd need to be able to quickly insert different coloured marks of different kinds at different points so you could see the multiple connections across the text all at once, sort of a multi-thread DNA laid out on the text so you could look at the patterns that each thread revealed and then the patterns among the patterns. But once again you'd need a much bigger

screen...because simultaneous visual access to material is what makes the ideas happen. (pp. 192-193).

Feedback from a discussion in the internet interest group, *qual-software*, on the advantages of manual, paper-based methods compared to computer methods and feedback from informal talks with researchers who have reverted from CAQDAS to manual methods, echo some of Agar's comments.

Looking at the advantages of the 'interface' of paper is useful to indicate if sources of difficulties in using CAQDAS are in the computer interface and indicate where the interface may be able to be improved. There is no attempt here to discuss the advantages of computers over paper.

- **Physical.** Paper is a physical object existing in three dimensions. It can be manually picked up and transported with ease. Paper exists in an unlimited workspace and interface area compared with the tiny confines of a computer screen. Paper can be spread and piled over a desk and on to the floor. With organisation in piles, files, boxes, and shelves, the storage structure and interface can be arranged to suit idiosyncratic preferences. There is also an immediate visible feedback on how much material is present and so one can go directly to the approximate location of what one wants or flick through the pile if necessary.
- **Editing.** Paper allows editing in a range of ways. One can highlight with a range of colours and mix graphics (circles, lines, diagrams) with text so that a large amount of information can be added easily. Compared to the keyboard and mouse for the computer, there is a rich variety of methods and tools to get information on to paper, for example; pencil, pen, brush, typewriter, printer, sellotape, and glue. With paper there is usually a history trail that can allow recovery of deleted information, whereas a deleted section of text from a word document will be gone if no backups are kept.
- **Accessibility.** Everyone can access paper, but not everyone has or wants to use a computer. The writing and drawing skills necessary for paper are usually learnt at school compared with the typing, application, and platform (PC, Mac, Unix) familiarity needed for computers. Paper is also one universal platform compared with the multiple platforms and programs for computers .
- **Aesthetics and comfort.** Paper can have an aesthetic appeal which comes without machine noise or vibration. Without radiation and screen glare, paper is easier on the eye. Paper doesn't tend to dictate your physical position to it, like a computer does. One can adjust the body position for maximum comfort and arrange the paper to suit.

How some of the advantages of the interfacing ability of paper may be transferred to a CAQDAS are presented in section 5.5.2 and in chapter six on the development of FERAL.

5.4 The innovations required

Given the advantages of paper over computer interfaces in this context, one might be inclined to cast off the technology altogether. However, a forward looking and evolutionary approach is much better than a defeatist or defensive one. Various innovations and improvements to current computer systems can be made which will also minimise the limitations and enhance the merits outlined above. The improvements relevant to this project plus facilities required by this project but not currently available are discussed. There is considerable overlap and inter-relatedness in these suggestions and so achievement of one may assist and/or rely on achievement of another.

Flexibility

Many CAQDAS have limited flexibility. The way data is to be conceptualised and the process of analysis is often narrowly determined by the system with few means to choose alternative approaches. The organisation, positioning, and size of elements of the system such as text document windows/boxes, code lists, memos, etc., are often preset and unable to be modified or re-arranged. Later Window versions of many CAQDAS (for example, ATLAS/ti, Nudist, Ethnograph, WinMAX) offer multiple, resizeable, moveable windows that improve flexibility in this aspect. Types of data handled, how text data must be formatted for entry into the system, maximum length of the data, size of text segments to code, length of code names, and so on are more often limiting. This lack of flexibility in CAQDAS severely restricts the range of analysis tasks they can be applied to and a researcher's ability to apply the system's tools in a way meaningful and useful to the researcher's objectives and satisfying to his or her preferred approach to working. The researcher's sense of control and creative initiative is often quickly destroyed, if he or she ever entertained the possibility the computer could encourage that.

Flexibility in a system encourages the user to be in control and focus on their analysis tasks and not the machine. It means a system is not dictatorial nor impose ideas of how to do analysis. The processes of interpretation and creativity in qualitative research can be elusive and difficult to make explicit (Dey, 1993), so system developers are best not to guess the exact procedures and methods of users, but to provide them with a set of flexible tools which the users can adapt creatively for their requirements. Pencil and paper is probably at the extreme end of the amount of flexibility possible with a range of

options of how they can be applied limited only by users' creativity and imagination. An example of flexibility assisting analysis in CAQDAS is HyperRESEARCH's ability to organise and structure data in different ways by grouping it in different case files. It is an example of a simple but powerful feature that doesn't depend on sophisticated programming or machine processing power.

Flexibility consists of two interconnected aspects: a range of functionality, and ease of adapting a system to serve a range of needs. Flexibility is the amount of choice or range of options a system's user has on the organisation of the data and operation of the system. The greater the flexibility, the more choices the user has over how the data is structured and organised and how the analysis is done. The integration and ease of going between different features and options are qualities of flexibility which along with the number of options can become criteria to evaluate a system's flexibility.

This project requires greater functionality and flexibility than is offered by current programs in these areas:

- Non-text data types
- Temporal support
- Textual data
- Coding mechanisms
- Memoing mechanisms
- Analysis approaches
- Human-computer interface organisation and operation.

What programs currently offer in these areas and what innovations and developments are required are discussed below.

5.4.1 Non-text data types

Until recently, the specialist CAQDAS systems focused on managing text data. NUDIST can now process video data via a separate program, CVideo. There are now also a number of specialist programs that handle video data including the ability to code, search, and retrieve (Weitzman & Miles, 1995). Given the enormous richness of video data and its potential to enhance and open new research approaches and endeavours, its integration into CAQDAS would be a useful addition.

Currently, there are three general ways computer-video integration is realised:

- Video on a video player controlled by the computer through a special connection
- Digital video of poor quality and short length on the average personal computer
- Digital video of better quality and longer length on a powerful but expensive computer.

Digital video data of sufficient resolution and length to be analytically useful has not been accessible to most researchers. However, as hardware continues to decrease in cost for equivalent capabilities, digital video of sufficient quality will become more accessible and its integration into CAQDAS will become desirable for some researchers.

Audio data may also become an important data type. Although it is difficult to see it replacing text transcripts with the familiarity and relative ease of accessing and manipulating text, audio will at least be a valuable companion making the text come alive and providing information lost in transcription. Voice-to-text software also promises to be of great assistance and when its accuracy improves, it will eliminate many hours of tedious transcribing.

Any new CAQDAS system will need to be designed so that non-text data types, especially video and audio, can be integrated into the system especially when hardware capabilities become accessible. Existing systems will also need this enhancement. Systems that have a conceptual foundation that facilitates the addition of new features and new data types will be of advantage. One of the important capabilities will be providing co-ordination between different data types, for example, videotape voice track with its text transcript.

5.4.2 Temporal support

Sequential and/or time indexing of data is not explicitly provided by any CAQDAS therefore any temporal information in the data is usually lost (Lee & Fielding, 1991). However, crude workarounds can be achieved by applying a coding scheme to the task. Time indexing of data can provide the basis for co-ordination of data referring to the same event. The data may be the same type, for example two text transcripts of verbal descriptions on the same event. Or the data may be of different types, e.g., a voice track on a video segment and its text transcript. A range of facilities can be developed using co-ordination, a number of which are crucial to this project for the analysis of data collected using EXCOVE:

- Show video segment(s) referred to in a text commentary, or that relate to a code or an instance of a code
- Show all expert comments on a particular video segment
- Show other expert comments that refer to the same event as this expert comment.

The temporal support facilities of time indexing, co-ordination, and search and retrieve are crucial for integrating multi-type data and providing facilities for a range of tasks, especially the neglected area of narrative-orientated research (Weitzman & Miles, 1995).

5.4.3 Textual data

Many systems impose a variety of constraints on text data. Martin limits text data to 50 Kbytes and The Ethnograph to 9999 lines. Pre-entry formatting is required for many systems. Kwalitan and NUDIST require data to be segmented, using a carriage return, into units that will be coded. Monitoring of the specialist email discussion group for NUDIST users showed this created unease, uncertainty and took considerable effort and time for many initial users. ATLAS/ti, Martin, and The Ethnograph do not have line wrap in their text windows and so it is best to limit line length to between 50-130 characters for ATLAS/ti depending on font size, 80 characters for Martin, and 40 characters for The Ethnograph. As well as the possibility that these line lengths will not suit the data, there is the overhead of setting it up, which may best be done with a word processor macro as is the case in The Ethnograph (Weitzman & Miles, 1995). Simple transfer of text e.g., copy and paste within the system is not possible in NUDIST; although it can be achieved via an external file.

So even the leading CAQDAS systems, NUDIST and ATLAS/ti, lack flexibility in acceptance of text. Unlimited length for the whole text file and any line is necessary for users to have maximum flexibility and use of entering their data. Folio VIEWS also demonstrates some outstanding text interfacing features that could be taken up: hierarchical structuring through outlining (table of contents expandable and collapsible), different types of highlighting that can be linked to all instances of a field, dynamic updating of indexing when text is changed, hypertext links, and popup notes.

5.4.4 Coding mechanisms

As indicated above, codes in Kwalitan and NUDIST can only be applied to a text segment which is delineated by a carriage return. This becomes clumsy if coding needs to be done on single words or extremely restrictive if different code segments are required than was first imagined and set up. ATLAS/ti provides the most flexible system of being able to code as small as one character and this is done in a simple and direct way through drag and select. HyperRESEARCH also offers drag and select but only to single-word granularity.

Some systems limit the number of codes that can be applied. The Ethnograph only permits twelve codes per line and seven levels of nesting and Kwalitan allows only 25 codes per segment. Many systems also limit the length of the name of a code as in Ethnograph and Martin within ten characters, Kwalitan within twenty characters, and ten to twelve characters recommended for NUDIST. This is often too brief for the names to be meaningful and assist analysis. Brief names for codes used referentially or as

signposts can give a false impression that they are factual (see section 5.3.2). Meaningful code names will help avoid this confusion.

No system provides multiple, independent code sets for a document. Many systems only give one code set per project, e.g., NUDIST. There are many possible uses for multiple code sets: trying different approaches, different foci, and different coders. Kelle and Laurie (1995) point out that,

the main goal at the stage of hypothesis generation is to discover new phenomena and to develop new insights, a diversity of codes can be rather fruitful, while the search for a consistent and stable code scheme at this point of the investigation carries with it the danger of blocking the path of discovery. (p. 26)

The ability to have any number of code sets and to combine and separate them gives users greater functionality and flexibility in their analyses.

Multiple instance sets for a union of a code set and a document are also useful for distinguishing between different coders. ATLAS/ti has a facility for filtering different users which facilitates this, but no interface mechanism for comparing the different codings easily. Distinguishing different coders can be produced indirectly in most systems by having a copy of the document for each coder. NUDIST has a useful feature in that the document reports containing the codes can be placed side by side for easy comparison. Other features that are useful but are not widespread are HyperRESEARCH'S ability to export and import code sets and The Ethnograph's markup of text with their codes.

5.4.5 Memoing mechanisms

Creating memos is an important and frequent task in qualitative analysis. They are used for noting theoretical insights and new ideas and are signposts along the path between data and theory (Prein, Kelle, Richards & Richards, 1995). While the need for powerful and flexible memoing is clear, no systems provide this and few have memoing as an important or strong analytical feature. NUDIST is an example of a system without strong memoing facilities. Most systems have the following restrictions in the memoing facilities:

- Size
- The types of objects for which memos can be created and linked to
- The number of memos a source object can have
- The number of links or sources a memo can have.

These limitations are discussed below.

Most systems restrict the size of memos. While memos will not usually be large, limits of 16 Kbytes (Martin) and 2000 characters (Ethnograph) may be too small. Sometimes only text segments can have a memo, e.g., The Ethnograph. In Kwalitan and Martin, codes can have memos as well and in NUDIST case-variables can also get them. ATLAS/ti provides the greatest range with memos being able to be linked to anything in the system - text, documents, codes, and relations.

Most systems conceptualise memos as being dedicated to one object and so memos can not have multiple links. Memos with multiple links, however, would be very useful because a note or insight may easily refer to more than just one source. Folio VIEWS has a popup memo that can be applied to multiple ranges of text. HyperRESEARCH has a related mechanism called “cases”. These have multiple links to text segments allowing different threads of text segments to be organised. However, the links are only one way, from the case cards to the coded chunks in context but not from context to case. Memos with multiple sources would allow a similar hyperlinking facility.

An optimal memoing facility would provide variable length memos, memos created from any object, multiple memos for a source, and memos with links to multiple objects. While individual components of an optimal memoing facility are provided by various systems, no one system incorporates all of them. Another important enhancement for memos; freedom to arrange and group memos is discussed in the later section 5.4.7 under 'objects'.

5.4.6 Multi-purpose

Some tasks required by different qualitative approaches have received little or no support in current CAQDAS. Some of Weitzman and Miles' (1995) suggestions on how various qualitative approaches could be supported are given below.

- **Narrative studies.** Causal networks and specific analytical narratives seen side by side.
- **Ethnography.** Ability to handle various data types including text, video, and audio.
- **Interpretivist/hermeneutic.** Easy annotation, seeing text and annotation in parallel.
- **Critical theory.** Same as above, with ability to see multiple kinds of annotation in parallel.
- **Collaborative and action research.** Easy comparison and juxtaposition of analyses by different partners.

What is noticeable is the usefulness of being able to arrange and place components of a system side by side. This is discussed further in section 5.4.7 and, section 5.5.2 introduces a *sheets-of-paper* metaphor for interface design that provides flexible arrangement of objects in the interface.

Although it is not possible or necessary for one system to support the whole range of procedures used in qualitative research (Dey, 1993), aiming for as full a range as possible will encourage a comprehensive system. Perhaps the development process will follow a similar path to the evolution of word processors. Different systems appeared with different configurations of features and gradually the more well supported ones became stronger integrating many of the features so that now there is arguably one dominant word processor containing most of the desired features. The optimal CAQDAS system should be designed so that extra facilities can be easily integrated. Flexibility in the arrangement of system components in the interface can also assist this integration.

5.4.7 User Interface

With the exception of Weitzman and Miles (1995), the impact and importance of the interface on the operation and performance of CAQDAS has received little attention. This is perhaps a reflection of the lack of maturity of the CAQDAS field and the simple nature of many systems that were developed part-time by researchers. Weitzman and Miles' (1995) comment that recent CAQDAS are more graphic, friendly, direct, easy, and intuitive than previous ones is more a reflection of the crude operation of the earlier systems than quality of the design of the interface in the more recent ones. A critique of the interfaces that received the highest grading in user friendliness in table 5.1 (ATLAS/ti, Folio Views, HyperRESEARCH, Kwalitan, Martin, and NUDIST) follows.

(i) Objects

A crucial element of CAQDAS which has profound effect on the ability to do analysis is the amount of freedom in placing and arranging components and objects on the screen or workspace. This aspect of CAQDAS has received almost no critique in the literature. There appears to be no awareness that flexibility in placement of screen objects is a possibility and therefore no consciousness about the substantial benefits that are possible.

Window boxes set in a fixed position are the norm; Ethnograph, Folio Views, HyperRESEARCH, Kwalitan all fix the position of objects. A structure is imposed, for example, text document here and only one at a time, the memo there in a small box below the document, the code set over there, and so on. ATLAS/ti for Windows 3.1 does have multiple windows for each project, but each window's contents (memos, document list, viewed text, viewed memo, codes list, and memo list) are in fixed positional boxes or panes. This simultaneous viewing of all 'relevant' information is given as an important reason why ATLAS/ti's interface at the time was considered the best (Weitzman & Miles, 1995). However, there is an assumption about what is relevant information for

the user. The information may not be required and so be distracting. For example, Kelle (personal communication, July 22, 1997) finds ATLAS/ti overburdened with screen objects. ATLAS/ti version 4 for Windows 95 has separate windows for objects and has rectified most of the limitations of fixed objects. However, you can only see one memo at a time.

The ability to arrange any object, in any place, in any size, at any time provides the greatest control and flexibility for the user. The uses this facility can be put to are limited only by users' imaginations and needs. For example, the various requirements listed for alternative analysis approaches previously mentioned can be significantly assisted, all memos referring to a particular document could be placed side by side for easy browsing, a document or memo could be enlarged to full screen size for easy reading, and so on. This type of flexibility is similar to the operation of paper where paper can be arranged in any way. The *sheets-of-paper* metaphor developed in this thesis for the operation of the interface is discussed later in the section 5.5.2.

ATLAS/ti version 4, NUDIST and Martin are two systems that approach this functionality through the use of windows; that is independent, movable, and sizeable windows. However, there are several difficulties with NUDIST's approach. The workspace can become cluttered very quickly, window position is not retained on quitting and so on restarting they must be rearranged and called up again, and only one project's windows at a time can be present. However, in Martin, objects are restored to the screen exactly as they were when left - "a truly marvellous feature...holds all of your analytical work together" (Weitzman and Miles, 1995, p. 179). Martin also has better management of screen clutter by providing the option of small icons and a hierarchical filing system where objects can be absorbed into folders and folders into groups and groups into other groups. However, the screen can still become cluttered and more restrictively the windows are very hungry of the computer's RAM with only about thirty objects being the limit for a standard configuration. The suggestion of a higher resolution monitor is a limited solution. However, the idea of using virtual desktop software has merit. Similar to this idea, a better solution would be a variable number of separate workspaces with their own windows. Optimally, the windows would retain their logical links across workspace boundaries and they would be transferable between workspaces.

(ii) Operations

Operations in CAQDAS are often not as simple, direct or intuitive as they could be. In NUDIST, for example, operations often involve a series of steps and dialogue boxes which may distract the user from the analysis task at hand and certainly slow the

process down. In the opinion of the author, ATLAS/ti can be confusing to use because of hidden operations and cryptic iconic buttons, and operations not at the point of selection. This is especially difficult for the naive computer user and initial user of the system. Integration of features is also an important aspect of operation. Having different modes can be confusing as in Ethnograph where you have to find the right module to get the appropriate features.

5.5 Design decisions

From the above considerations and suggested innovations a set of broad design decisions to guide the development of FERAL were made. These were grouped under functionality and interactivity. The actual design and development of FERAL was a complex process driven both by the design functions and interface features outlined here and also by the needs of the analyses tasks as they were defined. FERAL's development is described in chapter six.

5.5.1 Functionality

The broad features required, as indicated in the preceding section, are:

- **Non-text data types.** Support for management, accessing, coding, and retrieval of video data. Ability to integrate new data types.
- **Temporal support.** Maintenance of time information with data. This provides a basis for co-ordination of data, of similar or different types, that refer to the same event.
- **Textual data.** Easy and flexible formatting for data entry and unlimited length.
- **Coding mechanisms.** Flexibility in text unit to code and length of code name. Multiple independent code sets and the ability to compare the codings of different coders.
- **Memoing mechanisms.** Unlimited length, memos created from any object, multiple memos for a source, and memos with links to multiple objects.

5.5.2 Interactivity

Interactivity concerns the organisation of objects in the interface and the operation of the system. A *sheets-of-paper* metaphor is suggested and its implications for the behaviour of interface objects and the nature of operations are outlined. How this metaphor can assist the addition and integration of new features and functionality into an existing system is also discussed.

(i) A *sheets-of-paper* metaphor for the user interface

A clear, sound, and useful conceptual base is needed for the interface. Use of metaphor and analogy has often been very useful. Weber and Poon (1994) implement an efficient way to annotate video in real time through using the metaphor of a manual note taking pad. Martin's appeal is its interface which is based on a familiar and clear metaphor to qualitative researchers; annotated text plus a sorted collection of file cards.

A *sheets-of-paper* metaphor offers a number of potentially useful features. It is a metaphor users are familiar with. Importantly it gives control to the user to arrange objects in the workspace how he or she wants them to be, just as is done with sheets of paper. Some of the advantages of flexibility in arrangement of screen objects have already been discussed.

Sheets of paper can also be arranged in different discrete areas (desk, filing cabinet) and the areas can have any arrangement of paper. An interface using this metaphor will therefore provide any number of areas or workspaces, with each area having any number and arrangement of window objects (for example, document, code set, memo). To add to the functionality of paper, the computer can keep the logical links between window objects that may be in different areas. For example, memos may be kept in one area with the sources they link to in different areas. Windows can transfer between areas. This flexible organisation will prevent cluttering and more importantly allow the user to structure and organise the data to their preferences and needs. For example, all memos may be kept in an area for ease of finding the memos and instantly seeing all memos at once. Then a researcher may focus on a particular topic and want all the data relating to that topic in one area. The researcher could transfer all relevant memos to that topic area. Navigation will also be more intuitive to the user because the location of objects will relate to the way the user thinks of their data.

Therefore, two important components of the interface that achieve user-friendliness - display and navigation - will be largely dictated by the user as it is with paper (i.e., ease of navigation for paper is largely a function of the arrangement of the paper in space by the user). The system need only provide a simple way to move from one workspace or area to another. The *sheets-of-paper* metaphor also assists in the design of simple and direct operations and in the ability to integrate new features into a system.

(ii) Simple, direct operations

Other operations need to be as simple, easy, and intuitive as possible. This is important for qualitative researchers who may have little computer experience outside of word processing and especially important to those who tend to be technophobic. Operations

also need to be quick and direct, such that the number of steps to achieve a task and mouse movement are minimised. Following the *sheets-of-paper* metaphor, operations are best attached directly to the object that they effect and not via a remote menubar. This can be achieved through popup menus on the relevant object whether it be a window or a text segment within the window. Popup menus available directly at the place of interest can decrease mouse movement and the number of steps required to achieve a task. Using only popup menus has the added advantage of not requiring any fixed screen objects such as buttons and menubars. This has many important benefits: maximisation of screen real estate, increased flexibility to arrange objects, simplicity in interface, and ability to add and integrate new features without having to re-design the interface.

(iii) Upgradability

The ability to add new features to a system is important. For example, no CAQDAS has been designed for use in training and learning, yet there can be considerable overlap in the data and processes required in qualitative research and training. For example, in psychotherapy process research the important aim is to identify the mechanisms of change. The understanding and theory developed in the course of identifying and developing these mechanisms can become the core concepts for teaching and training therapists. The data used to develop theory can be used as examples in the teaching of a theoretical concept.

The *sheets-of-paper* interface can assist integration of different features, such as coding, conceptual mapping, and training. For example, ATLAS/ti, provides conceptual mapping in a separate graphical editor. However, with a flexible interface, graphics can be included in the same workspace as other objects. With the usual interface this would increase screen complexity. However, with the *sheets-of-paper* interface, the user decides and controls what is on the screen; it will be as simple or complex as they want.

In summary, the *sheets-of-paper* metaphor for the interface potentially facilitates conceptual transparency and operational directness. Objects are physically independent and can be arranged in any way. An object's operations are connected to the object so that they can be as simple and direct as possible. This behaviour is somewhat like the metaphor of building blocks; the user is given objects that behave in simple, predictable ways, but is left to construct something that fits their needs and sensibilities. Likewise, the *sheets-of-paper* metaphor is designed so that the research needs and analytic approach can drive the analysis, not the tools.

Chapter Six

Flexible Environment for Research And Learning (FERAL)

This chapter describes FERAL and its development process.

6.1 System requirements

The system requirements were compiled from three principal clusters of information and definitions that were collected prior to reaching this stage:

1. The perceived requirements for managing and analysing the data collected prior to starting analysis
2. The design decisions generated from innovations identified from the evaluation of CAQDAS outlined in chapter five
3. Initial developmental versions of FERAL.

The requirements were grouped under the basic system functions and the interactiveness or interface which are described below.

6.1.1 Functions

The functions required of FERAL were divided into three groups; database & synchronisation, development of coding schemes & theory building, and upgradability. A broad description of each of the main features of these groups is presented below.

(i) Database and co-ordination

1. **Database.** Data consists of videotapes and text transcripts of psychotherapy sessions and text transcripts of expert commentaries. The system must create a database so the data can be stored, browsed, retrieved, and edited.
2. **Textual data.** Easy and flexible formatting for entry into the system and the ability to handle text documents of any length.
3. **Video data support.** Support for the management, accessing, coding, and retrieval of video data. Video player operations needed are: play, pause, rewind, fast forward, play a specified segment, and read and write video player counter values.
4. **Temporal support.** Maintenance of time information with the data, including sequential and/or time indexing of text data.

5. **Co-ordination of data.** Co-ordination of data, of similar or different types, that refer to the same event. In this project, this means co-ordination between text and video data types and co-ordination between transcripts of videotaped psychodrama sessions and transcripts of commentaries on the same sessions.

(ii) Development of coding schemes and theory building

1. **Coding mechanisms.** Encoding of text data with ability for multiple, independent, concurrent encodings. Flexibility in the length of the text unit to code and the length of the name representing the code. Creation, deletion and modification of codes and instances.
2. **Memoing and annotation mechanisms.** Variable length memos, memos created from any object, multiple memos for a source, and memos with links to multiple objects. Annotation of objects and free, unattached notes.
3. **Search mechanisms.** Ability to search text for: text strings, codes, time code, instances, and memos.
4. **Miscellaneous.** Folders for easy organisation of memos and notes.

(iii) Upgradability and multi-purpose

1. **Training.** Facilities were needed for the system to be used in the training of psychotherapists, including; notes, guidelines and exercises that trainers can add, and facilities for trainee psychotherapists to navigate, search and retrieve and compare data.

6.1.2 Interactivity

Some different interfaces were examined and an interface based on a *sheets-of-paper* metaphor was chosen. The practical implications of this metaphor for the features of the interface are:

(i) Objects

1. Text fields (windows) and any screen objects must be able to be treated like sheets of paper and so be sized, moved, and arranged in any way the user desires
2. Screen real estate must be maximised
3. Users need to be able to create multiple workspaces or areas as the need arises.

(ii) Operations

1. Manipulation of windows and operations on windows and some part of window contents need to be:
 - (i) Simple, easy, and intuitive
 - (ii) Quick and direct.

2. Users need to feel a 'closeness to data.' This requires an ability to:
 - (i) See instances within context
 - (ii) Search and retrieve directly from text without having to go through intermediate codes
 - (iii) Have encoding information easily accessible.

6.2 The development approach and process

An *evolutionary prototyping* approach to development was used and is described below in section 6.2.1. The development process is outlined in section 6.2.2.

6.2.1 The development approach

At the pre-implementation stage, some of the system functions were known and some would emerge from analysis needs. The general style of the interface was also known but the details of the interface and how they were to be achieved were not known and would emerge as system development progressed and analysis needs were identified. A development approach was needed so that modifications, improvements, and additions to the system's functions and the interface's operation and style could be made at the same time that raw data and results of already completed analyses were maintained as part of a working system. An ability to try out different interface styles while raw and analytical data was being collected was also envisaged as a possibility. In addition, considerable post-project development was also envisaged because of the newness of the area of CAQDAS and the long term aims for FERAL to be a comprehensive system for research and training.

Evolutionary prototyping was chosen as the most suitable systems development approach for these needs. Prototyping is where iterative, working approximations of the final system are produced with the prototype typically discarded when it is adequate enough to be a blueprint for the full system. Avison and Fitzgerald (1995) use the term *evolutionary prototyping* to refer to prototypes that are not discarded but become the basis for the operational system with development and refinements to the system occurring at the same time the system is being used to collect and process data.

Hypercard was chosen as the authoring environment because it offered:

- Speed, ease and flexibility of development.
- Quick interface development which is easily modified.
- Hypertext a programming language with a powerful range of functions, dynamic instantiation of variables, and hierarchical structuring of system components with

message passing facilitating object orientated design. These facilities, if used appropriately, aid easier incremental and evolutionary development.

- The ability to integrate external procedures that can be written in other programming languages such as Pascal and C.
- The availability of previously written external procedures, e.g., popup menus, control of a RS-232 connection to a video player.

6.2.2 The development process

The substantial part of the pre-analysis developments occurred from September 1995 to April 1996. In a full-time design and programming effort over these eight months, most of the database and many of the analysis functions of FERAL were produced. Further development occurred after April 1996 as the bulk of the analyses were undertaken and modifications and new features were identified.

Initial versions of the system were developed and trialled from approximately August to October 1996. The developer's thinking and how the system progressed are described in Appendix E.1. The fundamental look and behaviour of FERAL emerged from these initial versions in November 1996. Appendix E.2 describes the major developments that occurred after this basic version of FERAL was established and Appendix E.3 gives the more detailed and technical developments. Chapter nine discusses what has been learnt in the process of designing and implementing FERAL that may have wider implications for the development of systems in general.

6.3 Description of FERAL

6.3.1 Overview of FERAL's behaviour and operation

FERAL's behaviour is based on a *sheets-of-paper* metaphor where the user arranges objects (text windows) in the system to suit their needs. All operations that can be performed on an object are in a popup menu attached to that object. These facilities are designed with the aim of making FERAL straight forward and intuitive to use, while at the same time offering flexibility in how a working system with data can be constructed, and the analysis tools applied.

Figure 6.1 shows some important elements of FERAL. Text in a document can be encoded with codes in a code set to create instances of the codes in an instance set. Memos can have multiple links to a range of objects. Free, unattached note windows can contain any text information. Memos, notes, and folders can be organised into folders. Document text can be linked to video through a video controller and a video player. And most objects can exchange text data with external files.

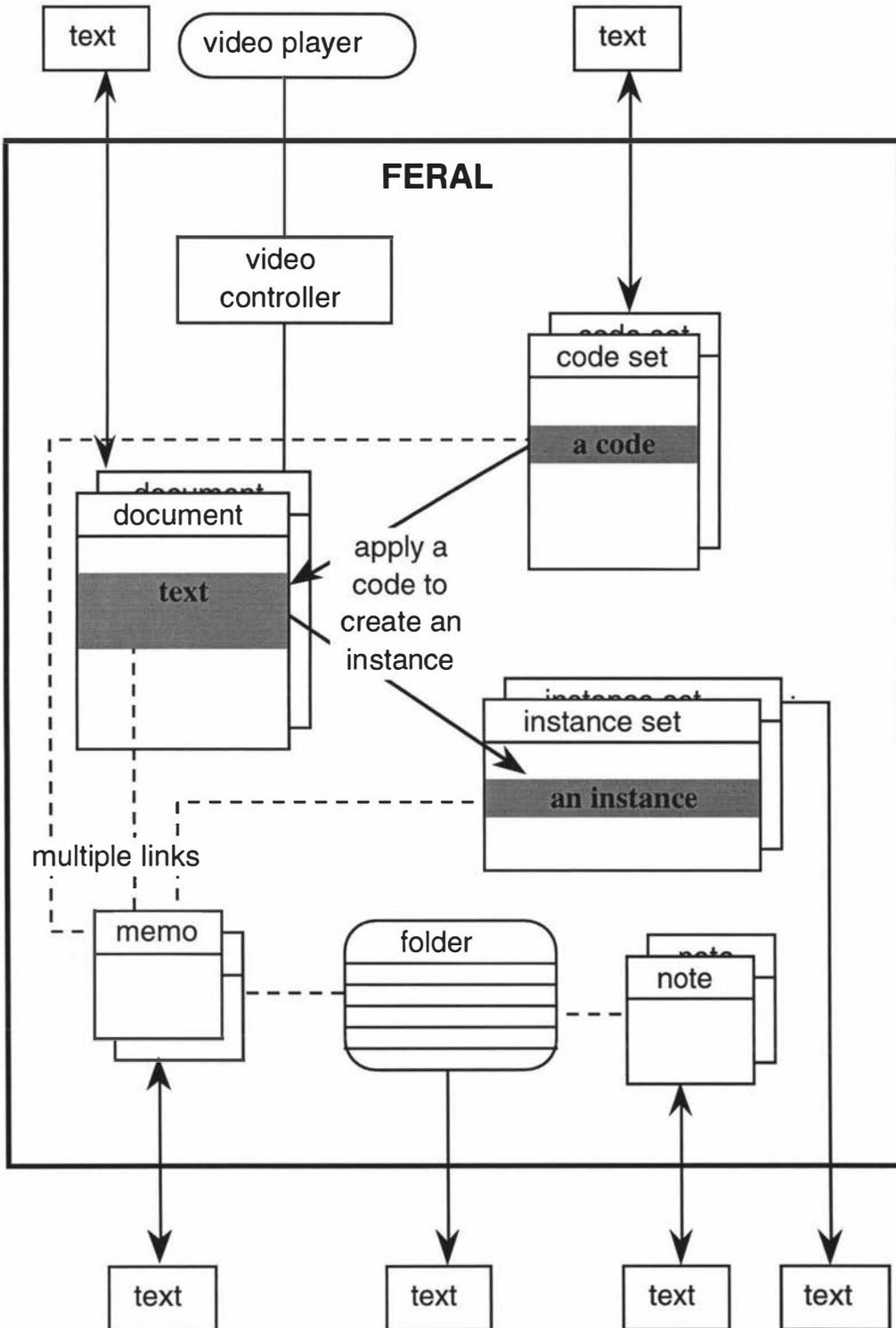


Figure 6.1 FERAL's elements and their logical operations

6.3.2 FERAL's interface

(i) Objects - windows

Figure 6.2 shows a number of windows. The body of a window is a text field. There is a close box at the top left and a resize strip around the window perimeter. Upon selection of the window it comes to the front of any other windows (e.g., window 5) and the titlebar goes from no lines to having horizontal lines. The window can be toggled between just titlebar (window 6) or full window by clicking on the titlebar and the window can be dragged by dragging the titlebar. Windows can, therefore, be sized, moved, and layered in any way.

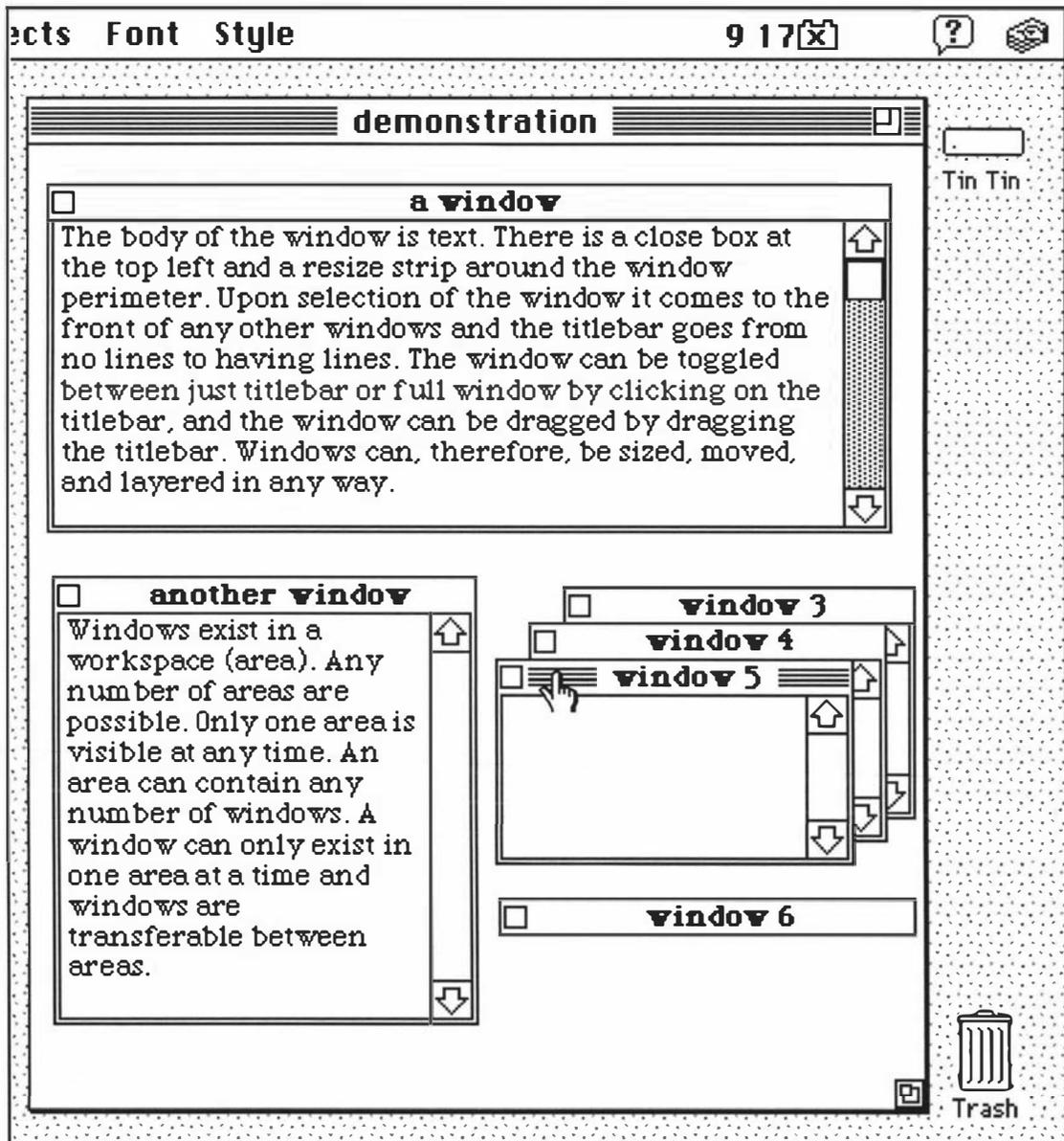


Figure 6.2 FERAL's windows and how they can be arranged

Figure 6.2 is a screen snap-shot of a FERAL system called 'demonstration' sitting on a Macintosh operating system background. All future figures of FERAL will be of windows within a FERAL system and will not show the background operating system. Figure 6.3 shows an area⁸ within FERAL with one of each of the six types of windows: document, code set, instance set, memo, note, and folder.

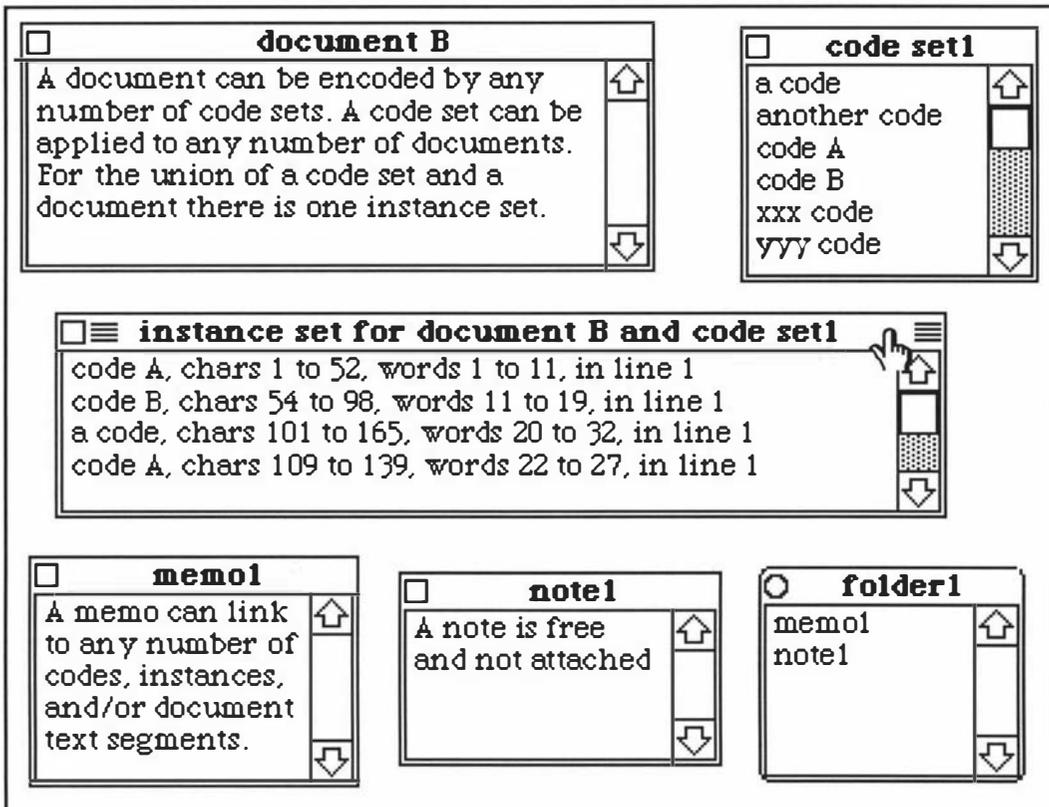


Figure 6.3 The different types of windows in FERAL

A document consists of text and can be encoded by applying a set of codes and/or given a sequential numerical index. Any number of independent, concurrent encodings of a document are possible by encoding it with different code sets. A code set contains codes and can apply to any number of documents. For each application of a code set to a document there is an instance set which contains instances of codes in a document. A memo can have any number of links to codes, instances, and document text segments. A note is not attached. A folder can contain memos, notes, or other folders with the name of the window as a line in the folder.

⁸ An area corresponds to a 'card' in Hypercard and is sometimes referred to as a workspace. It is a sizeable movable window that contains some arrangement of FERAL's windows. A system can have any number of areas, but only one area can be viewed at a time.

Video control is a floating palette that is independent of any area. The palette is shown in Figure 6.4. The play function is selected. 'Set' asks the user for a time code value to be entered that sets the internal counter value of the video player. This is necessary to coordinate the internal counter value with the time code value written on to the videotape frame. The time code was written onto the videotape to enable expert commentators to identify the segment of video they were commenting on. The function second from right plays from a time code value to another time code value.

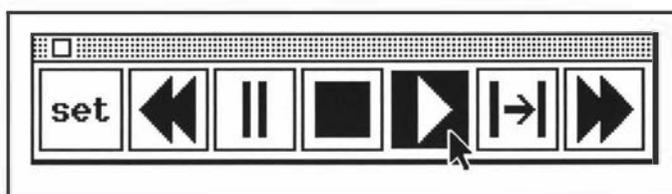


Figure 6.4 FERAL's video control

A working system or FERAL application (FERAL plus data) consists of one or more areas. Only one area is visible at any time. An area can contain any number of windows. A window can only exist in one area at a time and windows are transferable between areas. So windows are therefore physically and spatially independent of each other even though they may be logically linked. For example, an instance set can be in a different area from the document it is logically linked to. The exception is folders which can only contain windows in the folder's current area.

(ii) Operations' mechanism - popup menus

All operations are available through popup menus. Menus are attached to the relevant object. For window operations, the menu appears upon pressing (holding the mouse button down) on the window's name. Figure 6.5 shows the menu for an instanceset window with option 'sort on code' selected.

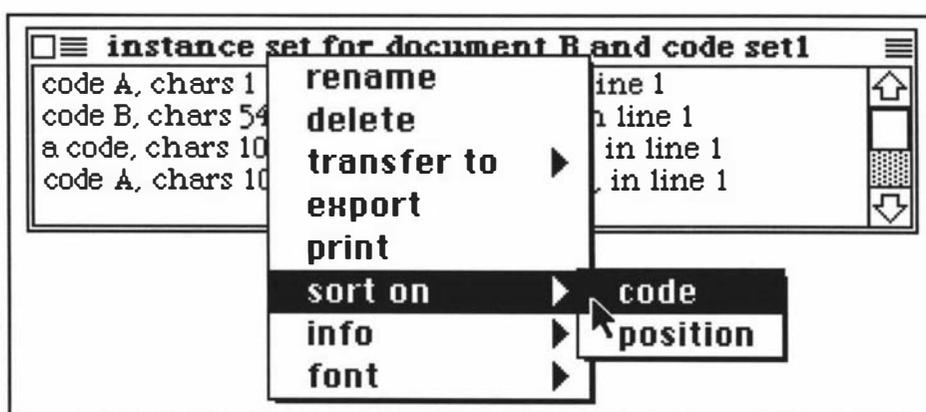


Figure 6.5 A window menu

For operations on window contents, the menu appears by selecting any text and pressing down on the mouse button. Figure 6.6 shows a menu for a segment of text in a document. As a result of this option, the selected text, "For the union", is encoded with 'another code' from 'code set1'.

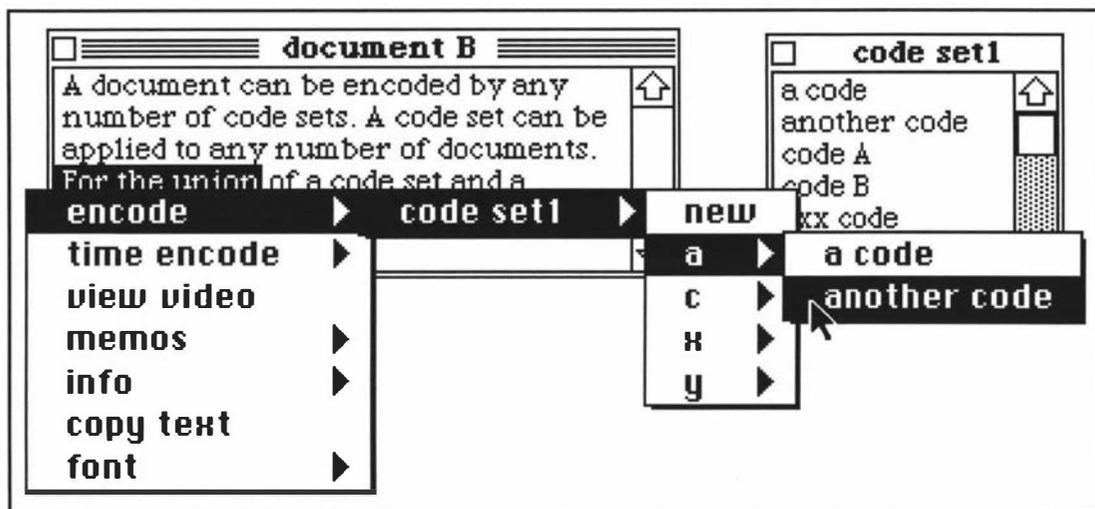


Figure 6.6 Menu for the contents of a window

General operations not attached to a window are in a menu activated by pressing on the background where no window exists. Examples of these functions are: cut and paste area, go to another area, make new windows, transfer in windows from other areas, and quit. Figure 6.7 shows a background menu where the user has chosen to transfer the window 'commentary C' from area 'area2' into this area.

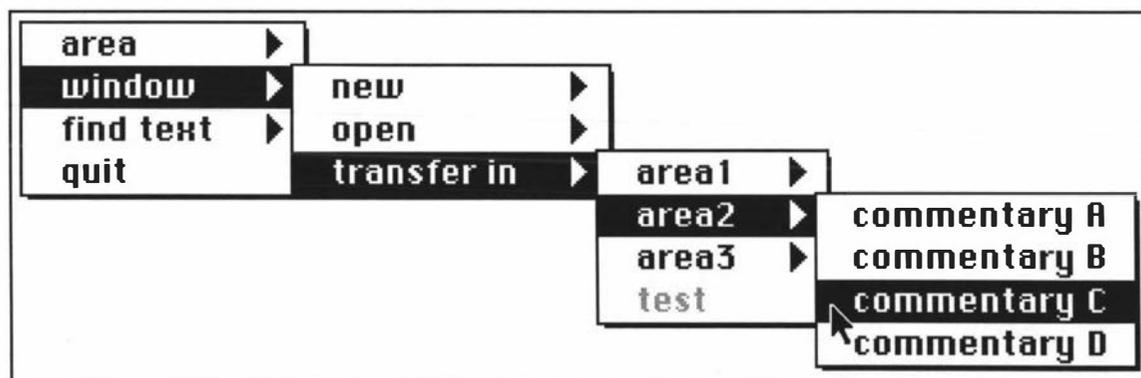


Figure 6.7 FERAL's background menu

All operations for a window or text segment are available in the one hierarchical popup menu. All operations, except those requiring user input (enter name of new window or new code), are therefore achieved in one mouse operation.

6.3.3 FERAL's functions

FERAL's functions are a combination of those identified in system requirements and those identified during analysis. The core functions are presented here. See Appendix F for menu diagrams showing all the system functions.

(i) Database and co-ordination

1. **Database.** Easy and flexible formatting for entry of text data into the system is possible. Text data which includes documents, code, instances, memos and notes, can be stored and edited. Various search and retrieval mechanisms are available outlined below.
2. **Video data support.** Video data can be accessed, coded, and retrieved by time code. Control of a Panasonic video player with a RS-232 interface is provided. Basic operations are play, fast forward, reverse, pause, and stop. Other operations are setting the internal counter value of the video player and playing a segment of video from one counter value to another.
3. **Temporal support.** A document can be sequentially indexed because each line in a document's text can be given a numerical value. This provides an ability to index a document according to time and provides facilities for co-ordination described below.
4. **Co-ordination.** Co-ordination of data, of similar or different types, that refer to the same event is provided. Video and document text can be co-ordinated using the numerical indexing of the document corresponding to the counter values of the video player. Co-ordination between documents is achieved through sequential numerical indexing of lines within documents. Each line in a document can be given a numerical value as long as it is greater than the value of the previous line. In this project's case study of psychodrama data, co-ordination between text and video data types and between session and commentary data are facilitated.

(ii) Facilities to assist analysis

1. **Coding mechanisms.** Document text data can be encoded with multiple, independent, concurrent encodings. A document is encoded by applying a code from a code set which then creates an instance in the instance set (unique to that combination of document and code set). Any length of text unit can be encoded and the code name can be of any length. Codes and instances can be created, deleted, and modified. New codes can be created when encoding a segment of document text, from the code set, or when changing the name of an instance. Code(s) are renamed and deleted through the code set which automatically updates all instances. Instance(s) are renamed or deleted through the instance set.

2. **Memoing.** Memos can have multiple links to any number and combination of document text segments, codes, and instances. A source can have any number of memos. Memos can contain up to 30000 characters.
3. **Annotation.** Notes can be attached to windows (in their info menu). Free, unattached note windows can be made.
4. **Folders.** Memos, notes, and folders can be organised into folders.
5. **Dating of objects.** Creation and modification dates are attached to windows providing simple auditing and system closure.
6. **Search and retrieval mechanisms.** Document text can be searched for memos, text strings, number indexing, characters, and lines. Codes can be searched for attached memos and instances of code(s) within one or more documents. Several text searches and word frequency counts can be done for documents and instances across a whole working system (see Appendix F for details).

(iii) Facilities supported by a flexible interface

1. **Different types of analysis.** As outlined in chapter five there are a number of potential analysis uses a flexible interface can be put to. The specific uses are dependent on individual user needs and preferences. The ways the flexible interface was used during analysis of this study's data are discussed in section 9.3.
2. **Training facilities.** A training system can be built on top of and access a FERAL application with its raw and theoretical data. A training system can be constructed by arranging different windows and adding note windows that can function as fields for trainers to give information, instructions, and exercises and for students to give feedback.
3. **Ease of upgrading and further development of FERAL.** Adding new developments, such as integrated conceptual mapping can be done without modifications to the interface.

Chapter nine discusses how useful FERAL's interface and functionality were for the analyses tasks.

6.4 Discussion of FERAL

This section discusses the limitations of the current version of FERAL and potential future developments.

6.4.1 Limitations of FERAL

There are a number of limitations with the current version of FERAL.

- **Appearance of menus sometimes slow.** Due to the dynamic instantiation of variables and the need for calculating all possible menu options before the popup menu hierarchy can be shown, production of popup menus is not always immediate

for current medium performance machines. For example, the popup menu for a segment of text must, among other things, search all windows in all areas to find if there are any memos linked to the selected segment of text and sort all codes in any code set in the active area.

- **No multiple highlight.** No more than one text segment can be highlighted at one time. This results in flashy behaviour at times and increased difficulty in following through an operation.
- **Menu too big.** If a menu contains many options and/or options have long names, such as names of codes, then the menu may fill up the screen and navigating the menu hierarchy becomes difficult. One solution is to replace the end of long menu items with '...'
- **Multiple selections difficult.** A disadvantage of putting all options in a hierarchical menu occurs when multiple selections are needed. This occurs in FERAL in the 'font' facility, for example, changing a window's font to bold, underline, and size 12. Using the popup menu, three menu selections are required, which is unsatisfactory compared to the ease of completing the same task using a modal dialogue box with all options displayed.

6.4.2 Potential future development

The long term aim for FERAL is a sophisticated system to assist research and training. The major developments needed are:

- **Sophisticated search and retrieval.** More sophisticated text and code searching of documents where codes and text strings can be combined in multiple ways using Boolean operators is needed.
- **Conceptual mapping.** Laying out concepts graphically and showing their interconnections can assist in the manipulation of ideas and formulation of theory. A comprehensive conceptual mapping facility for FERAL would include an ability to draw boxes and connecting lines, a maintenance of logical connections between the conceptual map and the data (e.g., the system understands this box called 'code A' refers to code A), and an underlying logic engine that provides intelligent linking in the maps. Optimally, different kinds of links in the maps would be provided. An initial taxonomy for types of links is:
 1. Categories, classes, kind of, types
 2. Components, part of, consists of, whole/parts
 3. Instance, i.e., specific in time or space
 4. Analogy, with different degrees of goodness of fit where 100% is a synonym
 5. Antonym, opposite
 6. Symptoms of, indicative of, e.g., a tidal wave is indicative of an underwater earthquake

7. Causes, results in
8. Sequential in time, comes before/after
9. Parallel process, concurrent.

Links may also be assigned attributes and weights and have the range of cardinality of one to one, one to many, or many to many.

- **Training facilities.** Increasing the facilities for training is needed. Currently trainers have the ability to arrange the interface and use text fields. Research would be needed to ascertain the features most required.
- **Quantitative facilities.** Providing statistical support, e.g., for testing intercoder reliability would be useful. FERAL already provides useful features for investigating intercoder reliability, such as, a flexible interface so windows can be arranged to suit the task, multiple independent code and instance sets, and free note windows to place instructions and user feedback.
- **Video facilities.** Digital video offers the potential for powerful and sophisticated video control and editing. However, digital video of a quality suitable for analysis tasks is available only on expensive equipment. When this technology becomes more accessible, then FERAL could integrate with an existing digital video suite.
- **PC version.** A version of FERAL for use on PCs is needed to make it accessible to most users.

The minor developments that have not yet been implemented are given in Appendix E.4.

Decisions about whether to include certain developments have not yet been made. These potential developments are:

- Give an option for displaying code mark-up in a document's text. One implementation option is to use coloured, inter-leaved, repeated text to show codes. Another approach would be to change the contents of the instance set. Rather than displaying the indexing information (line and character numbers) as at present, the actual text content could be displayed.
- Use doubleclick for the most common operation in a menu.
- Allow different types of note windows.
- Provide logging where every operation is put in a log window with the time and date.
- Allow discontinuous time code on a document. For this project's case study, this would allow comments that are global or not in sequence.
- Get all codes for a specific time period. Currently this requires two steps - highlight text for time code and then get codes.

FERAL is a new system that has only been used for this project's analysis. Feedback from demonstrations to different groups, including computer system developers, qualitative researchers, and psychodramatists (Carter, Patrick & Deane, 1995) has been

very enthusiastic and positive. Computer system developers have been impressed by the interface. Qualitative researchers also like the interface and the ability to incorporate video and temporal information. Psychodramatists have focused mainly on the training potential of FERAL with the collected commentary and video data which is probably a reflection of the majority being trainers rather than researchers.

Chapter Seven

Data Collection

The first section of this chapter describes the filming of three psychodramas while the second section describes the collection of expert commentary on the videotaped psychodramas.

7.1 Psychodrama filmings

Three group psychodrama were conducted and videotaped. Each filming is discussed in detail. Approval for the filmings was obtained from the Massey University Human Ethics Committee and the application for approval is presented as Appendix A.

7.1.1 Filming one

The first filming of a psychodrama session was done at the Massey University television production studio on Monday afternoon, September 5, 1994. The objectives were:

1. To video record a typical, unrehearsed psychodrama session lead by an experienced practitioner for use in the project
2. To explore procedural, ethical and technical aspects of video recording psychodramas
3. To involve Dr. Max Clayton and the psychodrama community in the research project.

7.1.1.1 Background to filming one

In August 1994 the author attended a psychodrama training workshop lead by Dr. Max Clayton and Ms. Chris Hosking. The author's purpose was twofold, firstly, to increase his understanding of psychodrama process through direct participation as a group member and trainee director. Secondly, to meet Dr. Clayton, ascertain if he was appropriate expert participant for this study and if so, introduce the project to him in the hope of involving him. These objectives were achieved.

Gaining Dr. Clayton's involvement was to be of great benefit to the study because of his mastery of psychodrama methods and his high standing in the psychodrama community. Dr. Clayton has been a psychodrama trainer for 23 years with over 40,000 hours of participation in psychodrama sessions. He is the founder and director of the Australian College of Psychodrama and a prime mover in the foundation of the Australian and New Zealand Psychodrama Association. He is also considered an outstanding exponent of the psychodrama method and technique. He is the principle trainer of many leading psychodrama directors and writers (Williams, 1989). His use of the psychodrama method and expertise is therefore well worth capturing.

Dr. Clayton's high standing and influence in the psychodrama world also meant that obtaining his involvement and commitment to the study would greatly stimulate interest from the psychodrama community. Involvement from members of the psychodrama world was essential to the success of the project for many reasons. Other psychodrama directors needed to be motivated to make the commitment to come to Palmerston North and be willing to be filmed. The higher the expertise and experience of these directors, the more desirable they were as sample directors. However, often directors of this calibre were extremely busy and may only be on short visits to New Zealand. Commitment and time was also necessary from psychodrama experts who would provide commentaries on the psychodrama process from the videotaped sessions. Dr. Clayton's involvement was also seen as important to motivate members of the psychodrama world to become involved as group members in the filmed sessions.

Dr. Clayton showed great interest in the project and made himself available for leading a psychodrama session to be filmed on September 5th, 1994. He was also available at several other times to provide his comments on the video recording of the session. Taking this opportunity created momentum for the data collection stage of the study.

7.1.1.2 Participants in filming one

There were nine participants including the director, Dr. Clayton. The majority of group members had two to three years involvement with psychodrama. The video production team consisted of three cameramen and one technical director. The author was also present and had overall management of the event.

Experienced participants were required for ethical and procedural reasons. Experienced participants know the kinds of processes involved in psychodrama sessions and so are in a better position to give informed consent. They are also more likely to feel safer than inexperienced participants under the added pressures of being videotaped. A feeling of safety increases the possibility that participants can enter into the session in a typical

manner without incapacitating fears of judgement and anxiety. A limitation of having such experienced participants was that the session was not representative of groups with inexperienced participants.

There were various motivations for participating. All participants were interested in experiencing Dr. Clayton's directing. Three participants hadn't participated in psychodrama for a period of time and wanted to get in touch with the method again. Two participants were interested in the process of video recording a psychodrama session. Four participants were interested in the study and wanted to contribute and be part of the process.

7.1.1.3 Procedure of filming one

The technical requirements were discussed with the technical director from Massey University TV Production. The event was advertised by Dr. Clayton on psychodrama training workshops he ran in Christchurch and Wellington in order to interest prospective participants. Ms. Paddy Paltridge and the author also contacted several experienced psychodrama people to discover their interest in being group members. The author discussed the event with all participants except one.

In the days prior to the filming, participants were given information sheets and consent forms (see Appendix B) and asked whether they had any questions. Consent was given by all participants for the video to be used for research purposes. Dr. Clayton directed the first psychodrama for approximately one hour. After a short break, he talked about the first drama and then directed a second psychodrama for about one hour. He talked briefly about this drama and then video recording ended. Participants filled out the anonymous consent form for further uses of the videotape (e.g. training purposes; see Appendix B) and clarification was provided where requested. One participant requested some terms for giving consent for all further uses. Participants then filled out the signed consent forms. Participants were given a range of assessment forms and because of lack of time requested to complete them in their own time.

7.1.1.4 Ethical issues in filmings

Ethical concerns are discussed under the areas of fully informing participants, the impact of the psychodrama session on the participants, the impact of the video recording on the participants at the time of recording, the future use of the video recordings, and the confidentiality of the content of the video.

(i) Fully informed participants

Information sheets were given to each participant several days before the event. The information sheet outlined the study, the requirements for the participants, the process of the video-recorded session, the nature of the video recording, the future uses of the video recording, and the measures taken to ensure confidentiality. With the exception of one person, the author also discussed with every participant individually any concerns they had (the difficulty that arose from this is discussed in section 7.1.1.7). The procedure of giving the information sheets to the prospective participants well before the event allowed them time to think of any concerns or question with out time pressures.

(ii) Impact of the session

Possible adverse effects of the session were lessened by using participants experienced in psychodrama process. This restriction ensured that participants knew well the kinds of processes they would be involved in during the session. The director's vast experience and careful attention to safety for the participants also decreased the possibility of adverse effect from the therapeutic content of the session to members. Follow-up counselling was also available to all participants.

(iii) Impact of the video recording

The director produced the drama so that the action was captured easily by the video cameras. This ensured that the cameras remained outside the area of activity and lessened intrusion upon the participants. The directors confidence in his ability to contain the drama and its production probably helped free participants from any concerns.

(iv) Future use and confidentiality

The two uses for the videotapes, research and training, have different audiences. Two separate consents were sought because participants had different concerns about the two audiences. The initial use for the videotape is in research for experts to describe the session by viewing the videotape. This first use is essential to the research. In this use, the audience is a highly selective and restricted group. Details of the measures to ensure confidentiality were given in the information sheet. Consent for this use was required prior to the videotaped sessions so ensuring that the video would be used for the essential purpose of research.

The other use of the video is for training and general research. An information sheet and consent forms for these uses were provided post-session (see Appendix B). Because the audiences for these uses were potentially larger and unrestricted, participants were

likely to have greater concerns about confidentiality. By placing this consent as a post-session activity, participants knew what occurred in the session and so were in a better position to evaluate if they wished to give consent or not. Discussion with participants confirmed that they would be somewhat reluctant to give consent to these uses before the session when they did not know what would happen.

There were two sets of post-session consent forms. The first set were made anonymous so that no participants felt any pressure from fellow participants to give consent. As well as consent and no consent, an option for conditions of consent was provided. This gave participants the opportunity to set their own terms of use. For example, that they view the video and have any parts deleted that they wished. If any one person refused consent, then the videotape would not be used for that purpose. If all participants gave consent on the first anonymous form, then the second consent form identical to the first except that it is signed was given.

Technical personal were requested to sign a confidentiality agreement as shown in Appendix B.

7.1.1.5 Technical procedures for filming one

The technical objective was to capture the events clearly while minimising interference in the psychodrama process. A professional video production team was chosen so that quality would be maximised. This consisted of three camera operators and one technical director. Their studio was used so that lighting, sound and camera facilities were of high quality. However, the studio area was a little smaller than what is typically available for a psychodrama session.

There were four sound inputs; one radio microphone for the director, one radio microphone for the protagonist, one directional microphone on one of the moving cameras and an omni-directional overhead microphone was added for the second drama. Three cameras were employed; one distant fixed camera that panned the whole scene and two moving cameras that were closer to the stage area and to each side. Initially participants were seated in a semi-circle facing to the front of the stage. A quad splitter was used to output the three video sources onto one videotape. A time code generator was used to output synchronised time code for the four video channels.

7.1.1.6 Results of filming one

Participants were able to enter into the psychodrama process and two psychodrama dramas and the director's commentaries were successfully video recorded. Participants consented for the videotapes to be used in research and, with the exception of one

participant who wished to first view the videotape, consent was given for the videotapes to be used for further uses such as training. This consent was given after the participant viewed the videotape.

Four videotapes were produced; one for each of the three cameras and one videotape (a quad-split) containing each camera shot in a quadrant with one quadrant blank. Technically, the sound and video quality of the videos was satisfactory for use in the knowledge elicitation phase of the study. Technical and procedural issues and improvements that were identified for subsequent filmings are discussed below.

7.1.1.7 Discussion of filming one

(i) Advertising for and choosing participants

Recruiting participants familiar with psychodrama necessitated contact with the local psychodrama training institute, in this case, the Wellington Psychodrama Training Institute (WPTI) and its sub-branch in Palmerston North. Dr. Clayton also stated that the institute be involved in the project or else he was not interested in being involved. However, the Palmerston North group considered incorrectly that psychodrama director trainees should have preference for being participants. The author failed to communicate clearly that the event was research and not connected to training and so was under the control of the author. Those advertising future filmings need to be clear that the decision about who is to be involved rests with the researcher. Part of this decision process involves discussion between every prospective participant and the researcher. This is to ensure that participants are as far as possible fully informed and to filter out anyone who has major reservations or is not considered to have sufficient resources should events during the psychodrama require further counselling work.

In this filming, the one participant with whom the procedures were not discussed individually prior to the filming was the one person who gave conditional consent to the video being used for further purposes. Subsequent discussion showed that her main concern was a desire to be involved in the study in the future, rather than concern about any ethical or safety issues. Discussion with this participant prior to the recording would have allowed understanding and resolution before the video recording.

Clearer indications that this filming was research and under the control of the researcher was even more necessary when Dr. Clayton is involved. Because of his high standing, members of the institute did consider it to be institute business, and this combined with unknown agendas and possible anxieties of creating a good impression, necessitate that the researcher be absolutely clear about the purpose and procedures of the event.

Subsequent to the filming, the author met with the WPTI management team and discussed the project. WPTI's concern was that trainees should be given a chance to participate. The author was happy to accommodate this wish as trainees fitted the criteria well. The author stressed that the work was research and that choice of participants was under the control of the author. WPTI accepted this and requested confirmation of who would participate.

(ii) Consent forms and procedures

The procedure of pre- and post-session consent forms was effective. However, the information sheets for subsequent filmings needed be sent to participants well before the video recording so that they had plenty of time to think about any concerns and have informal discussions without time constraints so that any concerns would be encouraged to emerge. Viewing for research purposes needed to include people other than experts and to be done without the presence of the author. An additional consent form containing these modifications was sent and signed by all participants. The post-session information and consent form was simplified so that participants need only consent to the video being used for one other purpose (training) instead of three. Because of the lack of time and the length of the assessment form, assessment was not done immediately as originally intended. Although participants took the assessment forms away to fill out in their own time, only one participant completed this task. The assessment form for subsequent filmings was replaced with a simpler one.

(iii) Technical concerns

The technical procedures were effective. Use of a quad splitter (having all camera sources present on one tape) was a major breakthrough on previous methods where much important information is lost through editing to one camera shot. Three cameras were used with one fixed as a group shot and the other two mobile to pick up specific action. The intention was that one camera would get the protagonist and the other camera would get the director. However, because the two close-up, mobile cameras were not co-ordinated with each other, this did not always occur. The solution for subsequent filmings was to have the author in the control room viewing all camera shots and co-ordinating the two mobile camera operators through headsets. Some pre-filming discussion with the cameramen of what type of events may take place would also be beneficial.

Sound was very good, despite some minor difficulties. There was some delay in attaching the radio microphone to the protagonist. The director's radio microphone was also faulty for a period of time. For the second session an additional omni-directional microphone from the ceiling was added to provide greater coverage for sound. However,

the directional microphone picked up noise when the camera it was mounted on was moved. Lighting was poor and participants for subsequent filming needed to be informed that white clothing was inappropriate because of light reflection.

The time code was synchronised across all four tapes (three cameras plus the quad-split) by being written onto audio channel two of all tapes. However, to achieve synchronisation using the equipment available, a range of SVHS and Beta cameras were used. This was complex and resulted in many errors, including the timecode not synchronised amongst all tapes, timecode displayed on the quad-split tapes different from other tapes, and timecode on two quad-split tapes different from each other. For subsequent filmings, to minimise complexity for the technical director and the possibility of problems, the best approach was to have only the minimum requirement, that is, the timecode written on to the quad split tape. Other timecodes can then be added later if necessary.

(iv) Summary

This first filming event achieved its objectives of producing a video recording of a realistic psychodrama for future use, involving Max Clayton and the psychodrama community in the research project, and investigating procedural, ethical and technical aspects of the video recording of psychodramas. The study confirmed most procedures as useful and identified where improvements could be made. Careful planning by the author, sensitivity of the psychodrama director to participant needs, and the participants' experience in psychodrama and willingness to enter into the work resulted in two typical and realistic psychodrama sessions. Use of a professional recording studio and technical expertise and the attentiveness by the psychodrama director to the recording needs resulted in video footage of sufficient quality to be meaningful for later stages of the research.

Improvements for subsequent filmings that were identified were:

- Better co-ordination with the psychodrama training institute so that they were clear about the research objectives and that the researcher controlled participant advertising and selection.
- Individual discussions between researcher and every participant prior to the filming so that any concerns would surface.
- Simplified second consent form concerning training purposes.
- More flexible conditions for viewing of the video for research purposes, i.e., experts could view the video without being in the presence of the researcher.
- A brief, concise assessment form of participants' ratings of the session that could be completed on site.

- Improved lighting.
- Researcher control and synchronisation of moving video cameras so that protagonist and director were always captured.
- Simplified video recording in that no synchronised time code was needed and SuperVHS recordings were adequate.

7.1.2 Filming two

The second filming occurred on the afternoon of February 7, 1995 at the Massey University Television Production Studio. The purpose was to produce a high quality video tape of a realistic and typical psychodrama session with expert psychodrama directors and to test out the changes suggested by the first filming.

7.1.2.1 Procedure of filming two

Procedures were modified to incorporate the improvements identified in the first filming and listed above. The procedures are described below under the headings of pre-filming, technical, and filming.

(i) Pre-filming

Two highly experienced psychodrama directors from Australia, Mr. Francis Batten and Ms. Julia Howell, were in New Zealand giving a series of psychotherapy workshops. They were keen to be involved in and contribute to the study. The author contacted the Wellington Psychodrama Training Institute (WPTI) and informed them of the filming.

There was quite a comprehensive consultation with Mr. Batten and Ms. Howell. They viewed the videotape of the first filming to see what it was like, whether they liked it, what changes could be made in the filming, etc. Ms. Howell wanted to know whether the participants were warmed up to their own issues, were inquisitive about the filming or the directors, or if there were other agendas. They suggested a debriefing for the technical staff. Ms. Howell suggested the experts in the information sheet be named, however, this was not possible as they were not known at the time. She also felt that the assurance to have anonymity whenever possible was not likely, so probably it was better to change the clause in the information sheet to "given the nature of video and psychodrama it is not possible for participants to be anonymous."

Information sheets and consent forms were modified from those used in filming one to incorporate the suggested improvements (see Appendix C). They were sent out well before the filming and the author spoke with each prospective participant individually. One person was omitted as her aim for participation was to role model for people and also she had a concern about the heat. One prospective participant wanted to talk to

others and participants about the filming and this was encouraged. She was concerned about the use for training, the difference between learning experientially and learning using video, and manipulation of data by academics to put psychodrama in a bad light. She was happy with the training institute using the video. I pointed out that she can delay consent, view the tape before deciding, and/or put conditions on use. She decided not to participate. Two other people pulled out suddenly just before filming.

Mr. Batten had 16 years experience with psychodrama, 12 years as a trainer, and had been president of the Australia New Zealand Psychodrama Association. Ms. Howell had four years as a certified psychodramatist with the British Psychodrama Association. Other participants averaged over three years experience with psychodrama. Two participants had been involved in the first filming.

(ii) Technical

Three microphones were used. Two omni-directional microphones descending from the ceiling and one radio microphone for the director. Directional microphones were not considered necessary. Three cameras were used, one unmanned panning camera, and two manned roving cameras co-ordinated by the author from the viewing room through headsets. The objective being to always capture the actions of the director, protagonist, and any important interaction.

Seating and camera positions were slightly different from the first filming in that the panning camera was higher, closer and unmanned, and the seating although still in a semi-circle was facing the back right hand corner of the stage. This was to give the viewer of the video the same position as group members. It meant that the close camera on the right had to move a little more to the right to capture group members facing the back of the stage. There was quite a lot of discussion between the author, the two directors and the technical personnel about optimal positioning. Options discussed were the first filming set up, the one used, and the same as the one used except the panning camera located behind the stage. However, this was not possible because it could not be moved back far enough to cover the whole stage area. The panning camera was also tried unsuccessfully from the right of the stage. Careful attention was paid to lighting.

(iii) Filming

Filming began early afternoon. The author presented the event, re-iterated the procedure, and handed out consent forms. Participants filled in the consent forms and the author collected them. Ms. Howell directed the first session for approximately one hour. The author gave out session evaluation forms and participants filled them out. There was a short break. Mr. Batten directed the second session for about one hour. The author gave

out the anonymous consent form, collected and checked the forms. The author then gave out the consent and session evaluation forms, participants filled them in, and the author collected them. The different forms are shown in Appendix C.

The session evaluation form was an adaptation of Stiles (1980) session evaluation questionnaire which is a standard evaluation used in other psychotherapy studies. The session evaluation was conducted to provide:

1. Indications of how the session was considered by the participants. A highly regarded session would indicate a session lead by an expert practitioner who performed to an expert standard. Such a session could be used for the next phase of expert commentary. A poor session would be rejected for commentary and an outstanding session might be selected for additional focus and/or commentary.
2. One means of standardising session evaluations across different psychodrama sessions both within the sessions in this study and between this study's sessions and other psychodrama sessions.
3. Data for questions arising from future analyses. For example, are tense sessions more valuable.

7.1.2.2 Results of filming two

Output was two SuperVHS quad-split tapes, one with time code displayed and one without. The quad-split tape with no time code has a slow line going through it and it is missing the very end of the first drama. As individual tapes of every camera were not recorded as requested, there was no way to reproduce that tape. However, the other tape was sufficient for the study's purposes.

Results of the session evaluations are shown in tables 7.1 and 7.2. The tables show the average ratings across participants for each of the twelve dimensions; table 7.1 shows the averages and table 7.2 gives a graphical representation. The dimensions and their end points are shown in table 7.2 as they were presented to participants. Notice for some dimensions it is clear which end is 'desirable', for example, in the dimensions 'good - bad' and 'valuable - worthless'. However, for some dimensions it is not clear which end is more 'desirable', for example, the dimensions 'difficult - easy' and 'relaxed - tense'. For this reasons, the dimensions could not be put in one direction with the 'highest' score at one end.

Dimensions	Session A	Session B
1	6.00	6.30
2	1.33	1.33
3	5.00	4.67
4	2.00	2.17
5	5.33	5.00
6	3.17	2.50
7	6.17	5.00
8	2.50	2.83
9	5.00	5.33
10	3.17	2.50
11	5.67	5.00
12	2.67	3.83

Table 7.1 Average ratings for filming two

Dimensions	1	2	3	4	5	6	7
1	bad					A B	good
2	safe	AB					dangerous
3	difficult				B A		easy
4	valuable	A B					worthless
5	shallow				B A		deep
6	relaxed	B	A				tense
7	unpleasant				B	A	pleasant
8	full	A B					empty
9	weak				A B		powerful
10	special	B	A				ordinary
11	rough				B A		smooth
12	comfortable		A	B			uncomfortable
	1	2	3	4	5	6	7

'A' represents the first session and 'B' the second session.

Table 7.2 Average ratings for filming two - graphical

7.1.2.3 Discussion of filming two

Tables 7.1 and 7.2 show that participants rated the sessions highly. Comments also reflected high satisfaction. This indicated the sessions were examples of expert directing and could be used for expert commentary.

All of the suggested modification identified from the first filming lead to improvements. However, the sound quality of this filming was poor. The seating arrangement was not optimal for easy capture of group members while they were seated, with the arrangement used in the first filming probably the best. The technical director also failed to produce video copies of each camera as instructed. Both sessions had group exercises

where more than one person was talking. At least two of the three couples were captured, however, the sound is not always distinct.

In the second drama, the protagonist shows a real person in a situation that occurred in a negative way. Because there is a possibility that viewers will know this person or that this person will see the video, the protagonist wanted the name and any reference to the situation removed. The audio track was blanked at these points without any important loss of meaning.

The filming was successful in achieving its purposes. A video was produced of realistic psychodramas and modifications to procedures were tested and found to be effective.

7.1.3 Filming three

The third filming occurred in the afternoon of February 13, 1995 at the Massey University Television Production Studio. The purpose was to produce a high quality video of a realistic and typical psychodrama session using another expert psychodrama director.

7.1.3.1 Procedure of filming three

(i) Pre-filming

Ms. Chris Hosking was in New Zealand co-facilitating a series of training workshops. Initially, she was reluctant to make a video. However, upon viewing the video of the first filming, she agreed. Ms. Hosking, the director, had 13 years experience as a psychodramatist and five years as a trainer. Six group participants had an average of three and half years of psychodrama experience. Two camera operators, a technical director, and the author were also present.

(ii) Technical

Procedures and studio set up were very similar to filming two. Seating was again in a semi-circle, however, it was to the right side of the stage area. This enabled individuals to be captured more easily and more fully than the seating arrangement of filming two. The camera arrangement was the same, except the third panning camera was a little higher. Video recording was also the same except that separate video recordings of each camera shot were produced.

(iii) Filming

Filming began early afternoon. The author presented the event, re-iterated the procedure, and handed out consent forms. Participants filled in the consent forms and the author collected them. Ms. Hosking directed the first session for approximately ninety minutes

in which there were four small psychodramas. The author gave out a session evaluation form and participants filled them out. There was a short break. Ms. Hosking directed the second session for about one hour in which there were two more short psychodramas. The author gave out the anonymous consent form, collected and checked the forms. The author then gave out the consent and session evaluation forms, participants filled them in, and the author collected them.

7.1.3.2 Results of filming three

Five videos were output from the session. One VHS for each camera and two SVHS from the quad splitter, one with time code displayed and one without. Table 7.3 shows the average scores from the evaluation form for participants in all dimensions and table 7.4 shows the averaged scores placed on the spectrum that the participants used.

7.1.3.3 Discussion of filming three

Tables 7.3 and 7.4 show that participants rated the psychodrama sessions highly. Individual comments also reflected a high satisfaction. This indicated the sessions were examples of expert directing and could be used for expert commentary.

The quality of the videotapes was good. However, some minor faults occurred, such as the top right moving camera is a little dark, the quad-split video-tape with time code displayed is in CCIR format, and sound quality is poor with a hum in the second half of the filming. These deficiencies were a function of lack of attention by the technical director. Having a competent and diligent technical director and a good relationship with him or her and the researcher is important for achieving good quality in the video-recordings. The third filming achieved its purpose of producing a high quality video recording of realistic psychodramas.

Dimensions	Session C	Session D
1	6.43	6.57
2	1.43	1.57
3	4.57	4.43
4	1.86	1.71
5	5.14	6.14
6	1.86	2.29
7	6.29	5.43
8	2.14	1.43
9	5.00	6.00
10	3.00	2.29
11	6.14	5.00
12	3.14	3.00

Table 7.3 Average ratings for filming three

Dimensions	1	2	3	4	5	6	7
1	bad					CD	good
2	safe	C D					dangerous
3	difficult			DC			easy
4	valuable	DC					worthless
5	shallow				C	D	deep
6	relaxed	C	D				tense
7	unpleasant				D	C	pleasant
8	full	D	C				empty
9	weak				C	D	powerful
10	special		D C				ordinary
11	rough				D	C	smooth
12	comfortable		D C				uncomfortable
	1	2	3	4	5	6	7

'C' represents the first session and 'D' the second session.

Table 7.4 Average ratings for filming three - graphical

7.1.4 Results of participant ratings

Table 7.5 shows the average participant ratings for the sessions in filming two (A and B) and filming three (C and D). This table provides some comparison between the sessions in the two filmings.

Dimensions	1	2	3	4	5	6	7
1	bad					ABCD	good
2	safe	ABCD					dangerous
3	difficult			DCB A			easy
4	valuable	DC A B					worthless
5	shallow				BC A	D	deep
6	relaxed	C	BD	A			tense
7	unpleasant				B D	AC	pleasant
8	full	D	CAB				empty
9	weak				CA B	D	powerful
10	special		DB C A				ordinary
11	rough				DB	AC	smooth
12	comfortable		A D C B				uncomfortable
	1	2	3	4	5	6	7

Table 7.5 Average ratings for filmings two and three - graphical

7.1.5 Discussion of filmings

While there were not enough participants or sessions to warrant any statistical calculations, the data clearly shows that all dramas were rated highly. The first filming

was not assessed using the session evaluation form, however, feedback and post-filming comments also reflect high satisfaction.

Technical procedures were successfully refined over the filmings. While the videos produced are adequate, none of the videos achieve the highest quality in all dimensions of sound, lighting, and action capture. This is largely due to insufficient planning and care by the technical director. Time code was written on to the quad-split tape so that expert commentators were able to indicate the time period they were commenting on.

All participants consented to the videos being used for all uses. This was not entirely unexpected due to a range of reasons including; pre-filming individual discussion with the author, comprehensive information, confidentiality measures, the pre- and post-filming consent format, sensitivity of the psychodrama director to participant needs, and the participants' familiarity with psychodrama.

Three filmings of four psychodrama directors and ten psychodramas were produced from this stage of the data collection. This was considered an adequate amount of data from which multiple expert commentary could be generated given the time constraints of the project. One of the advantages of FERAL is that data can continue to be collected and integrated into the FERAL application for psychodrama.

One concern was that all the sessions were the first meeting of a group and so not representative of group meetings at their different stages of development. Groups go through developmental phases with the first phase lasting for the first several meetings and having a focus on safety, judgement, and assessment (Yalom, 1995).

7.1.6 Transcription of filmings

Text transcriptions of the video-taped sessions were necessary to assist analyses and add functionality to the psychodrama system developed on FERAL. For reasons of accuracy, to minimise monetary cost, and a desire to get familiar with the data, the author transcribed the videotapes. Transcription took approximately 70 hours for the seven hours of videotapes.

7.2 Expert commentary

The objective of this stage of the data collection was to obtain multiple commentary from experts⁹ viewing the video-recorded psychodramas.

7.2.1 Expert commentators

Trainers attached to psychodrama training institutes were targeted as commentators. Table 7.6 shows details about the participating commentators' experience. The average length of experience as a director was 15 years and as trainer it was 8.5 years.

	name	director (years)*	trainer (years)*
A	Max Clayton	28	25
B	Chris Hosking	14	6
C	Richard Fowler	18	3
D	Evan Sherrard	16	16
E	Katerina Seligmann	14	4
F	Don Reekie	12	8
G	Estelle Mendelsohn	9	2
H	Paddy Paltridge	19	4
I	Robert Crawford	19	4
J	Marilyn Sutcliffe	12	7
K	Julia Howell	5	1
L	Francis Batten	13	13
M	Mike Consedine	11	9
N	Paul Baakman	7	3
O	Tom Wilson	21	19
P	Robert Brodie	26	12

Note: 1. * as of July 1996

2. The figures given do not necessarily relate to certification by any psychodrama authority.

Table 7.6 Expert commentators and their experience

7.2.2 Commentary procedure

The details given here cover the important aspects of the usual procedure followed in obtaining commentaries. Important variations are described in the discussion section.

(i) Equipment

The equipment needed for obtaining a commentary was:

- A videotape of one of the psychodramas and a video player.

⁹ The term 'expert' was applied by the author and was not necessarily a term that the 'experts' themselves would use for themselves.

- An audio recording device. In most cases, this was an ordinary size cassette player. When the author was present, the audio recording device included an easy to operate hand-held microphone which had stop, play, rewind, and record switches for convenient recording.

(ii) Procedure

Participants were the expert and usually, but not always, the author. Table 7.7 shows when the author was present. The viewing was almost always at the commentator's place of residence. The author introduced the study and its purposes to the commentator. An information sheet was provided (Appendix D) and experts filled in a viewer's confidentiality and consent form (Appendix D).

The expert was instructed to comment on:

1. The important things going on for the group, protagonist, and/or director
2. The core psychodramatic principles
3. Anything interesting.

Usually the expert was asked to pretend they were talking to someone fairly naive in terms of psychodrama. The expert was also instructed to say the time code they could read off the screen when making a comment.

Experts	Dramas									
	Filming one		Filming two		Filming three					
	1	2	3	4	5	6	7	8	9	10
A	s w	s w								
B	o w				s a	s a	s a	s a	s a	s a
C	o w									
D	o w		o w						o w	
E		o w								
F		o a			o w					
G					o w	o w	o w	o w		
H									o w	o w
I					o a	o a	o a	o a	o a	o a
J			o w	o w						
K				o a						
L			o a	s a						
M				o w						
N				o w						
O					o a	o a	o a	o a		
P		o a								

Note: s = commentary on self directing a = alone
o = commentary on other directing w = with the author

Table 7.7 Expert commentary on the different psychodramas

7.2.3 Commentary details

Table 7.7 shows the psychodramas each expert commentated on. For each psychodrama the expert commentated on, the table indicates whether the director of the psychodrama was the same person as the expert commentator or someone else and whether the commentary was done alone or with the author present. There are four commentaries on each drama, except for drama four which has five commentaries and dramas three and ten which have only three. Each drama is commentated on by the director of the drama.

Most commentaries were approximately one hour long. Expert A's commentary on his own direction was longer at three hours. Typically a comment referred to about five minutes of video. Transcription from the audiotapes was done by the author which had the advantage of increasing his familiarity with the data. The time taken averaged about four times longer than the actual audio commentaries. With the commentaries totalling about 26 hours, the transcription took about 100 hours.

7.2.4 Discussion of commentaries

All psychodramas were commentated on to increase the variety of data. Another option would have been to choose one psychodrama, perhaps the one that received highest ratings from participants. However, because there is such variety in what happens in a psychodrama, any one session would not include all elements.

Most commentators found the quad-split videotape useful and that, just as in real life, they could decide what to focus on. This gave them the ability to become involved and absorbed in the session. Viewing at the commentator's place of residence was advantageous because it increased convenience, maximised the amount of time available for reviewing, and created an informal, relaxed atmosphere.

Experts commentating with the author absent enabled the experts to comment at their convenience. However, there were several difficulties. Commentary done with the expert on their own tended to have less detail and sometimes the time code information was omitted. Sometimes there was trouble getting the commentary done (i.e., it was given a low priority) and in one case the audiotape was blank and in another case it was lost. It appeared that having the author present meant the task would get done and that technical considerations could be attended to.

Another decision was how many passes or entire viewings commentators would have of the same psychodrama. Multi-viewing and time to reflect could well increase the amount and quality of information as one expert believed happened with him. Most commentators viewed the video once only. One expert wanted to see the whole thing

through, mark certain places, and at the end view the appropriate part of the video and make comments. Several other experts also wanted to go back to view again certain places on the videotape. However, the inconvenience of the recall and playback functions of the manual video player being used severely inhibited this approach. The videotape player with RS-232 interface that FERAL could control was not used because of the inconvenience of porting it to the expert's residence. The quality and content variations produced by allowing different review methods is a potential area for future research in the KE domain.

The three guidelines for what experts should comment on were written down for experts commentating on their own, but verbally explained by the author when he was present. To maximise consistency across commentators, guidelines would have been best written down for all. The guidelines were designed to be open, with the experts encouraged to describe in their own terms and at their own pace what they were seeing and perceiving. The objective was to minimise any manipulation or leading of the expert in their comments by the author and/or his questions. However, some influence was unavoidable. With the guidelines creating a focus on interesting, important and core aspects, there was more emphasis on general descriptions rather than detailed ones. Weber and Poon (1994) believe that stating the project aims can influence the style and quantity of descriptions. So with most commentators being trainers and having an understanding that the system and data will be developed for use in training, their commentary is likely to have an educational tendency.

The nature of the relationship between the author and the expert could also possibly influence what the expert focuses on. For example, one expert knew the author socially as a friend and her comments seem to be more personal compared to other commentaries. This could also reflect her friendship with the director and one of the auxiliaries on the videotape. Two experts were concerned that their comments were not critical or be perceived as critical. Another expert was concerned that her comments might be negatively evaluated by peers. Transcripts of their commentaries were given to these experts to assist them in deciding whether to give consent for their use and the use of their name. To reduce any risk of negative evaluations the commentary in FERAL was made anonymous.

Participants were not asked to comment if they viewed the videotape of the psychodrama they participated in. Studies show that video review can have powerful effects and that it needs to be structured carefully to be constructive (Dowrick, 1991). Shotter (1983) also comments that the knowledge that subjects will evaluate themselves through viewing a video recording influences behaviour at the time of video-recording.

Participant commentary would require careful planning and structuring and was not part of this research.

7.3 Transfer of data into FERAL applications¹⁰

Three FERAL applications were created, one for each of the filmings. Each system contains the filming transcription and the commentary transcriptions of that filming. Another option would be to combine all data into one system. These divisions were in order to ensure a clear separation between data and results from each filming and to have a faster system response time from FERAL. The ability to integrate areas and their windows from different applications and to transfer analysis data between the different applications using FERAL's note windows means data from different applications could still be combined if necessary.

Time code indexing of video transcripts was begun in February 1996. A facility in FERAL was developed to make this process as simple and quick as possible. While the video is being played, the user simply clicks on the line of the transcription that corresponds to the current action on the video and the time code value for that line is set from the counter value of the video player. The set-up procedure to achieve this is:

1. Connect the video player to the computer via the RS-232 cable
2. Put the appropriate video in the player
3. Set the counter of the video player to correspond to the time code value etched on the video using the 'set' function on FERAL's video control palette
4. Set the mode of the document containing the transcript to 'auto tc'.

Using this facility the time code index can be created in one non-stop playing of the video.

Time code indexing for commentary, however, can not be automatic and has to be put in line by line. In most cases, this was simply a matter of entering the time code stated by the commentator. However, the commentators did not always give a time code. In these cases, the best estimate was made based on the content of the videotape and the prior and subsequent timecodes. Another difficulty was that because FERAL only allows sequential indexing, comments that referred to something earlier than the previous comment or comments on the whole session could not be indexed.

¹⁰ A FERAL application is a FERAL system containing a set of data. FERAL is a Hypercard stack and therefore the code for the program is not separate from the data.

Chapter Eight

Analysis

This chapter describes the analysis of five psychodrama topics. First, section 8.1 describes some initial analysis tasks done and section 8.2 outlines the analysis method which emerged from the analyses.

8.1 Initial analysis tasks

8.1.1 Fine-grain manual encoding

In May 1995, expert D's commentary on session two of filming three was manually encoded (see Appendix G). The aim was to investigate the possibility and usefulness of building a descriptive language of the psychodrama process from a bottom-up analysis of the commentary. Coding was therefore attempted at an atomic level from which more macro concepts and processes might be constructed.

For one of the categories explored, *director actions*, all instances were listed and grouped (see Appendix G). It was envisaged that these would be refined and an initial operational definition of *director actions* would be formed with the aid of the video data. However, the process was discontinued because the approach was found to have serious limitations.

Firstly, the coding and organisation of categories was tedious when done manually. Even with ideal computer support, the micro approach suffers from a poor return on time spent. It was self-evident that a great deal of time and effort would be needed to code and organise categories for all the commentary data, yet there was no guarantee of significant findings. Some guidance on what to focus on was needed. Within such a focus, micro encoding could be done if required.

Secondly, there was a potential problem in the stage following the micro, fine-grained approach, namely to form operational definitions with the aid of the video data. Behaviour, especially non-verbal behaviour, could be broken down into increasingly fine units. The question was - What is atomic? Dowrick (1991) reports a three year study of

a 4.5 second video recording of a family interaction at the dinner table. Consideration of these issues lead to the use of a macro-encoding approach and the development of FERAL to assist it.

8.1.2 Macro encoding of commentaries

Starting in May 1996 the author 'macro' encoded all commentaries. The author attempted to create one code for each comment indicating its main point using the commentator's own words for the code name. FERAL's ability for an unrestricted length for code name assisted this. A set of codes was created for each expert commentary. An example of code creation is the code, 'mirroring allows protagonist to let go outdated functioning' which was generated from the comment:

This moment the protagonist is laughing, quite a lot at herself. And I think one reason this is coming about is that as she's acted different roles within this scene, there has been a mirroring process. She's been able to see herself as in a mirror. She's become increasingly self aware and recognises that she has changed and developed quite a lot. She can let the past image of herself go a little bit more realising the ridiculousness of this way of functioning that she used to have. Moreno was known as the person who brought laughter to psychiatry. So in psychodrama we are aiming, constantly really, to bring about a situation where you can look at yourself and let go of those aspects of your functioning that are useless and outdated and a bit ridiculous without shame and to warm-up or to get on with those aspects of your development that really are going to take you towards the future that you are wanting to create.

The process took about four hours for an average length commentary of about one hour. Appendix H shows the codes created from the encoding of the commentary by expert B on filming three.

Using the commentators' words for the codes attempted to make the code more closely reflect the content of the comment. However, the degree to which the code reflected the comment depended on the understanding of the comment by the author and his ability to summarise it. The set of codes were therefore subjective and would vary if a different person did the encoding. The codes were more 'referential' than 'factual' and any user of them would need to be aware of the danger of confusing the two as described in section 5.3.2. However, using the commentator's own words and creating different sets of codes for each commentator meant the codes could be closer to the content than would be the case if using one code set for commentators. Although one code set has the advantage of being able to group similar comments from different commentators.

The benefits of the process of macro encoding were:

- The creation of a rough indexing system for future analytical and training uses. The three outputs of the process (codes, instances, and memos) can all be searched and related data retrieved thus aiding analysis. For example, getting comments on a particular topic.
- The opportunity for the author to get familiar with the data.
- The creation of memos and notes containing:
 1. Links to important concepts that are not indicated in the code name.
 2. Interesting and/or significant issues not explicit in a macro code. For example, a portion of commentary may talk about *unpredictability* without using that word and/or without it being the main point of the comment and therefore not reflected in the macro code.
 3. Any ideas, thoughts, or insights.

8.1.3 Frequency counts of terms

Frequency counts for the occurrence of six terms in the commentaries were completed. Terms for three of the four techniques (doubl*¹¹, mirror*, role rev*) and the one core principle (spont*) which received high consensual agreement as important in the psychodrama literature (see chapter three for details) were counted. Two other terms (concretis* & maximis*) were counted for interest and possible future analysis. These counts were done to give a rough indication of whether the commentators also considered the terms important and worth commenting on. Table 8.1 shows the frequency counts for the occurrence of terms in the commentaries for the three filmings.

filming ->	commentaries			codes		
	one	two	three	one	two	three
concretis*	32	19	25	14	8	15
maximis*	20	21	19	8	9	8
mirror*	44	20	47	6	6	18
doubl*	45	86	16	10	31	5
role rev*	58	31	32	17	11	10
spont*	89	23	46	16	4	18

Table 8.1 Counts of terms in commentaries and codes

¹¹ '*' is a wild symbol for any number or type of letters; for example, 'concretis*' includes concretise, concretises, concretised, and concretisation.

The left half of the table shows the frequency counts for the terms occurring in the commentaries for the three filmings. The right half of the table shows the frequency counts for the terms occurring in the macro codes for the commentaries for the three filmings. There are two advantages for counting the occurrences of the terms in the macro codes. First, if it occurs in the code, then that indicates it is the main focus of the comment, whereas that is not necessarily so when the term simply occurs in the commentary. Second, the count for code only counts the term for one occurrence in a commentary, even if the commentator uses the term several times in the comment. For example, in the comment below “doub*” occurs six times, but only once in the code for the comment which is “director as double”.

Now the director has obviously still wanted more of the inner world of the protagonist coming out and is pursuing her desire to have a double by now offering to double herself. This is a fairly unusual step for a director to also act in this auxiliary role. Of course the director is the chief auxiliary for the protagonist in the drama and often some of the directions come from the director being or doubling the protagonist, but at a distance, usually not classically as close as this is. So the director has assumed the posture, the classical position of the double slightly to the rear and to one side of the protagonist. The director directing from the position of double is often done at a greater distance with the director tuning in across physical space. I'm interested in this manoeuvre here because the director will now not have the spatial distance to see the protagonist from a different perspective. She's gotten into the classic double posture. We'll just see what happens.

The table shows that all terms are used frequently in commentaries on all filmings and that they appear in macro codes. This indicates that commentators consider all the terms important and worth commentating on. 'Concretis*' and 'maximis*' are marginally lower in comparison to the other terms.

Initially, the counts were done using a function in the document menu, so that counts were done term by term, commentary by commentary. Using this method, calculating frequency counts for four of the 26 commentaries took over one hour. A facility in FERAL was therefore developed to count a list of terms for all documents in a system. This completed the task in less than a minute with the same results. Different options were also created for displaying the information.

8.2 Analysis method

A method for investigating a topic using EXCOVE-collected data on a FERAL system was developed during the first topic investigated, *doubling*. During the development of the method different approaches using FERAL's search, retrieval, memoing and annotating facilities were trialled. The most useful and efficient procedures were chosen and further facilities were developed in FERAL to automate the process as much as possible.

The analysis method is:

1. Get all commentary concerning a concept. The ways this can be done using FERAL and its facilities are: scanning through the instances, reading the commentaries and attaching relevant information to a memo, and searching for text in documents. The specific facility designed to accomplish this task is the 'hits + line in note' facility which is under the background menu 'documents > find text' (see Appendix F.1 Background menu). This facility does a text string find for a set of text strings (the concept under investigation plus any synonyms) for all documents in a system. For each hit, the facility puts the reference information (document name, line number, character numbers, and time code numbers) plus the content of the line (in the case of a commentary, this is the comment) in a note window. We will call this window *source*.
2. Optional. Browse existing memos and include any relevant information into *source*. The memo window facility 'sources > content of' may be used to gather all data the memo is linked to.

For each occurrence in *source* do steps 3 to 6:

3. Remove any irrelevant information from *source*.
4. Create a note window (called *table* here) and in *table* create a taxonomy that summarises the information in *source*. The two note windows, *source* and *table*, can be arranged and sized so that they are side by side thereby facilitating easy referencing and travel from one to the other.
5. View the segment of the video the comment refers to and in *table* describe any behaviour on the video relevant to the comment.
6. Add in *table* any relevant information from comments for the same time period that have not already been compiled. The *find time code* facility in the document window menu can be used to find the corresponding commentary. *Table* can be moved around to the areas in which the commentaries reside if necessary.

Note 1. Steps 3 to 6 are not strictly sequential and can be done in different orders.

Note 2. As steps 3 to 6 are repeated for all occurrences, the structure for the taxonomy in *table* will evolve. Different versions of *table* can be kept by creating a new *note* window for each version.

7. Analyse the information in *table* with the aim of formulating an initial description of the concept being investigated. Convergence and divergence between different commentators may both be useful for forming the description. Comments for a specific event that have high consensual agreement between commentators are important, as are differing opinions. Coding the content of *table* may also be of assistance in formulating a description. This can be done through a new document window with *table* as content and a new code set.
8. Optional. Integrate any existing theoretical knowledge in to the description.

Note 3. As steps 7 and 8 are done various types of information may be generated, such as, topics for more detailed data collection and investigation, questions, etc. *Note* windows are useful for capturing this information as it emerges.

8.3 Analyses of psychodrama topics

Five topics in psychodrama were chosen and investigated (introduced in section 1.2.5). The first three topics of *phases*, *doubling*, and *mirroring*, are essentially theory confirmation in that they are investigations of theory originating in the psychodrama literature. The topics *unpredictability* and *action* are data driven and more theory exploration in nature.

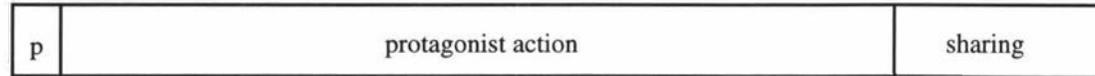
8.3.1 Investigation of psychodrama phases

Figures 8.1 to 8.3 show information relating to phases or stages of a psychodrama on filmings one to three respectively. A time line is given at the top and bottom of each figure. The first rectangular box (event box) marks out the events that occur which were identified by the author observing the videotape of the session. The following boxes (commentary boxes) mark the time period for any related commentary which is summarised on the right hand side of the box. Each moment is identified with a unique capital letter.



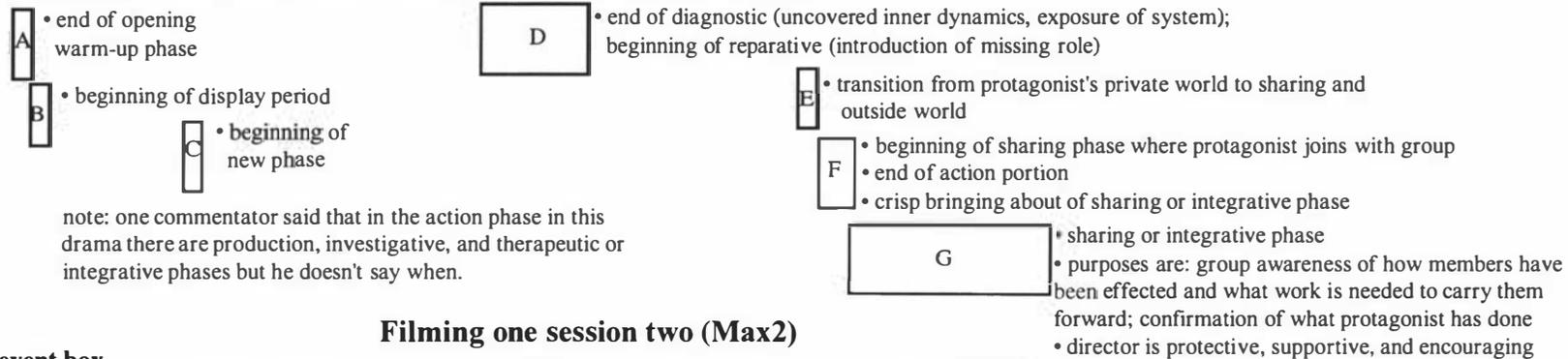
Filming one session one (Max1)

event box (taken from the video)



p = pre-action; mainly group leader introduction

commentary boxes: (the boxes indicate the time period the comment refers to)



Filming one session two (Max2)

event box



commentary boxes:

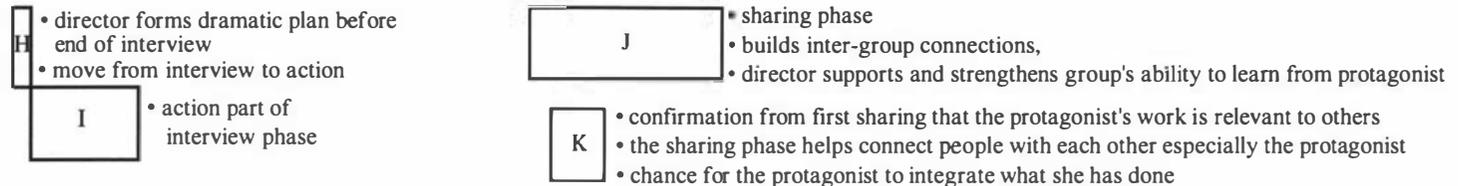
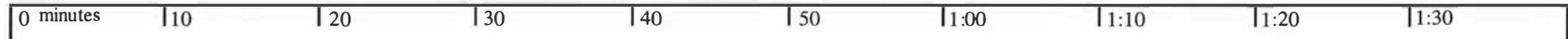
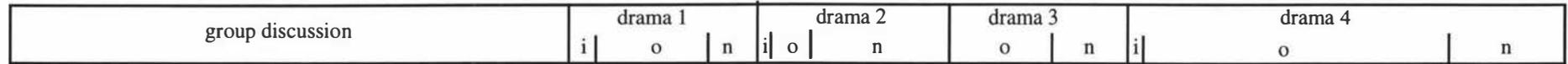


Figure 8.1 Phases for filming one



Filming two session one (Chris1)

event box



note: i = interview o = drama about old behaviour n = drama about new behaviour

Commentary boxes: (the boxes indicate the time period the comment applies to)

L

- critical moment in group warm-up phase where group purpose defined as work not socialising.

M

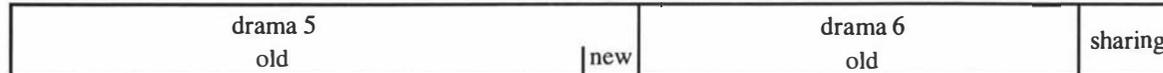
- warm-up phase complete (2)
- transition to work on stage; relaxed movement because often tension associated in going from sitting and talking to action

N

- getting display of what protagonist's thinks and feels using role reversal. Not making interventions or analysis

Filming two session two (Chris2)

event box



- There is no commentary on phases.



Figure 8.2 Phases for filming two

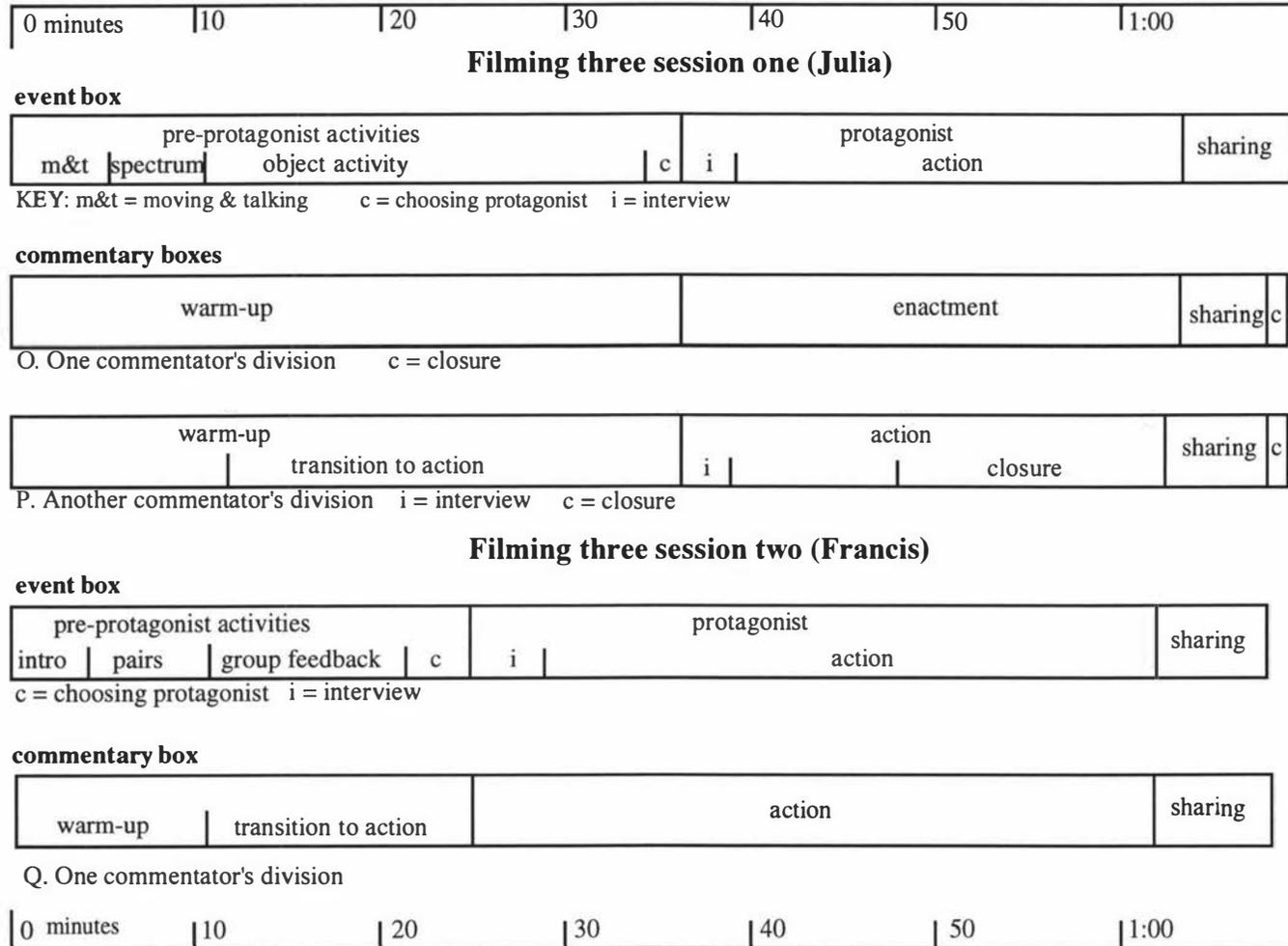


Figure 8.3 Phases for filming three

The following findings were summarised from Figures 8.1 to 8.3 and grouped under the headings, 'pre-protagonist', 'protagonist-centred action', 'post-protagonist', and 'other aspects'.

(i) Pre-protagonist

- The event boxes for all sessions (except filming two session two) show that there is a period prior to action with a protagonist.
- Comments A, B, H, M, O, P and Q all indicate a division between some sort of beginning phase to a protagonist-centred action phase. The indicated time for all these commentaries corresponds with the event box divisions.
- This period is referred to as: warm-up phase (A, M); warm-up (O, P, Q); and group warm-up (L). P and Q also indicate a period called 'transition to action'. P shows the 'transition to action' period is within warm-up and Q shows that they are separate.
- The event boxes show there is variety in duration of this phase, specifically; 3, 17, 35, 0, 36, and 25 minutes.
- The event boxes also show there is great variety in what occurs. Events include; director introduction, group discussion, director interviewing of protagonist, moving and talking, forming a spectrum, choosing and acting as an object, choosing a protagonist, talking in pairs, and giving feedback to the group.

(ii) Protagonist-centred action

- The event boxes for all sessions show that there is a period involving action with a protagonist.
- Comments A, B, H, M, O, P and Q indicate the beginning of this period and these correspond with the event box divisions.
- Comments M, P and Q indicate there is a transition between the beginning and action phases.
- Comments E, F, G, J, K, O, P, and Q indicate the end of this period and these correspond with the event box divisions.
- This period is referred to as: action (F, H, P, Q) and enactment (O).
- There are few comments on finer divisions within this period. One commentator on filming one session one says there are production, investigative, and therapeutic or integrative phases but does not say when they occur. There is some support for these divisions in the commentaries. Comment B talks of the beginning of a 'display period' at the very beginning of the action phase which would correspond with the production period. Comment D talks of the end of the diagnostic and the beginning of the reparative (corresponding to investigative and therapeutic respectively). Comment N talks of a time early in a drama where there is display with no interventions or analysis; this corresponds with a production period. Comment P indicates a period of closure at the end of the action period.

(iii) Post-protagonist action

- The event boxes for all sessions show that for all sessions, except filming two session one, there is a period involving the group sitting down and talking about their experience of the session (called 'sharing').
- Comments E, F, G, J, K, O, P and Q indicate the beginning and sometimes the end of this period and there is reasonable time correspondence with the event box divisions.
- The period is called 'sharing' except for comments F and G where it is also called 'integrative'.
- This period is where the protagonist transitions from their private world to the outside world (E) and joins the group (F).
- Purposes for the period are given as: group awareness of how members have been effected and what work is necessary to carry them forward (G); confirmation of what the protagonist has done (G); building inter-group connections (J, K); and a chance for the protagonist to integrate what they have done (K).

(iv) Other aspects

- Four out of six sessions have the director interviewing the protagonist. The interview is usually considered to occur in the action phase. However, in filming one session two, there is conflicting commentary (H & I) on when the interview occurs. The video shows a seated interview occurs in the first phase. In the action phase, a dramatic representation of what the protagonist is experiencing and the director's investigation of this with the protagonist occurs and is referred to as the 'action part of the interview phase' in commentary I. Comments O and P indicate there is a period of closure at the very end of a session.

Conclusions on investigation of phases

Analysis of the commentary and video data showed that there was good correlation between the three macro phases described in the literature and the phases in the video recorded psychodramas. The only sessions that did not have a beginning or end phase occurred in filming two. However, it can be argued that the two sessions in that filming are one session which was interrupted by a mid-session break.

If this argument is accepted, then there was always a beginning period, usually called the warm-up phase, that was clearly identifiable from the video data, and identified without contradiction by the commentary data. This phase sometimes involved action activities (in both sessions of filming three). Therefore, the name 'action' for the middle phase (both in the literature and in the commentary) is misleading and might best be referred to as 'protagonist-centred action'. The possibility of activities in the beginning phase, the variability in the length of the phases, and the variety of what occurs in each phase (for

example, what occurs during the warm-up phase and in what phase the director's interviewing of the protagonist occurs) all suggest a variety and flexibility in the application of psychodrama that is not always explicitly or clearly expressed in the literature.

There is high agreement on a protagonist-centred action period usually called the action or enactment phase. Within this there is some support for three different types of periods or activities, referred to variously as:

1. Production, display
2. Investigation, diagnostic
3. Therapeutic, integrative, reparative, closure.

These activities correspond most closely to Clayton's (1991, 1994) divisions and show similarity to Kipper (1992), as described in chapter three. Further investigation is needed to clarify if these divisions are replicable and useful. Questions concerning what situations and contexts they might occur in and whether more than one might occur at the same time also need investigation.

The data shows high agreement on the existence of the last phase of sharing which correlates well with the literature (see section 3.2.1). The commentary data offers some information on the characteristics and purposes of this phase.

8.3.2 Investigation of doubling

The results of steps one to six of the analysis as applied to *doubling* is shown in table 8.2¹². Table 8.2 shows there are 16 events where doubling is mentioned by one or more commentators. The first column indicates the filming the event occurs in and the time. The second column indicates whether the commentator(s) thought the event was doubling or had aspects of doubling and the number of commentators to say this. Columns 3, 4, and 5 are grouped under 'mechanisms' which was information gathered by viewing the video segments for this event. Column 3 lists who was the agent of doubling, column 4 gives the position of the agent relative to the protagonist, and column 5 briefly indicates what actions the agent was doing. Column 6 indicates the context of the event. The 'why is it doubling' column (7) lists any reasons the commentators gave for saying the event was doubling or like doubling. The 'functions and outcomes' column (8) lists information commentators gave on the purposes or outcomes of the event. And the last column (9) lists any miscellaneous information that seemed relevant.

¹² Various abbreviations are used in the tables in chapter eight: 'dir' = director, 'prot' = protagonist, 'aux' = auxiliary, and 'gm' = group member.

event	affinity to doubling	mechanisms (from video)			context
		agent	place	actions	
A. Chris1 at 48-51 mins	aspects 2 experts	dir	beside	imitates	beginning of drama
B. Chris2 2-4 mins	aspects 1 expert	dir	far	imitates	beginning of drama
C. Chris2 12 mins	is 1 expert	dir	beside	observes with prot no talk/initiative	prot is observing replay
D. Chris2 29-31	is 1	aux	beside	very friendly no talk/initiative	prot has chosen a closed role
E. Chris2 47-59	partly 1 out of 2	dir	beside	sits with prot	dir sits with prot in sharing
F. Max1 2-4	in one way 1	aux	far	repeats prot after role reversal	very beginning of drama
G. Max1 3-20	in one way 1	auxs	mostly far	mostly after role reversal	first half of drama
H. Max1 3-45	aspects 2 is 1	dir	beside and far	repeats words similar body directing	beside at: 7, 10, 11,15,17 minutes far at: 13, 36-38 minutes
I. Max2 146-148	unclear 1	dir	beside	observing not mimicking directing	first half of drama - explorative
J. Max2 207-209	acting as 1	dir	beside	observing copying posture directing	near end of drama - resolution
K. Max2 209-212	is 4	auxs	behind	copying walk	very end of drama - integration
L. Julia 42-43	is 4	dir	beside	somewhat mimics adds information	near beginning of drama - investigation
M. Julia 44-103	is 4	aux	beside	mimics adds information	throughout drama
N. Francis 156-247	is 1	dir	mostly far	mimics adds information	throughout drama
O. Francis 156-158	is 2 sort of 1	dir	far	mimics directs?	group warm-up
P. Francis 211-212	kind of 1	dir	far	talks	immediately pre-drama

Table 8.2 Commentary on 'doubling'

why is it doubling	functions and outcomes	notes
A. alongside, sees world as prot, companion	encourages, interprets, assists prot to get going, assists development of new role	
B.	dir offers suggestions so prot express & be aware	
C. supports	so prot feels connected	
D. alongside, companion		com says aux could have taken initiative like a double would
E. companion		
F. expresses himself to himself	builds up greater self-worth	also support and encourages, occurs again around 18 mins
G. accepting all aspects of self portrayed	increase in self-awareness, - acceptance, and -esteem	
H. offers insight, alongside, picking up body cues 2, tunes in and feels experience of prot 2 (is=1), adopts facial expression and body tension 2 (is=1)	greater self-acceptance 2, deepening of warm-up to role, allowing of new experience, dir gains information about prot	1. tune in = congruent with affect 2. com B dir tunes in with physical all the time, com D dir makes assessments and offers insights/interpretations from observations of prot
I. notices non-verbal, brings out unconscious, active listening	brings out to consciousness what is not conscious	attentive alone not doubling - A says dir is appreciating, P says verbal mirror and observes, F says attentive to mind and body
J. notices non-verbal, brings to awareness	brings to awareness, brings out more of what is in prot	this alone not doubling - A says making conscious, P says mirroring, F picks up
K walks as she walks 3, feels as she feels, strength and power of community	increase sense of identity, solidarity with others, fullness of experience, increase self-awareness 2,-acceptance, development of integration	1. solidarity & acceptance relate 2. doubling contains mirroring? which gives awareness, see E's comment
L. takes posture, beside	get more affective, bring out internal conflict	dir usually tunes in across space
M. uses verbal and physical cues to explore and expand, alongside 2, supportive, expanding	supportive, expanding 3, aux to dir, assists to clarify and discriminate, get another perspective, bring out unspoken subcon & fullness of inner world, assist internal reflection, assist prot to have good experience and anchor it	1. supportive and expanding are types 2. double is accepted 3. see "double Julia source" for further details on double's actions 4. changes from complimentary double to oppositional double at 50, projects counter role
N. plays prot's role	to clarify	other experts mention dir picks up nonverbal
O. right there in body, alongside totally 2, doubles visual and verbal cues, greatly interested	prot feels understood and accepted, deepens warm-up, allowing, dir expands, offers, plays hunches	1. others say: affirms and builds, mirrors physical 3, maximise -> brings out more and increases warm-up and sense of self
P. says unspoken fears	expressing unexpressed fears	others say protective and respectful 2

Table 8.2 Commentary on 'doubling' (continued)

It was reasoned that the events, and the commentaries for those events, for which **all** commentators said the event **was** doubling would be significant. The ‘affinity to doubling’ column (2) of table 8.2 shows there are three instances (K, L, M) of this type. These are shown as the first group of events in table 8.3. There are also five events where **one** commentator (out of four) says the event **is** doubling (O, C, D, H, N). These are the second group of events in table 8.3. The third and final group of events in table 8.3 list where **one or more** commentator(s) say the event **has aspects** of doubling. The information in table 8.2 was summarised into table 8.3 which was then used to assist analysis. Each of the three groups were analysed in turn. Before describing these analyses, an explanation of the columns in table 8.3 is needed.

affinity	event	mechanics		why event is doubling			functions and outcomes		
		close	adds info	close identity	supports	expansive	sense of identity	supports	expansive
all say is	K	x		x	x		x	x	x
	L	x	x	x					x
	M	x	x	x	x	x	x	x	x
one says is	O			x	x		x	x	x
	C	x			x			x	
	D	x			x				
	H	x		x		x	x	x	x
	N		x	x					x
one says like	A	x		x	x			x	x
	B						x		x
	E	x			x				
	F						x	x	
	G				x		x		
	I	x						x	x
	J	x						x	x
	P							x	x

Table 8.3 Summary of commentaries on ‘doubling’

The columns under the ‘mechanics’ heading of table 8.3 indicate whether the agent was close to the protagonist and whether the agent gave additional information that was not supplied by the protagonist. The second heading ‘why event is doubling’ summarises information from table 8.2’s column ‘why is it doubling’. The third heading ‘functions and outcomes’ summarises the information from table 8.2’s column ‘functions and outcomes’. The columns under the second and third headings of table 8.3 group and summarise information in table 8.2 into categories. The categories were formed according

to the best understanding and sensibilities of the author¹³. The categories and the comments or terms they represent and summarise were:

- *Close identity* for 'sees world as', 'tunes in', 'walks and feels as', and 'alongside totally'
- *Supports* for 'companion', 'community', 'connected', and 'solidarity with others'
- *Expansive* for 'brings out unconscious', 'brings out unspoken', and 'fullness of experience'
- *Sense of identity* for 'self-worth' and 'self-acceptance'.

K, L, and M are events which all commentators agree were doubling. The events were all different situations, namely; auxiliaries silently walking behind the protagonist, the director beside the protagonist mimicking the body behaviour of the protagonist and adding information, and an auxiliary beside the protagonist mimicking the body and adding information. Strongest support for a category being essential to doubling occurs when the category is present in the commentary for all the events K, L, and M. This occurs for the categories, close (mechanics), close identity (why event is doubling), and expansive (functions and outcomes). Support is also strong when a category is present for two out of three events¹⁴. This occurs for adding information (mechanics), supportive (why), sense of identity (functions), and supportive (functions).

An initial description of doubling based on this first group of events and the commentaries on them was formulated as: a double is in close proximity to the protagonist mimicking their expression so that a close and possibly merged identity is formed with the protagonist. There is expansion in that the protagonist is able to bring out the unspoken and/or unconscious and the protagonist is likely to receive support, that is, the protagonist is likely to feel self-acceptance and have a sense of companionship and community.

Next, the second group of events in table 8.3 and their commentaries were looked at. These were events O, C, D, H & N where one commentator said the event was doubling. This group of events where only one commentator (except event O which had two) said the event is doubling demonstrated a mixture of things. There was poor consensus and therefore lack of clarity on what constitutes doubling among commentators. There was support for all the categories given in the table being connected with doubling. However, there was mixed support for the description of doubling given above. Event 'O' had all

¹³ It is important to acknowledge that the researcher undertook a great deal of domain familiarity (described in section 1.2.1) to assist in these analyses and also to closer simulate the situation of the 'typical' researcher who might use FERAL and the data collected.

¹⁴ The absence of a category may not be because the category was not important, but simply because the commentator did not comment on it for this event. This is a limitation of open questioning. Further focused questions will be needed to validate the preliminary findings of this study's analyses.

the categories given above except the agent was not close. 'H' had all the categories including close, and so should be considered doubling (according to the description) but only one commentator considered it doubling. Other commentators either did not comment on the event or thought it was not doubling.

Perhaps there is something about 'O' and 'H' which excluded them from being doubling. In both 'O' and 'H', the agent was the director who maintained the role of the director, only engaging in 'doubling behaviour' (acts as though they are the protagonist) for a short period. However, in 'L' (which all commentators said was doubling) the agent was also the director, but in this event the director gave up the role of the director for a time period and engaged in 'doubling behaviour' for a time period. A refinement to the description was therefore the addition of, '*over a time period*'.

There were a number of events where commentators associated one category with doubling while the majority of commentators for that event mentioned the category but did not associate it with doubling. For example, in 'C' one commentator said the event was doubling because it was supportive, but other commentators just said the director was supportive without saying the director was doubling. In 'H' one commentator said it was doubling because the person tuned in and felt the experience of the protagonist and adopted the body expression and body tension (in order to gain information about the protagonist). Other commentators of the same event, said the director was tuning in, observing the protagonist's body language, making assessments and offering insights and interpretations. These commentators did not indicate a relationship with doubling. A conclusion from this is that one category (adds info, supportive, expansive) on its own is not enough to constitute doubling.

In 'O' a commentator said the event was doubling because the director was right there in person, alongside totally, and doubling verbal and visual cues. All other commentators said of the same phenomena that the director was *mirroring* the physical. There was therefore some confusion about what distinguished doubling from mirroring. Mirroring was investigated (described in the next section) and comparison between the data for doubling and mirroring provided additional insights for both and a clear, quantifiable way of distinguishing between them (described in section 8.3.4).

The third group of events (A, B, E, F, G, I, J & P) where only one commentator said the event was like doubling also showed a mixture of things. Event 'A' supported the idea that 'doubling activities' need occur over a time period to constitute doubling. This was because commentary on 'A' included all the categories constituting doubling (as proposed above), but the agent was the director who only engaged in 'doubling activities'

for brief periods of time within the more dominant role and actions of directing. It was proposed this activity be named 'pacing' to distinguish it from doubling.

It was postulated that doubling's main overall purpose was to create a merged identity and therefore the agent must be engaged in doubling for an extended period of time. For example, event M occurs for approximately twelve minutes. The purpose of 'pacing' is different and occurs over a shorter time period, typically a few seconds. In the data presented here, pacing was mainly used by the director to tune into the protagonist and gather information on what was occurring for the protagonist. Like doubling, this may also result in support and expansion, but there appeared to be no merged identity, at least from the author's observation of the video data and the lack of any commentary saying so.

In group three, there was a good representation of categories suggesting that these categories are necessary to constitute doubling. Apart from 'A', most instances had only two categories indicating the combination of categories is required to constitute doubling. The combination of categories was supported by other commentaries which talk of the categories on their own without any mention of doubling occurring. For example, the director being supportive (Expert C on Max1 44 to 46 minutes), expansive (Max2 158-200 minutes; interaction results in the unconscious becoming conscious), and mimicking (Expert's F and P on Max2 146-148 minutes).

Summary of investigation of doubling

The main characteristic of the commentary data was the lack of clarity about doubling. However, an initial description of doubling was constructed from the commentary and video data and is presented here:

a double is in close proximity to the protagonist mimicking their expression over a period of time so that a close and possibly merged identity is formed with the protagonist. There is expansion in that the protagonist is able to bring out the unspoken and/or unconscious and the protagonist is likely to receive support, that is, the protagonist is likely to feel self-acceptance and have a sense of companionship and community.

This description supports the most comprehensive description of doubling given in the literature (Kipper, 1986) and expands it by introducing the idea of doubling providing support and self-affirmation. The analysis suggested that certain characteristics traditionally associated with doubling, such as mimicking, expansion, and support, do not constitute doubling on their own. 'Pacing' was proposed as a term to describe the

behaviour of a director taking on the verbal and/or non-verbal behaviour of the protagonist for a short period of time.

8.3.3 Investigation of mirroring

All comments concerning mirroring were compiled into table 8.4. Table 8.4 shows 25 events that were commented on as being mirroring and three 'general' comments about mirroring that did not refer to any specific event.

event	#	actions	context	notes (mostly function)
A. Julia 7-9	1	dir repeats words	group warm-up	
B. Julia 38	1	dir repeats gesture	initial interview	prot becomes aware of prot's energy without interrupting prot's flow of thought
C. Fran 157-200	3	dir repeats gesture and words and adds and reframes	initial interview	makes person feel understood (doubling also talked about); increases sense of what's being put out (done with maximising); increases warm up and brings out more 2; under-emphasised in training; way to move forward when unsure; dir attempts to get a handle on what its like to live in her world
D. Fran 218	1	aux repeats acts & words	after role reversal	
E. Fran 236	1	all auxs repeat words	(suggested - wasn't done)	so moment of health is maximised and developed
F. Fran 250	1	auxs re-enact prot observes	(suggested - wasn't done)	for prot to become aware
G. Chris1 18-21	1	gm responds to another gm	group warm-up	mirroring = feedback on what another said
H. Chris1 32-33	1	gms express interest	group warm-up	mirroring = feedback, reflective about process (meta-comment)
I. Chris1 42-43	2	prot stands outside	re-enactment with aux as prot	acting thru mirroring can demo more and bring more change than talking; can now look at after developing experience from subjective inside; creates greater awareness, mindfulness, and appreciation of + aspects.
J. Chris1 49	1	dir beside mimics body	middle portion of drama	combined with maximisation assists prot to be conscious of body, aware of unspoken and quality of feeling in relationship with other
K. Chris1 55-57	1	prot stands outside	re-enactment	the prot enjoys the mirroring of the new self
L. Chris1 103-106	1	prot acts internal roles	prot shows role to auxs	self-aware; laughs at past functioning; realises has developed; lets go of useless functioning
M. Chris1 102-113	1	dir has same pace as prot	production	dir interviews prot for thinking in role
N. Chris1 106	1	dir meta-comments	drama	dir guesses about underlying
O. Chris1 120-126	1	prot talks to role	drama	mirroring = reflects - adult role reflects creative back to child role
P. Chris2 11-14	4	prot outside beside dir views re-act	3 re-enactments with aux as prot	prot to be more aware 3, be social commentator and analyser, observer; see with openness and not fear; ability to incorporate new; aux portray as accurately as possible; each aux brings out certain features; prot warms up to self and then interaction; dir beside to strengthen connection 2, supports 2 as sensitive moment

Table 8.4 Commentary on 'mirroring'

event	#	actions	context	notes (mostly function)
Q. Chris2 1-33	1	unspecified	throughout	mirroring needed when a new role developing cf, integrating existing role (last drama)
1 General	1			Psychodrama is visual so people see as in a mirror
R. Max1 2-4	1	aux repeats acts & words	beginning of drama	so prot can observe
S. Max1 4-20	1	dir repeats words	interveiwing for role	increase awareness; deepen warm-up to role; allow experience to well up (same effect as doubling)
T. Max1 26-28	1	dir comments to prot	middle of drama	the dir comments to prot on what he sees happening - postulates
U. Max2 145-146	1	auxs act as prot says	production	become aware; let go of judgement and anxiety about herself and enjoy; embracing of this aspect and unification not division of personality
V. Max2 156	1	aux re-enacts as prot	prot is in another role	re-enactment occurs at the same time prot is in another role
W. Max2 157	1	auxs repeat acts & words	acting as protagonist	the auxs are a group of people similar to the prot; prot gets a stronger experience of herself; an echo
X. Max2 209	1	dir mimics body at same time	near end of drama	another commentator E says double because active listening and brings out more
Y. Max2 210-212	1	auxs walk behind	very end of action	mirror because acting same way and so awareness; commentator F says double because community, identity, fullness; commentator P "doubles"
2 General	2			mirroring is basic technique; developing greater awareness of thinking, feeling, body and what other people around are doing; developmental when child sees others as separate beings and sees others doing the same back and so learns
3 General	1			Video can have a similar learning effect as mirroring

Note: The '#' column indicates the number of commentators who say the event is mirroring

Table 8.4 Commentary on 'mirroring' (continued)

The first stage of the analysis on mirroring was concerned with confirming the description of mirroring commonly given in the literature which is: the protagonist moves out of the action area and observes an enactment (usually a re-enactment) with an auxiliary portraying the protagonist (see section 3.2.3 for details). Review of the video data¹⁵ revealed eight occurrences of this type of phenomenon. These are presented in table 8.5.

Table 8.5 shows that four of the eight occurrences were commentated on as being mirroring (events I, K, P and V from table 8.4). However, four occurrences were not commentated on as being mirroring (given as events a, b, c and d in the lower half of table 8.5). The possible reasons why these events were not commentated on include:

1. Commentators did not think the event was mirroring
2. Commentators considered the event was mirroring but did not comment on it, possibly because they had already commentated on a previous occurrence of it.

¹⁵ researcher familiarity with the data through being present at the event and transcribing the videotapes assisted this review

Commentators were not asked to comment on important concepts, but were not asked to comment on every occurrence.

It is not possible to know the reason with the available data. Follow-up studies using selected video segments and a checklist of terms and definitions for experts to rate the video segments would probably provide the necessary clarification.

event	#	during event			immediate actions following the event			
		out-side	beside dir	# of re-enactments	talks about system with dir	talks to system	role reverses with sys	other
I. Chris1 42-43	2	x		1	x	x		
K. Chris1 55-57	1	x	x	1	x		x	
P. Chris2 11-13	4	x	x	3			x	
V. Max2 156	1	*		1				in another sub-system; responds to re-enacting sub-system
a. Chris1 52	-	x	near	1	x			new scene
b. Chris1 101	-	x		0	x	x		action carries into future for a short time
c. Chris1 121-124	-	x	x	1	x	x	x	dir interviews prot about system
d. Chris2 15	-	x	x	1	x	x	x	

Note: Instances a to d occurred but were not commented on.

An 'enactment' is a series of interactions between different roles.

* The protagonist was outside the re-enactment but not outside the action area.

Table 8.5 Occurrences of 'mirroring' as described in the literature

All the occurrences concurred with the mechanics of mirroring given in the literature (see table 3.3). However, 'V', was slightly different in that the protagonist was not outside the action area when observing the enactment but was part of another sub-scene. This suggested that the protagonist need not be outside the action area but just outside the enactment area.

Table 8.5 shows there were two commonalities across all the events, namely; the protagonist's observation of an enactment, and the protagonist being outside the enactment area. For example, the director was not always beside the protagonist as they observed the enactment. This suggested there was flexibility in the application of mirroring. All occurrences, except one were by the same director. However, the author has seen it used by a number of directors.

The right half of table 8.5 indicates the actions that immediately followed the event. In half the events the protagonist went on to either talk to the other roles or to role reverse with them. This offers some minimal support for the suggestion (see table 3.3) that mirroring results in the protagonist interacting with the other roles out in the action area.

The above analysis was done through investigating the video data. Investigation of the commentaries in table 8.4 on the top four instances in table 8.5 provided some support for the process of mirroring as described in the literature. The commentaries also provided additional information, namely that mirroring:

- Demonstrates more than talking
- Brings more change than talking
- Gives the protagonist an opportunity to view and observe
- Creates greater awareness, mindfulness, and appreciation of positive aspects
- Enables the protagonist to be a social commentator and analyser
- Enables the protagonist to see with openness and not fear
- Provides an ability to incorporate the new
- Helps the protagonist to warm-up to herself and encourage interaction with different aspects of the self (concretised roles).

Other comments indicated:

- Mirroring is done after developing subjective experience (the protagonist is in the roles)
- For the protagonist, seeing themselves may be a sensitive and vulnerable moment and so may need the director to be supportive. In the majority of the instances the director stands beside the protagonist suggesting that the director was doing that.
- No auxiliary can portray the protagonist totally accurately, but each auxiliary can bring out certain features.

However, an important question remained: Why were only four of the 25 events (commentated on as being mirroring in table 8.4) of the type outlined above? What were the other events? Examination of these events showed the majority were an agent 'mimicking' the verbal and/or non-verbal behaviour of the protagonist. Of these, there were two types, those where the agent 'mimicked' after a time period and at a distance from the protagonist (shown in table 8.6), and those where the agent 'mimicked' at the same time as the protagonist was acting (shown in table 8.7).

event	#	agent	distance	words	action	misc
A. Julia 7-9	1	dir	far	x		
B. Julia 38	1	dir	far		x	
C. Fran 157-200z	3	dir	far	x	x	adds & reframes
D. Fran 218	1	aux	far	x	x	
R. Max1 2-4	1	aux	far	x	x	
S. Max1 4-20	1	dir	far	x		
W. Max2 157	1	auxs	far	x	x	

Table 8.6 Mimicking at a distance

Examination of the events in table 8.6 showed that although they occurred in different situations, there were some commonalities, namely:

- The agents mimic after a time period
- The agents are at such distance from the protagonist that they can be seen by the protagonist
- The event increases the protagonist's self-awareness (taken from commentaries in table 8.4).

These features formed the basis for an initial description of this phenomenon, which was: a group member (most likely an auxiliary) repeats the verbal and/or non-verbal behaviour of the protagonist at a distance so that the protagonist can see the auxiliary. This is likely to increase the protagonist's self-awareness.

Review of the video data showed there were many more occurrences of this in every session than were commented on. The most common situation was where the auxiliary repeated the protagonist's behaviour after role reversing with the protagonist; this occurred more than a dozen times in all sessions except one¹⁶. This phenomenon also corresponds with mirroring as described by Clayton (1992) and Goldman and Morrison, (1984).

¹⁶Investigated by doing a text search for "reverse" in the transcript of the video data and then viewing the corresponding video segments to see if the phenomenon occurred. "Reverse" was used as the search target because a protagonist reverses roles at the instruction of the director who almost always uses the words "reverse roles".

At this stage, the analysis revealed two phenomenon that were both called mirroring, i.e., (a) the protagonist observing, from outside the enactment area, an enactment with an agent playing the protagonist; and (b) the protagonist observing at a distance, an agent mimicking some behaviour the protagonist has just performed. It was proposed that they be distinguished by different names to avoid any confusion. It was proposed that the second phenomenon (b) be called mirroring, because:

- In (b), the agent only mimics the behaviour the protagonist has just portrayed in one interaction. Compared with (a) which typically involves a number of interactions between roles. The agent's behaviour is therefore more likely to be a closer mimicking (like a real mirror) of the protagonist's behaviour.
- (b) occurs more often and in a greater variety of situations.

It was proposed that the first phenomenon (a) be called 'playback' for re-enactment or 'playforward' if the enactment goes into the future.

The remaining events called mirroring by commentators were then explored. Table 8.7 shows another group of four instances similar to those in table 8.6 (the agent mimicked the verbal and/or non-verbal behaviour of the protagonist). However, the mimicking occurs at the same time (or very close to the same time) that the protagonist was doing it and the agent was sometimes close to the protagonist.

event	#	agent	distance	mimics	notes
J. Chris1 49	1	dir	beside	body	assists prot to be conscious of body, aware of unspoken, and relationship with another
M. Chris1 102-113	1	dir	changes	pace	
X. Max2 209	1	dir	several feet	body	one commentator says is doubling
Y. Max2 210-212	1	auxs	close	body	all 4 commentators say is doubling

Table 8.7 Mimicking at the same time

'M' appears to be the director simply 'pacing' the protagonist using the same manner and emotional arousal as the protagonist. Such an activity was also called doubling by other commentators. In both 'X' and 'Y' one commentator said mirroring occurred. Yet for 'X' another commentator said doubling was occurring and for 'Y' all four commentators said doubling was occurring. 'J' also appears similar to doubling in that expansion results and the agent was close to the protagonist. The events in this category demonstrate a lack of

clarity amongst commentators on what constitutes mirroring and doubling and how to distinguish between them.

However, by looking at the two descriptions for mirroring and doubling, some differences were found. In both mirroring and doubling, the agent mimicked some behaviour of the protagonist, but the process of the mimicking differed in two ways; the distance of the agent from the protagonist, and the time between the protagonist's actions and the agent's actions. In doubling the agent was physically close to the protagonist, in mirroring the agent was at a greater distance. In doubling the agent mimicked at the same time and in mirroring the agent mimicked after a period of time. Section 8.3.4 discusses what implications distance and time might have for the protagonist's identification with the agent and the results of the two processes.

Table 8.8 groups instances in which the agent was giving some feedback and response to the protagonist on what they observed. These were unrelated to the types of mirroring mentioned above or in the literature. The author believed they were better described by other terms suggested in the 'suggested terms' column such as feedback, reflection, comment, etc.

event	#	agent	receiver	action	suggested terms
G. Chrisl 18-21	1	gm	group member	responds	feedback: feedback on what another said
H. Chrisl 32-33	1	gms	dir & group	express interest	meta-comment: feedback or reflective about process
N. Chrisl 106	1	dir	prot	meta-comments	guesses: dir guesses about underlying
O. Chrisl 120-126	1	prot	role (played by aux)	talks	reflects: i.e., adult role reflects creative back to child role
T. Maxl 26-28	1	dir	prot	comments	postulates: the dir comments to prot on what he sees happening

Table 8.8 Feedback and response

Summary of the investigation on mirroring

The data revealed there were two distinct processes both called mirroring. It was proposed that these be clearly distinguished by different terms, *mirroring* and *playback/playforward*. Based on prior writing (see section 3.2.3) and the analyses, *mirroring* is described as:

Mirroring occurs when a group member, usually an auxiliary, repeats the verbal and/or non-verbal behaviour of the protagonist at a physical distance from the protagonist such that the protagonist can see the behaviour. Mirroring is aimed at increasing the protagonist's self-awareness.

Playback or *playforward* occurs when the protagonist observes, from outside the enactment area, a re-enactment (playback), or an enactment into the future (playforward), in which an auxiliary portrays the protagonist. The process is agreed upon in the literature as described in section 3.2.3. The data confirmed this description. The other major finding of the analyses on mirroring was the confusion amongst commentators on what constitutes mirroring and doubling. This is discussed in the following section.

8.3.4 Comparison of doubling and mirroring

Investigation of the data in table 8.7 (described in the previous section) indicated that commentators used the terms mirroring and doubling to refer to the same phenomenon sometimes for the same reasons. A way was needed to distinguish between the two processes. There were difficulties in doing this by using the goals of the processes or interventions as criteria because both processes may have similar effects. For example, bringing out the unspoken, creating a sense of companionship and self-worth for the protagonist may result for both mirroring and doubling, although the commentary data indicates suggests this is more likely to occur in doubling.

A clearer and more easily quantifiable way of distinguishing the two processes was found in the descriptions formulated in this study for the two processes through the two dimensions; distance and time. Mirroring occurs after the protagonist's behaviour and at a distance from the protagonist such that the protagonist can see it; doubling occurs at the same time as the protagonist's behaviour, at a close proximity, and over a prolonged period.

What is needed now is feedback from experts regarding the validity of these distinguishing characteristics. Another study could investigate what 'a prolonged period' is. Further studies could also be done to check the acceptability of the descriptions for mirroring and doubling. Using selected segments of video containing mirroring, doubling, or neither, viewers could be asked to rate them according to various criteria.

It is interesting to compare the distinguishing characteristics for mirroring and doubling with work done by Landy (1986). He emphasised that distance from the protagonist to the role being interacted with is vital in determining the type of experience the protagonist has and the protagonist's identification with the role. He believed that at a

far distance there is separate identity and an objective experience of the role. This corresponds well with mirroring that occurs at a distance and according to expert commentary results in observation and self-awareness. Landy also postulated that at a close distance there is a merged identity and a 'subjective' experience. This corresponds well with doubling that occurs in close proximity and according to commentary results in a close or merged identity between protagonist and double.

8.3.5 Investigation of unpredictability

As discussed in chapter three, spontaneity is a core principle in psychodrama with little clarity about what it means and how it might relate to such things as the above topics of psychodrama phases and techniques. The frequency counts on the term 'spont*' also reveal high occurrence of expert commentary on spontaneity. However, it is a large topic covering many aspects and an appropriate investigation needs to begin with a focus on a key component.

As an initial focus, this investigation used one of the characteristics of spontaneity forwarded by the author - unpredictability. In section 3.2.4 it was suggested that the universe is constantly changing and every moment is new and therefore unable to be predicted or known about with surety. There were also many expert comments relating to this characteristic. The investigation was essentially data-driven, theory exploration and as such, the findings are preliminary descriptions that necessitate follow-up studies and validation.

Source data was compiled by scanning any appropriate memos (which were made by the author while doing other analysis tasks) and word searches of commentary of terms that might relate to unpredictability and the unknown. The terms included: '*known', 'intrigue', '*familiar*', 'anticipat*', '*predict*', '*expect*', and 'myster*'. The rationale for the choice of terms was to cast a wide net and then discard any comments that were not relevant. Notice that the opposite of unpredictability ('known', 'predictable', etc.) were also searched because commentary on them might impact on the understanding of unpredictability (for example, do commentators consider an element of predictability advantageous). Table 8.9 shows the data that was compiled.

event	context	notes
A. Julia 3	dir's initial introduction	(i) dir says she loves the unpredictability of psychodrama
B. Julia 10	dir's initial introduction	(i) dir says unknownness of psychodrama makes it exciting, dynamic, and frightening (ii) the unknownness is a vital aspect of psychodrama
C. Julia 47	dir gets prot to role reverse with the role of her partner	(i) the unknown heightens spontaneity (ii) the dir acts in a very effective magician role. She's surprised the protagonist by doing this role reversal. The protagonist is now in the position of her partner and is not quite sure about how to enter this interaction and is little off balance. This will heighten the spontaneity state and um something will occur from this that couldn't have been pre-meditated.
D. Julia 52-54	prot uses tissues to wipe sweat	(i) It's the unexpected, the tissues were originally planned to be available for possible tears. Its delightful.
E. Fran 146-148	the dir gets the group to do a warm-up activity of crossing a circle thru 1 point	(i) dir "Now at the moment you see you don't know what I'm going to do, so an interesting step into the unknown." (ii) stepping into the unknown is necessary in the group or drama. It also contains the metaphor of setting out on a voyage and arriving in a new position; spontaneity test (iii) dir in role of magician; makes people curious about what is going to happen next and heightens their awareness and alertness (iv) the dir has created a mystery and this heightens people's awareness and anxiety and excitement all in the one. There is a delight and a mischievousness in the dir.
F. Fran 152-153	the dir processes the warm-up activity	(i) dir "in that journey you got thrown into different, unexpected things. Um there were some decisions that come up, things you came up with that I hadn't thought of, so I kind of learnt from that, you modelled um other options."
G. Fran 206-207	dir ?	(i) the dir warms up prot to the idea that there's no predicted outcome as its never been done before.
H. Chris1 27	the dir instructs the gm ?	(i) the dir throws her into a new situation where she can't just keep functioning in her old way. Its not clear what a new solution will be here at this point, but first of all, I've thrown her into the unknown, I've given her a spontaneity test.
I. Chris1 39	the dir asks prot to make a sculpture	(i) this is a moment of spontaneity; it is a spontaneity test, when you take something old and you act with it in a new way. Other gms in being auxs are also in unfamiliar territory. They're having to let go their own ideas, <u>their ways of functioning and for a moment in time, act in this novel way</u>
J. Chris1 49	the dir gets prot to focus on body	(i) the action component will take the prot more into unknown areas.
K. Chris1 58-103	dramatisation of a visualisation	(i) we are looking to capture those moments that perhaps are slightly on the edge of someone's awareness, so that there is an interplay between the conscious, what one is familiar and conscious of thinking about, plus there is an imaginative and intuitive element that comes in. When this is dramatised, you find there is quite a creative experimental, explorative process that unfolds moment by moment. Here we see Marcia exploring from moment to moment. She hasn't got this scene all mapped out in advance. She's creating moment to moment. She's exploring her own expression as it unfolds.
L. Chris2 35-36	dir introduces after a short break	(i) dir looks to create intrigue which keeps people focused, involved, a sense of freshness alive where life's out of control, and stops people from approaching the situation too intellectually with an attitude of a know-all.

Table 8.9 Commentary relating to 'unpredictability' and 'the unknown'

event	context	notes
M. Chris2 35-42	dir interviews prot to find action point	(i) So I want to find out what that is, warm him up to that moment without him telling me what the content of the scene is about so that the, there is still a high level of intrigue left. We want him to act this, not to speak about it.
N. Max1 0-3	dir's introduction	(i) the advantages of approach where interpretations are based on the actions of a person is that one cannot predict in advance what is going to be said and done next. Results in alertness, respect, less prediction of what will happen next, tendency for gms to allow themselves to experience new things. (ii) intrigue creates arousal and anticipation.
O. Max1 5	beginning of action and use of gms as auxs	(i) creation of spontaneity tests where person is in a new situation and needs to develop ability for a new response is major and underlying to psychodrama. Auxs don't know what this means for prot, what they're going to do, its a challenge but not too much as there is safety concerns
P. Max1 3-20	the prot plays many roles	(i) My experience is that normally when a person is thrown into a new situation frequently and rapidly, (thru role reversal) there is an increase in spontaneity
Q. Max2 148-149	new scene with kids playing	(i) dir attempts to promote intrigue where suddenly she is thrown into a new scene where she's not quite sure what is going to happen next and can't stick with familiar habits. The intrigue increases her warm up/arousal
R. Max2 154-155	the prot is mirrored? & dir interview	(i) There's an element of surprise in dir's intervention which heightens dramatic tension, warm-up, amusement, and 'what comes next?' 'what is this about?'

**Table 8.9 Commentary relating to 'unpredictability' and 'the unknown'
(continued)**

The commentary data in table 8.9 was organised into three categories (general, situations, and results) and sub-groups within the categories (an upper case letter identifies the origin of the comment).

(i) General comments

- Going into the unknown is vital to psychodrama B; is necessary E; is major O
- There is a link between the unknown and spontaneity: The unknown heightens spontaneity A; related to spontaneity test E, H, I, O.

(ii) The situations in which unpredictability or the unknown can arise

- A variety of situations engender the unknown H
- Playing a new role after role reversal C; playing many roles P, R; the auxiliaries playing the protagonist's roles O
- Action takes person into the unknown J; acting leaves intrigue, cf. speaking M; actions not so predictable N; about to enter into action M; warm-up activities E
- Making a sculpture I; dramatisation of a visualisation K, Q
- A focus on the body J
- The director's introduction of the method L, N, A, B.

(iii) The results of unpredictability

- Increases likelihood of some new behaviour C; new response O; can't stick with old habits Q; let go of old ideas and ways of functioning I; learn other options from others F; ability to experience new things N

- Experimental, creative, explorative process unfolds moment by moment K; not planned out K; less prediction of what will happen N; stops intellectualising and attitude of a know-all L; invokes respect as not so predictable N.
- Heightens awareness E (2); brings imagination and intuitive with consciousness K; focused L; alert E, N; arousal N, Q, R; awareness, excitement, and anxiety all at once E; involvement L; dramatic tension R
- Delight D; amusement R; freshness where life's out of control L; curiosity E; anticipation N; heightens spontaneity A; increases spontaneity P.

The major findings that emerged from the commentary data were:

1. **Unpredictability is important.** There were many comments related to unpredictability indicating that it was an important topic for the experts. Commentaries also indicated unpredictability was important to a psychodrama.
2. **The connection of unpredictability to spontaneity.** Several commentaries related these two concepts but without explanatory detail.
3. **Action engenders unpredictability.** There were a large number of commentaries claiming action engendered a situation or sense of unpredictability and unknown. The most common type of action commented on that provided this was 'role playing'.
4. **Unpredictability encourages new learning.** One of the major results of unpredictability, as indicated in expert commentaries, was the opportunity to learn new behaviour. It was suggested that the person was unable to intellectualise their experience and recline in an attitude of know-it-all and this encouraged the letting go of old ideas and ways of functioning and the embracing of new behaviour. One commentator suggested this was achieved by setting up the protagonist so that they were unable to control in a complete or pre-determined way how they will act. Commentary by expert D on Max1 at 23 minutes described how a protagonist can be encouraged to give up his or her old inadequate ways and to find a new way through the director overloading the protagonist in some way,
this is pushing the protagonist towards a spontaneity state. His old and conserved ways of coping with this kind of situation are going to be overloaded and he's going to be thrust into a situation where the only way he can go will be to act spontaneously and creatively, i.e., he won't have had the chance, with a pre-determined planning, and pre-mediated um thinking about how he is going to act in this situation. He's just going to have to act with some degree of spontaneity.
5. **Unpredictability heightens awareness.** Commentators believed unpredictability and the unknown can increase awareness, focus, alertness, arousal, and anxiety.
6. **Unpredictability increases enjoyment.** Commentators mentioned unpredictability increases delight, amusement, freshness, curiosity, and spontaneity.

Many questions for future investigations can be generated from these initial descriptions by expert commentators. Some of the possible topics are:

- The identification and measurement of a state of unpredictability in a protagonist.
- The question of whether a state of unpredictability in the protagonist encourages learning and new behaviour. And whether there are other factors which are important, such as, the protagonist having a range of resources at hand so that they are not simply overwhelmed and/or paralysed by anxiety.
- The prior conditions that lead to a state of unpredictability.
- The question of whether a state of unpredictability enhances awareness.

8.3.6 Investigation of action

Action was chosen as a topic for investigation because:

- The high use of action is one component which distinguishes psychodrama from other psychotherapies
- There is a large amount of commentary relating to action
- The video data shows that in every session participants were involved in a variety of actions. There was a great deal of action (especially role enactment) in all sessions.

The investigation of action was data driven and an explorative process. Given this and the wide nature of the topic, the analysis results were general, tentative, and preliminary. The data compiled relating to action is shown in table 8.10.

event	comments
A. Chris1 warm-up	(i) the dir doesn't get the affect or body out
B. Chris1 21	(i) dir anticipates that greater expression and freedom of self revelation will be accomplished best through dramatic enactment.
C. Chris1 37-38 start of action	(i) when the thinking, feeling and action are all there, things move, people get very involved and passionate, and they get a lot of A
D. Chris1 40	(i) So having got the action and got the position in the sense of kinesthetically, then the prot's words have a greater mindfulness, a greater consciousness, a greater awareness of how she is being in the world in this way. Her body is the first clue and her words follow.
E. Chris1 40-43	(i) The dir wants to display what this prot thinks and feels thru role enactment and role reversal, to create her inner world outside on the stage and all can be involved. No interventions or analysis is made here (ii) acting is more likely to bring about change than just thinking. (iii) She's clearly back then in the present, the past has come forward into the present and its much more spontaneous, its much more alive than talking about it back there where a whole lot of dimensions just don't appear. Gms are involved.
F. Chris1 54-57	(i) a psychodramatist sees an individual as a system of roles within themselves. They aim to set out each aspect of the system and to act the relationship that is there between all the component parts (through role enactment and through role reversal.)
G. Chris1 57-103 interview	(i) This is the third protagonist that comes up. She refers to a race track which is an action cue. We're looking to capture the moment where someone is visualising a situation and dramatise it.
H. Chris1 113-140	(i) the protagonist has a scene in mind and the dir goes to that scene and places the action in space and in time. The more concrete the director becomes, the sharper the action becomes.
I. Chris2 0-2 beg of action	(i) The protagonist is sort of slumped forward and the director has invited her to maximise that, make more of it and to start to move around the stage, she wants to get a warm-up that includes action.
J. Chris2 14-16 middle	(i) prot is protecting against being sucked in; this abstract construct is concretised in active form.
K. Chris2 35-42	(i) the dir asking the prot to put himself in scene reduces the amount of reporting and gets the action into the present. (ii) My (dir) aim is to find out what's the starting point of the scene, what are the actions that Phil is warmed up to in that precise moment in time. I want him to warm up to that moment without him telling me what the content of the scene is about so that there is still a high level of intrigue left. We want him to act this, not to speak about it. (iii) as he starts to act his own role we see that in the flow of prot's speech he's much clearer, much crisper, whereas before he had set the scene, he was much more slowed down and uncertain. He starts to remember a lot more clearly and more things about the situation.
L. Chris1 100-104	(i) psychodrama is an action method. Participants have need motivation to do so in actions. Moreno said the act is primary, not the thought.
M. Julia 6 people place themselves on energy line	(i) an action sociometry, warm-up device that allows people to see and to experience what is happening within the group.
N. Julia 37	(i) when we're in action, when we're actually moving, the mind gets less in the way. Often people feel more able to speak as they're moving
O. Julia 50	(i) the dir takes up the prot's statement about needing to create space (an action cue) and said lets create that space here using the people that are available to you.

Table 8.10 Commentary on action

event	comments
P. Fran 14	(i) This uses the experience of play to get in touch with the roles that one has in life. New roles are often first practised in play; children practise new roles first and as adults they then take them on again.
Q. Fran 147-148	(i) an activity will generally warm people up in a different way (normally sit and look serious) and free them up to be looser and more spontaneous.
R. Max1 general	(i) action tends to result in people letting go of intellectualising, of the domination of the intellect, there's a more total expression
S. Max1 2	(i) interpretations based on actions increase spontaneity and develop a group culture where group members cease to try to predict what is going to happen next.
T. Max1 4	(i) psychodrama is an action method. A relaxed approach is taken in the physical (handles given to be physically involved) so the group becomes comfortable and perhaps find it an ordinary thing to be doing
U. Max1 3-20	(i) The concretisation and maximisation in the visualisation results in thinking and feeling at the same time (not just an intellectualisation process) and so in a greater integration of different aspects of himself. What I'm conscious of, what I'm trying to do is to um ah um stimulate him to become more conscious of the implications of what he is doing, to sort of um really think for himself what are my values. Um, and to um ah um be um decisive enough to not only accept those values with his mind, but also live by them. Um, I'm not interested in some sort of theoretical system being developed. I want him to act it, feel it, and test out through the enactment whether this is going to work for him or not. So I want him to experiment, to find out through the experience.
V. Max1 9-12	(i) this kind of lead helps the protagonist to move more rapidly and not get locked into ponderous thinking.
W. Max1 23	(i) rapid role reversal is pushing the prot towards a spontaneity state. His old and conserved ways of coping with this kind of situation are going to be overloaded and he's going to be thrust into a situation where the only way he can go will be to act spontaneously and creatively, i.e., he won't have had the chance, with a pre-determined planning, and pre-mediated um thinking about how he is going to act in this situation. He's just going to have to act with some degree of spontaneity.
X. Max2 interviews prot in role	(i) the prot is warming up more deeply to the role as she goes rather than intellectualising about it, she's experiencing it,
Y. Max2 127-145	(i) it's important the drama takes place on the stage in such a way that the audience can appreciate and participate in it.
Z1. Max2 148-150	(i) the dir has the intention of locating this action at a particular time and a particular place and interviews the prot to help her to warm up to that particular event.
Z2. Max2 151-154 childhood scene enacted	(i) the auxs become involved, gently laugh, and appreciate
Z3. Max2 158-200	(i) the dir is encouraging the prot to make that interactive, to express it to the children in the bamboo. A basic principle of work in psychodrama is to make the action interactive and to trust that through that interaction the protagonist will gain a great deal and whatever is unconscious will come to consciousness.
Z4. Max2 205-206	(i) Thru that intense interaction the prot becomes very highly warmed up and so now speaks with a great deal of feeling and passion and spontaneity which wasn't in her earlier on.

Note: (i), (ii) & (iii) indicate different commentators

Table 8.10 Commentary on action (continued)

The commentaries of table 8.10 were summarised under the three categories of general, mechanisms, and results.

(i) General

- Psychodrama is an action method L. T
- The director wants action I, J, K.

(ii) Mechanisms and process

- Role enactment and role reversal E, F. combined with rapid role reversal old conserved ways of coping overloaded, not able to go with pre-meditated and pre-determined planning W; make action interactive Z3
- Concretisation U
- Maximisation I, U
- Action cue (dramatise when prot's visualises G); O
- The more specific the event is in time and space, the sharper the action H; find precise moment action starts so acts with intrigue and doesn't speak about K; interviews to locate action in particular time and place Z1
- Body first clue, words follow D.

(iii) Dramatic action results in:

- Memory in present E, K, memory clearer K iii, more things K iii; reduces amount of reporting K; place action in space and time H; abstract made concrete J
- Total expression R; greater expression B; more dimensions present, cf. talking E; thinking and feeling at same time U; greater integration of different aspects of self U; thinking, feeling, and action all present C; freedom of self revelation B; looser Q; more able to speak N; move quicker V (not ponderous thinking)
- Mind less in the way N; letting go of intellectualising R; not just intellectualising U, X; not locked into ponderous thinking U; not able to go with pre-meditated and pre-determined planning W (in rapid role reversal) i.e., old conserved ways of coping overloaded
- Act, feel and test out through enactment whether prot's values will work for prot U; experiment and find out through experience U; change (E acting more likely to bring change than thinking)
- Create inner world outside E; set out internal system of roles and act the relationships F
- Audience involved (E because inner world outside); audience can appreciate and participate Y; proof from video - auxs involved laughing and appreciating Max2 151-154
- Don't predict what is going to happen next S; intrigue and unknown K (if speaks about scene its removed)
- Make unconscious conscious
- Spontaneous E, Q, S, W, Z4; alive E; feeling Z4; passion Z4; leads to passionate, deeper experience X
- Greater mindfulness and awareness (D after getting action and kinaesthetic sense)

- Use of play to get in touch with roles and practise new roles P.

The main characteristics relating to action and the use of action that emerged from the commentary as organised above were:

- The main mechanism of action is role enactment which involves the techniques of concretisation, maximisation, and role reversal.
- Rather than talking about or reporting an event, it can be placed in time and space and so the memory of the event will be clearer. The protagonist is 'being' rather than just 'talking about'. It is advantageous for the director to pick up quickly on 'action cues' and get the protagonist's memory and experience enacted before the protagonist starts thinking about them.
- Use of action provides the opportunity for all aspects of the self (thought, feeling, and action) to be present and expressed at the same time. The dominance of an intellectualising process that is ponderous and restrictive can be overcome.
- Any resolution can be tested against all dimensions of the individual because action can result in more of the individual being involved.

A description of action could not be formulated from the commentaries. However, the commentaries as summarised above can generate some hypotheses worth investigating, for example:

- Enacting an event will invoke clearer memory than just talking about the event
- A ponderous and restrictive intellectualising process can be overcome through action
- Action produces more change than just talking.

These studies may need to first describe action.

Chapter Nine

Conclusions

The contributions and limitations of this work are discussed, first from the perspective of the application domain of psychotherapy and psychodrama, and then from the perspective of IS in the areas of:

1. EXCOVE and KE
2. FERAL, CAQDAS and systems development.

9.1 Contributions to psychodrama and psychotherapy

9.1.1 The project's contributions to psychodrama

The contributions to the field of psychodrama made by this study are discussed below.

(i) Investigation of five topics

Some theory confirmation and refinement occurred for *phases*, *doubling*, and *mirroring*. Descriptions of *mirroring*, *doubling* and a way to distinguish between them were developed. It was discovered that ambiguity exists for practitioners as well as theorists in some areas. Theory exploration in the areas of *unpredictability* and *action* resulted in some initial descriptions that can be further investigated in follow-up studies.

The analyses were purposefully and predominantly descriptive and should be considered preliminary. Future studies might consider follow-up studies which:

- Investigate other topics using the current video and commentary data.
- Use the current video data and ask experts to rate certain criteria in detail. For example, experts could view examples of mirroring and be asked to indicate the presence or not of certain characteristics that are indicated in the descriptions generated in this study. This type of study can be used to validate and clarify the initial descriptions that have been made in this study.
- Use the current video data to collect commentary from experts from other psychotherapeutic orientations so that any idiosyncratic tendency by using only psychodramatists is removed.

- Video record more psychodramas with different types of groups, for example, groups who are naive to psychodrama and groups that have met more than once. As previously mentioned, all the groups in this study were one-off meetings and therefore were not representative of all group maturates. These new video recordings can then be used to collect more commentary and/or validate current descriptions. The video recording of a training workshop that typically runs over several days could also be valuable especially for providing data for use in a training application that could be built using FERAL.

These follow-up studies will assist the results to be tested, refined, and validated against a greater range of practitioners and researchers. The current results are based on a subsample of practitioners and one researcher. The FERAL application containing this project's data can be used both as a repository and an environment for compiling these future findings. FERAL can assist both the organisation of the data and provide some analytical tools.

(ii) An information system

A FERAL application containing a database of video, commentary, and analytical data that can be used for research and educational purposes was developed. At present FERAL is only available on the Macintosh platform which has a limited slice of the personal computer market. Therefore it is unlikely FERAL will be widely used until a version of FERAL is developed for PCs. Also, use of the video control software currently requires users to have a Panasonic video controller with an RS-232 interface. Very few people would have access to such equipment.

While the majority of people in the psychodrama world who have learnt of the project saw an information system on psychodrama as a good thing, some concerns were expressed during the author's presentation of the work. The concerns and the author's responses are outlined below.

- **The computer will do the directing and analysis.** Some people unfamiliar with computers can think they are far more powerful than they are. The author assured them that the computer could not direct and the analysis is done by researchers with the assistance of the computer.
- **The techniques of psychodrama will be mis-used** because psychodrama will be available (through the FERAL applications) without a proper training or experiential context. The author's response was that the system with multiple expert commentaries and results of careful analysis aims to provide a useful context perhaps better than one available in a training or experiential event. However, there is also risk with any exposure. For example, participants in an experiential workshop can just as easily mis-use the techniques after the workshop is over.

(iii) Knowledge of a data collection approach (EXCOVE)

Psychodrama can benefit from the development of EXCOVE and the evidence of this study's analyses indicating that the various mechanisms of capturing high expertise, video recordings, and expert commentary are useful.

(iv) Greater exposure of psychodrama outside its own world.

Surprisingly little is known about psychodrama in the field of psychotherapy research. Hopefully, papers can be published presenting this study's work to the psychotherapy research community.

9.1.2 The project's contributions to psychotherapy research

One set of criteria for assessing this study's contribution to psychotherapy research are its contributions to the problems facing psychotherapy research as presented in chapter two.

- **Coping with complexity.** The domain is hugely complex. Theoretically, EXCOVE assists the researcher by using experts to provide useful conceptual maps of the domain. However, the analysis showed the experts lacked conceptual clarity and consensus in some areas. And so the author had to play an active role in making analytical decisions. However, EXCOVE and FERAL appeared to have assisted with complexity. It is important to acknowledge that it is a complex domain of human behaviour and that to try to reduce it to simple answers and formulae may not be productive. Also,
psychotherapy research is an ongoing, never-ending process of learning and discovery in which final answers are unlikely and unnecessary. The search for truth is meaningful as a process and contributes significantly to our understanding of therapy without providing final answers. (Lambert, 1991, p. 9.)
- **Multi-methodological.** This study used a qualitative approach and attempted to make it more robust and provide tools to assist analysis (through FERAL). Chapter two discusses the relevance of qualitative approaches for the current stage of development of the field of psychotherapy research, especially for obtaining high quality observations and descriptions.
- **Level of description.** Expert commentators were directed to comment on important events and core principles. However, they vary in the granularity of their comments. Some comments were on general processes, some were on fine details. All levels of description were useful for analysis, as were ways of going between different levels and viewpoints. The use of FERAL and its ability to have multiple encodings of the data and the use of video assisted this navigation.

- **Ecological validity.** EXCOVE increases the likelihood of ecological validity by video recording real sessions and using expert practitioners. However, this study's sessions were slightly unusual because of the use of video cameras in a studio and the one-off meeting of the group. Chapter seven, and in particular, section 7.1.1.4 gives some indications of how the influence of being filmed can be minimised to reduce fear, create safety, and so encourage a realistic event.
- **High quality observation and description.** EXCOVE was explicitly designed to maximise the quality of observation and description. The results suggest success.

This project has also contributed to psychotherapy research in the following ways:

- The addition of an approach to data collection (EXCOVE), including indications on the advantages of capturing the behaviour of high expertise, using multiple expert commentary, and using video recordings.
- Indications on how to acquire field participation (discussed in section 9.2.3).
- Some initial guidelines (section 9.2.4) on using convergence and divergence in multiple commentary on psychotherapy sessions.
- An information system on psychodrama containing video, commentary, and analytical data. Little research has been done on psychodrama, and outside of the *Journal of Group Psychotherapy, Psychodrama, and Sociometry*, very little has been published in mainstream psychotherapy research journals, such as the *International Journal of Group Psychotherapy*.
- A new computer system for assisting qualitative data analysis that facilitates co-ordination of temporal, narrative data and the use of a *sheets-of-paper* interface that facilitates qualitative data analysis.
- An approach to starting a long-term programmatic study of a psychotherapy which includes a combination of the above mechanisms.

9.2 Discussion of EXCOVE and KE

An evaluation of EXCOVE and the use of video is undertaken in the light of the analyses performed. Acquiring expert participation and the analysis method are also discussed. Various issues concerning collecting expert commentaries such as the procedures and the mechanics were discussed and summarised in chapter seven¹⁷.

9.2.1 Evaluation of EXCOVE's aims

From a psychotherapy perspective, EXCOVE was designed to maximise the quality of observation and description of psychotherapy processes. Results of the analyses of the

¹⁷ These include the audio recording of commentary, collecting commentary with and without the researcher present, the use of quad-split videotapes, one-pass viewing verses multiple-pass viewing, gaining consent, and the accuracy of post-event self-commentary.

five selected topics generated from the commentary and video data suggests the use of EXCOVE has generated high quality observations and descriptions.

From KE and IS perspectives, EXCOVE aims to:

- Retain the advantages of open questioning
- Minimise the possibility of copious, unwieldy and inaccurate data
- Trigger and bring to consciousness appropriate cognitive processes by using specific instances.

These three aims are evaluated from the experiences of the data collection and the analyses.

(i) Advantages of open questioning retained

The three types of advantages are:

- **Non-direction** of expert with interruption minimised. Interruption was unnecessary and rarely occurred. Eliminating directiveness was not possible and was present in two ways. First, commentators needed some kind of guidelines. The guidelines (commentating on what is important, the core principles, and anything interesting) were open and kept any directiveness to a minimal level. Second, commentators were directed by the content of the video data they commentated on. That is, if the data only showed one aspect of the domain, the commentators would have been 'directed' to focus on this aspect and aspects not present in the video data would have received little focus. Therefore the more representative the data, the less the likelihood of this kind of directiveness. The value of representative data for contributing to robust study is well known (Checkland & Scholes, 1990; Kelle & Laurie, 1995). One of the few things agreed upon in the literature on group process (see section 2.1.6) is that groups and their concerns and foci change over their time together and number of meetings. In the first four to five meetings participants are mainly concerned with issues around safety. The psychodrama sessions videoed were all one-off single sessions and so the video data is not representative of later sessions which would show how a group 'matures'. To create greater representativeness extra video data is needed over a range of sessions. Filming of a workshop of several days where a range of issues would be covered is one possibility.
- Obtaining **certain types of information** such as, unanticipated information, expert's paths of association, the relative importance, the frame of reference, the chronological order, and the vocabulary. These types of data are critical for attempting to understand a domain that is not well understood. The commentaries are packed with information of this kind and so EXCOVE is successful in this aspect.

- **Motivation** of experts which includes establishing rapport between researcher and expert and getting involvement of the expert. Rapport is difficult to measure and is not so important at the initial stage of KE covered by EXCOVE because of the low interaction between the knowledge engineer and the expert. However, the experts were interested in the project and keen to contribute. This was due to a variety of factors including the provision of an opportunity for experts to express their knowledge (see section 7.2.4).

(ii) Copious and inaccurate data minimised

During the analysis steps taken for the five topics investigated, a large amount of commentary data was collected and analysed. From the hundreds of comments compiled for the analyses, only three comments in total were considered irrelevant and/or inaccurate. This success is most likely due to the focus on specific video-captured events.

(iii) Cognitive processes brought to consciousness

For the video viewings by experts where the author was present, the experts appeared to be able to enter into the videotaped event with ease and without exception had thoughts to express at every stage during the viewing. This suggests experts were able to bring cognitive processes to consciousness. However, it is not possible to evaluate with any surety using the data collected. Comparative studies of the type suggested in the previous section could be done, for example, comparing a post-event recall with and without video.

9.2.2 Evaluation of the use of video recording

The use of video is critical to EXCOVE and was seen as having several advantages for use in KE. The six advantages of video presented in chapter four are discussed from the experiences of the data collection and analyses. The procedures for video recording which were refined and developed over the course of the three filmings were discussed in chapter seven.

1. **Sensory-rich memory cues.** All commentators were able to generate comments freely and some commented on the ability to become immersed in the drama. Commentators that were the actual directors talked as though they were back in the drama. Being able to see the director, protagonist and group through the use of the quad splitter enabled observation of certain phenomena that would not otherwise have been possible. For example, in the Max1 session the protagonist says he feels like sticking his heels in and the director takes this action into his body, which is seen in the director sticking his chin out. There are many times when the video gives essential information which would be difficult to pick up by transcript alone. For

example, the critical point of realisation in drama two of filming three where the protagonist says with great surprise 'I do' when she realises she has been treating herself as a laggard. The critical information captured on the video is the gestalt of tone of voice, facial expression, and body language that clearly indicated a significant moment for the protagonist involving surprise and humour.

2. **Control over viewing.** Commentators were able to view carefully and pause to collect their thoughts. Usually commentators did not take advantage of rewind for multiple viewings mainly because of lack of time and the difficulty of getting to the appropriate segment on the typical home video player. However, some commentators who viewed the video on their own viewed the video more than once.
3. **Enhanced awareness.** It is theorised that the essence of this advantage is that viewers are not so emotionally involved (see section 4.2.3) and so have increased conscious awareness of the processes in the psychodrama. This is not possible to evaluate with the current data. Commentators appeared to be both involved and yet at an objective distance so that they could be critical. Future study of whether enhanced awareness exists in video replay and whether it is inversely proportional to involvement in the replay scene would be useful.
4. **Convenience.** The use of video allowed multiple commentary on the event from expert commentators from diverse geographical locations. Without the video recording, the logistics of gathering the group of experts together to observe the event *in vivo* would have been seriously inconvenient at best and impossible at worst. However, the effort required to video record the event was large.
5. **Non-evasive.** Participant feedback showed the thought of being videoed and later viewed was a consideration but to what extent it influenced their behaviour was not possible to evaluate in this study. Measures were taken to create a sense of safety (outlined in section 7.1.1.4) that should have diminished this influence. Any data collecting and/or observation will influence behaviour to some extent. Studies on the influence of video recording on participant behaviour would be useful, as would comparative studies between the impact of video recording versus *in vivo* observation.
6. **Useful in analysis.** The video data was crucial in the analyses of the topics. The video data was essential for identifying the divisions of events for the event boxes in the analysis on phases (used to draw up the event boxes of Figures 8.1 to 8.3). The video data was used to identify the mechanics of doubling and mirroring which were incorporated into the descriptions that were developed. These descriptions were used to generate a way of distinguishing doubling from mirroring by using the dimensions of distance and time (section 8.3.4). The video data was also used to view the events following the process of *playback* to confirm if there were

interactions between the protagonist and other roles in the action area (section 8.3.3).

In summary, the major advantage video appears to have over *in vivo* observation is the preservation of information that can be examined repeatedly and in detail.

This project highlights several areas where further studies on the use of video would be useful, including:

- Is commentary from viewing video richer than commentary from reading a transcript, or commentary from recall of *in vivo* observation?
- Does video recall lead to enhanced awareness? And if so, in what ways?
- Is enhanced awareness inversely proportional with the amount of viewer involvement in the event being watched on video?
- What types of information need to be recorded to allow a viewer who was not a participant at the event to become immersed and involved in the event?
- Is video sensory rich enough to bring to consciousness tacit knowledge?
- In what ways do the attitude and purpose of the viewer effect the experience of viewing a videotaped event? A viewer who is willing to become immersed or re-immersed in an event will probably have a different experience from someone who is not.

Two questions from section 4.2.3 also remain:

- Are responses obtained during videotape-assisted reviews accurate representations of the actual experiences?
- How does video recording interfere with performance of those being video recorded? What measures can limit this interference? This study used several measures (section 7.1.1.4) designed to diminish interference that could be further investigated.

9.2.3 Encouraging expert participation

Identifying and involving experts is crucial to EXCOVE and to this project. Engaging experts, especially leaders in their field, can be a difficult task. One of the features of the data collection process that assisted was the willingness of domain experts to be involved and to contribute. Acquiring expert participation is a problem in KA (Scott *et al.*, 1991) and is poorly documented. The problem is increased by experts who are extremely busy. This was certainly the case in this project with time being very limited for a number of experts. The success of the project in acquiring expert participation was potentially due to a combination of the following:

- Field contact by the author
- Targeting and involving the leading figure in the field
- The convenience and ease of audio taping
- Attention to confidentiality

- Open questions where the control over the content of the answer is with the expert commentator.

These provide some initial guidelines for gaining expert participation. They may also be of assistance for the general activity in IS of gathering information about a domain from a set of users which has received little research attention (Freeman, 1992).

9.2.4 Discussion of the analysis method

The analysis method which emerged during the study (section 8.2) is similar to other qualitative approaches summarised by Seidel and Kelle (1995) as: (1) noticing relevant phenomena, (2) collecting instances of these phenomena, and (3) analysing these phenomena to find commonalities, differences, patterns, structures, etc.

An unusual characteristic of this study's analyses was the use of multiple commentators. They were valuable for getting a rich collection of data and different perspectives. The amounts of both consensus and divergence between different expert commentators were useful. Convergence can be seen to exist for two aspects, convergence in content and convergence in time which leads to four situations (see table 9.1). These are discussed in turn.

convergence in	
content	time
yes	yes
yes	no
no	yes
no	no

Table 9.1 Commentator convergence

1. **Convergence in content and time.** This was rare and was highly significant. For example, in doubling, greater significance was attached to the four (out of 16) events where all commentators agreed the event was doubling. These events and their commentaries were used to develop an initial description of doubling.
2. **Convergence in content but not in time.** Restraining meaningful results to only full convergence in content and time was not necessary to ensure the relevance or validity of a phenomena or concept. Experts commented on what they considered important, but they did not comment on every instance of an important phenomena. For example, a commentator usually described an important phenomenon, such as role reversal, once in detail even though it occurred several times. So if one commentator talked of something at a particular time and the other commentators did

not, that did not necessarily mean the other commentators thought it was not occurring or was not important. Convergence in content but not in time was a common occurrence in the commentary data.

3. **Convergence in time but not in content.** In this situation, commentators talked of different things when referring to the same event. Its occurrence indicated a lack of conceptual clarity amongst commentators. For example, when talking of event Y in table 8.4 a commentator called it doubling and two others called it mirroring. This divergence lead to careful examination of doubling and mirroring and the discovery of a potentially useful way to distinguish between them.
4. **No convergence.** In this situation one commentator has a concept or perception no one else mentions at any time. This required careful examination of other data and then a judgement by the author as to its usefulness. For example, in the investigation of *unpredictability* an expert (A in table 8.9) says a psychodrama needs purpose, yet seven out of the ten psychodramas filmed had no purpose and no other commentator mentioned a drama needing a purpose at any time. The conclusion, therefore, was that having a purpose is not done or considered important by the majority of this study's experts.

Another aspect of this study's analyses was the use of the author's domain knowledge. It was believed that such knowledge would assist analysis and closer simulate the situation of potential users of FERAL and the FERAL-based psychodrama applications.

9.2.5 Summary of EXCOVE

The contributions this project makes to KE and expertise as discussed above are indications on how:

- By focusing on specific events, commentary can be used to maintain the advantages of open questioning while diminishing the amount and irrelevance of data
- Video can assist KE
- Expert participation can be encouraged
- The use of convergence and divergence can assist the analysis of data collected from multiple experts.

Other contributions are:

- A computer system that provides tools to assist analysis tasks, specifically, tasks that require co-ordination between different data types (video and text) and multiple narratives on the same event.
- More support for making KE independent of the fields of Expert Systems and Artificial Intelligence as argued in chapter four. The results of the study show that it is useful to model expert behaviour without having to build an expert system.

The data generated by using EXCOVE in this study, was as it was designed to be; descriptive. The results were, therefore, largely preliminary and explorative. There were many hypotheses generated from the analyses and these will be useful for follow-up studies to investigate. Encouragingly, some of these studies can be done by using and building on the data and analyses that have already been done. EXCOVE appears to be useful in the exploration of a complex domain that is not well understood.

A question remains about how complete and comprehensive data collected using EXCOVE can be. Answers to the questions of; how representative the videotaped events are of the phenomena, and how representative the expert commentators are of the expertise in the field are important for assessing completeness. However, these may not be easy to ascertain especially if the field is not well understood which is likely to be the case if EXCOVE is being used. One option is to have an iterative process of collecting data until no new data is generated. It will then probably come down to a judgement call by the researchers. The greater the researcher's knowledge of the domain and conceptual clarity, then the greater the chance this decision will be a good one.

In chapter two, it was considered that teachers and trainers might be useful as commentators because they may be clearer about their competence. In this study, almost all commentators were trainers and so no comparative study between the content of expert commentators that were teachers and those who were not was possible.

9.3 Discussion of FERAL

FERAL is discussed under the headings: support of analysis tasks, benefits for qualitative analysis, future development, evolutionary prototyping, and the development of FERAL as valid research.

9.3.1 FERAL's support of analysis tasks

Completion of the analysis tasks demonstrated that the innovations identified in sections 5.4 and 5.5 and listed as system requirements (section 7.1) were useful and, to a large degree, successfully achieved by FERAL. FERAL appeared to support the acquisition of a large volume of information and allowing access to it in easy and meaningful ways. How FERAL assisted analysis through its functions and its interface is discussed below.

(i) Functions that supported analysis

The functions of FERAL assisted analysis in a number of ways:

- **Co-ordination.** The co-ordination facilities (sequential indexing and time code find) assisted analyses by being able to easily go from expert commentary on an event to other commentaries on the same event and to the video segment of that event and vice versa. The ability to search and retrieve text within a document according to a time code index was used to get other commentaries on an event commented on (step six). The ability to quickly view the video segment a commentary referred to was also useful especially when building a description of the event commented on (step five). The facility saved a lot of time enabling the author to keep his attention on the analysis task rather than be side-tracked with considerations of how to operate a video player and track down the appropriate video segment.
- **Codes.** The coding facility was used to create the 'macro' codes which aided researcher familiarity with the data and acted as a rough indication of the main content of the commentaries and as an index to commentaries. The coding facility could also have been used to create a descriptive language from the taxonomy (step seven of the process). The unlimited length for code names meant meaningful code names could be given to clearly summarise the data they encoded as shown in the example in section 8.1.2. A code name restricted to less than 12 characters like most other CAQDAS would not be able to convey as clearly the content it refers to.
- **Memos.** Memos were created during the macro coding process and were important to capture:
 1. Links to segments of commentary containing important or interesting concepts that were not the main point of the comment and so not indicated or captured by the code name. For example, there was a memo for a comment on 'phase' where the comment did not mention 'phase'.
 2. Any ideas, thoughts, or insights.

These memos were then used to get all source information in step two. Memos were also used at different times in the analysis to capture any information that was discovered when investigating another theme. For example, in doing step six of the analysis process for a concept, the author came across a comment to do with another concept 'mirroring' that had not been captured by macro encoding and so linked this comment to a memo on mirroring. In a similar way, a memo was created to capture comments on how pace and action can thwart intellectualisation and ponderence. Figure 9.2 shows part of an area set up to contain a number of memos. The 'spontaneity' memo in Figure 9.2 has had the content of its links collected into its text window.

The ability of memos to have multiple links, also provided a kind of hypertext linking facility. For example, the memo for 'unpredictability' linked multiple sources

of information on 'unpredictability'. While there were not direct links between the different sources, the memo showed all links and using the facility 'content of' from the memo window menu, all the source data can be collected into the memo with one operation. These memoing facilities of FERAL are only matched in comprehensiveness by ATLAS/ti.

- **Notes.** Note windows were used extensively during analysis and in a number of ways:
 - To collect occurrences of a topic in the *source* note window (step one).
 - To build a descriptive language in the *table* note window (step four). The ability to edit the structure of the contents of the window was useful in developing the optimal taxonomy-type structure for *table*. Table 8.2 is an example of such a *table*. The abilities to copy and paste window contents and to transfer windows between areas assisted the accumulation of information from sources in different areas.
 - To create an audit trail with different versions of the *table* (steps three to six). The different versions can be indicated by using meaningful names for the note windows and/or reading the create and modify dates for each window.
 - For the easy capture of information, for example, listing questions that emerged during step seven when formulating a description of the phenomena from analysis of the taxonomy *table*.
 - For integrating existing theory with the taxonomy *table* (step eight).
 - To keep a record of a thesaurus (or dictionary) of related terms and synonyms.

Note windows are potentially very useful because of the wide range of uses they can be put to. For example, records can be kept of the different versions and progressions of a researcher's analyses. Also, records can be kept of the analyses of different researchers. Combined with the *sheets-of-paper* interface where these records can be organised in a way that is more sensible and useful to the researchers, notes provide a flexible and powerful feature.

- **Frequency counts** of terms. Initially, the counts of terms were done using a function in the document menu, so that counts were done term by term, commentary document by commentary document. Using this method four commentaries took over one hour. A function was therefore developed to count a list of terms for all documents in a system which completed the task in a matter of seconds.
- **Find text strings** was principally used in step one for gathering commentary concerning a term or set of terms. The facility 'hits + line in note' in the 'find text > documents' menu (see Appendix F, section F.1) was particularly useful because it not only gave the position of the concept in the commentary, but also the context the term was in.

How the video data and video facilities supported analysis is described in the previous section on EXCOVE.

(ii) How the *sheets-of-paper* interface assisted analysis tasks

The *sheets-of-paper* interface assisted analysis tasks in various ways.

- **Flexible structuring and organising of data.** In analysis, the data was separated into three applications, one for each filming. The ability to integrate areas and their windows from different applications and to transfer analysis data between the different applications using note windows meant the data could still be combined if need be. Windows can also be transferred between areas. For example, in step one of the analysis process a note window was transferred around the various areas in order to compile information from various sources. The *table* window used for building a taxonomy using comments on events described by other commentaries (step six) was transferred around to all the commentaries, so related information could be easily entered.

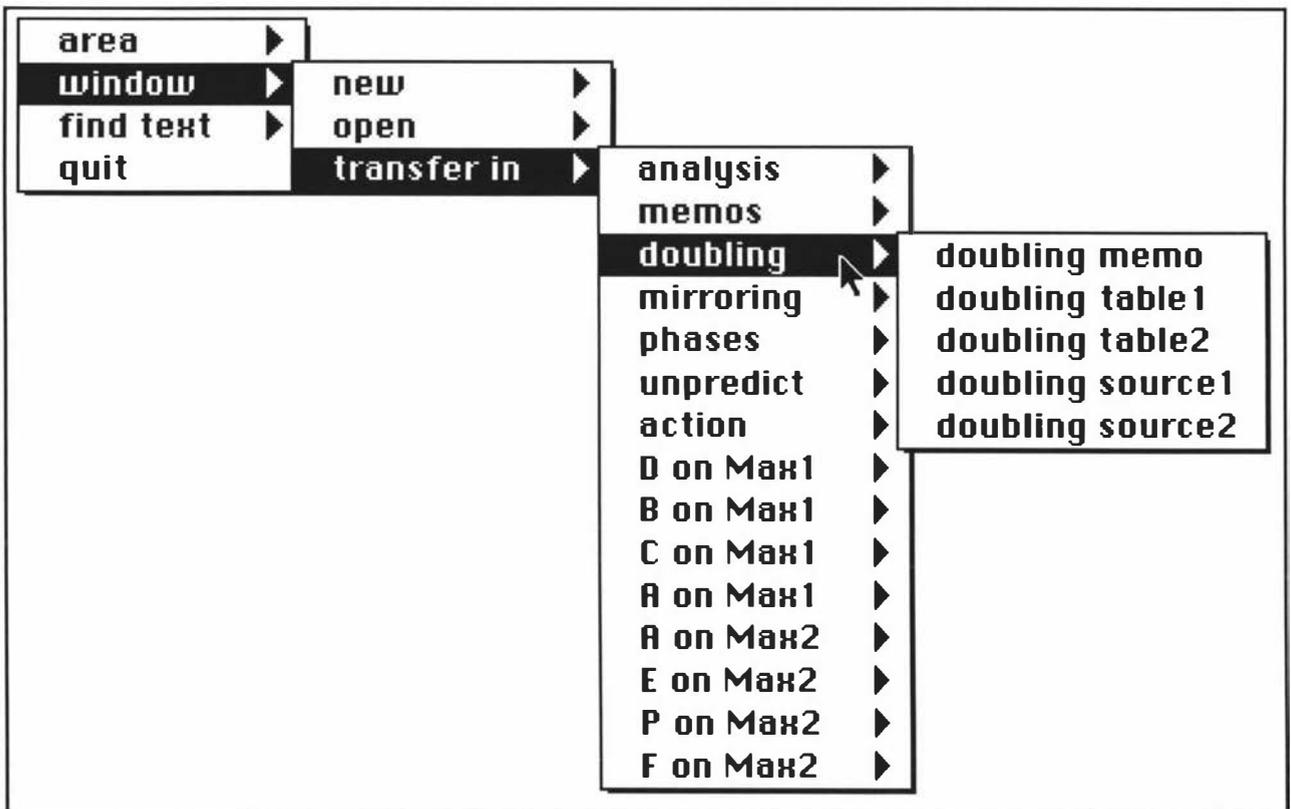


Figure 9.1 The background menu for the filming one application

The ability to structure areas with any type of window assisted the analysis tasks. Figure 9.1 shows the different areas in the application for filming one. The third menu out lists the areas, except for the current area which is the area

containing transcripts of the videotaped session. The five windows of the 'doubling' area are shown in the fourth menu.

The areas were used for different purposes. The 'analysis' area contained various windows that assisted analysis, such as 'count of core concepts'. The 'memo' area contained various memos. Part of this area with one arrangement of the memos is shown in figure 9.2. The author found having the memos in one area assisted browsing and retrieval of memo information. Figure 9.2 shows how the ability to position the memos in any way and to toggle the body of the window off assisted the ease with which they were browsed and information retrieved. The next area in the third menu out in figure 9.1 is 'doubling', which is an example of an area dedicated to a particular topic. Notice that one of the windows in the submenu off 'doubling' is the 'doubling memo'. For the purpose of gathering all data together about doubling, it was better to transfer the 'doubling memo' from the area for 'memos' into the area for 'doubling'. The next areas, 'mirroring', 'phases', 'unpredict', and 'action' are all similar in structure and purpose to the 'doubling' area as they focus on gathering all information on these analysis topics in one place.

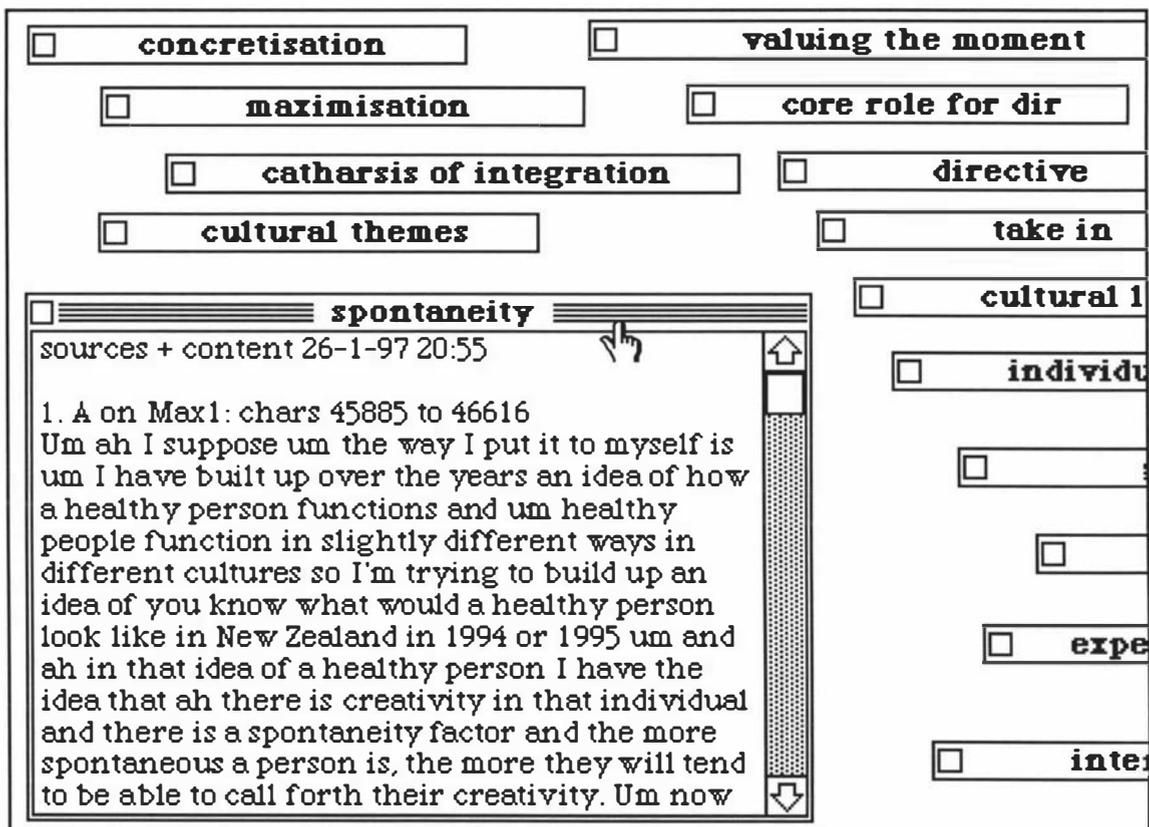


Figure 9.2 Part of the 'memo' area for the filming one application

The remaining areas, 'D on Max1', etc. are areas for commentary. The most useful arrangement for commentary data was having one area per expert commentary

with one of each a document, macro code set, and instance set. Figure 9.3 shows one arrangement of the windows in this area. Notice that each window can be easily toggled to full size for quick and easy reading. Usually, CAQDAS constrains how these windows will be arranged and this can restrict their usefulness and usability. For example, it is often unnecessary to have the instance set in view. In FERAL, the instance set can be toggled off or even completely closed. A closed window can be re-opened through the 'window > open' command. The structure provided by discrete areas provides a kind of virtual desktop where an unlimited number of screens (areas) can be set up.

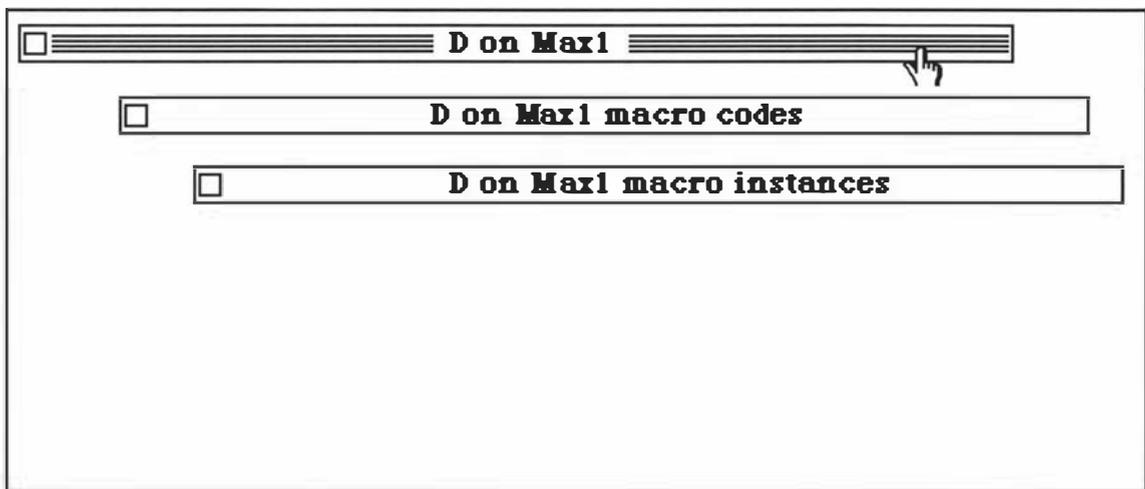


Figure 9.3 The area for expert D's commentary on filming one

- **Positioning of windows.** As seen above, the ability to vary the presentation, to position and layer windows, and to go between full display, titlebar display, and no display was useful for quickly adapting the system and its data for different tasks. It also assisted the reading of information from one window for compilation into a summary window, for example in placing the *table* window beside its *source* (step four) and in compiling from other commentary (step six). This shows, FERAL assists intermediate analysis taxonomies, tables, and results to be integrated with each other and with the existing data. This assists the researcher to remain 'close to their data'.
- **Multipurpose windows.** The structure of the content of windows can be modified thereby assisting experimentation in the way data is structured. For example, the contents of *table* window used in the analysis of doubling was arranged in different ways to develop the best taxonomy-type structure for the data being compiled.

The analysis tasks demonstrate that the innovations identified in sections 5.4 and 5.5 and listed as system requirements (section 6.1) were useful for the analysis tasks and were implemented in FERAL.

FERAL's flexible interface appeared to successfully met most of the system requirements. The author believes the interface style and system operation is also intuitive and has aesthetic appeal. Exposure to a greater range of users and domains will show whether others find this. Perhaps FERAL's *sheets-of-paper* interface also reflects some design artistry that Nunamaker *et al.* (1991) believe is important for systems development. Certainly, the use of the *sheets-of-paper* metaphor generated the creation of an interesting and useful interface.

9.3.2 FERAL's benefits for qualitative analysis

There are also other interesting and useful characteristics of FERAL which are not as directly demonstrable from the analysis as those above. These are discussed separately although they are somewhat interrelated. FERAL's *sheets-of-paper* interface plays an especially significant role in many of these benefits. These characteristics are discussed relative to the features of other CAQDAS systems.

(i) User control

CAQDAS can adversely influence users, for example, isolate them from their methodology (section 5.3.1). While users can minimise and prevent any damage by understanding the program's behaviour and underlying framework as recommended by Weitzman and Miles (1995), it is better that a CAQDAS minimise any control it may have over the user. The nature of FERAL's interface provides some indications on one way this can be done.

As discussed in chapter five using the example of pencil and paper, flexibility in the way a tool can be used can lead to creativity and a range of applications. Another example is building blocks; they are simple and the constraints on how they can be used are few. However, the range of structures that can be built are limitless. FERAL's flexible interface where window objects can be physically arranged has some characteristics of building blocks. The user can structure the system to suit their current needs. Normally, CAQDAS systems arrange one document alongside its code set. However, this is only one of many ways the user may wish to view the data. They may want to view multiple documents side by side, or all memos together. FERAL's approach assists the user to arrange windows in the interface to meet their current need.

Often adding functionality to a system is actioned by adding an explicit option and placing it in a menu somewhere. So to add different views of windows (documents, code sets, memos, etc.) the different options may be put in a menu. This way of increasing functionality adds to complexity of the menus and rarely covers all the options users

need because it is impossible for a developer to think of all the uses. FERAL's flexible interface allows different arrangements of objects without increasing complexity in menus. Also, by giving control of the amount and placing of screen objects to the user the interface becomes as simple or complex as the user makes it.

Another aspect of explicitly putting in a function is that it can entice the user to use it when they don't really need to. Users can be drawn to use a function because it is there. Maximising simplicity of operations can assist the user to focus on their needs and not the tools, so research needs and the analytic approach drive the analysis not the tools. The next two benefits, transparency and aesthetics, also contribute to a sense of user control.

(ii) Transparency

Transparency of how a system operates and what the results of user actions will be is important for users to understand and use the system effectively. FERAL can enhance transparency in two ways. First, by being able to structure and arrange the components of the interface, the structure of the system will more closely follow the way users see the system and the data they are working on. Second, the *sheets-of-paper* interface will be familiar to some researchers who are used to using manual paper-based methods. To these researchers, the system will operate in a more predictable way.

(iii) Aesthetics

There is also an aesthetics dimension to this style of interface in that the user can decide how simple or complex and in what arrangement their windows will take. Weitzman and Miles (1995) point out that interface style and system operation is a matter of taste and Prein *et al.* (1995) point out that preferences vary significantly. It is highly likely that, FERAL's interface style will not suit some researchers' preferences. However, the flexibility of FERAL's interface may cater for different styles and user likes. For example, a user may decide there is no use in having an instance set and so close it.

Not having a menubar and only having popup menus may seem awkward and be disliked, especially by Macintosh users who have the least exposure to popup menus compared with PC and UNIX platform users. The majority of people trying FERAL who were familiar with other software, found the lack of a menubar uncomfortable in the beginning, as they were used to using the menubar to navigate and get familiar with a system they hadn't used before. However, once the five windows are created and data entered all the menu options are available and the options can be scanned with as much ease as scanning a menubar. Moreover, the menu contents are more directly related to the objects they operate on. Menubars are not so directly related to objects and so the

specific facility the user is looking for may become lost among a multitude of irrelevant options all contained in the one menu hierarchy. Also, the content of menubars can change depending on the status of the system.

On starting a new FERAL application, the initial and only popup menu is the background which has the window creation options. Once they are actioned and windows created, the other menus come into play. This style, gives an incremental introduction, showing some of the procedures and the underlying conceptual framework of the system. This can be compared with a menubar which gives all functions with no indication of what to do first. For example, the author did not find it easy or intuitive to know how to do the core actions of creating a document and coding it when first using ATLAS/ti.

(iv) Closeness to data

Closeness to data is a term used to mean many things. FERAL supports the four features that Weitzman and Miles (1995) give for gaining closeness to data. They are:

1. See the codes and text clearly and easily and not get lost encoding and changing codes. FERAL allows users to arrange codes and text to suit their preferences. Attaching or changing a code is done directly on the code(s) selected and so the user can not get lost.
2. See code names attached to the text they apply to. FERAL has a menu option to show codes. An improvement would be to show the codes for a selected piece of text in the 'info' sub-menu. The reason this was not implemented was that the system time needed to find the codes¹⁸ would compromise system response time
3. Easily show text, codes, annotations and memos. Fully supported by FERAL's flexible interface.
4. Retrieved hits shown in full context. Also supported in FERAL. From a psychotherapy research perspective browsing and retrieval in context enables the study of such things as process in context which Greenberg and Pinosof (1986) believe will greatly enhance the search for process-outcome links. They believe the aggregate, frequency approach has failed to reveal process-outcome links because advanced therapists do not operate in terms of frequencies, but perform acts in specific contexts.

FERAL's flexible interface assists closeness to data by being able to show any data alongside any other data, e.g., text with codes, memos with source, etc. User control and transparency discussed above also contribute to closeness to data, as do the two sections below on auditing and easing difficulties with using computers.

¹⁸ Instantiate the variables.

(v) Auditing and systems closure

Auditing is an ability to trace back through intermediate results and to restore the original context. Systems closure involves being able to use intermediate results to be the source for further analysis. An example of system closure were the *source* windows created in step one of the analysis process which were used in subsequent analysis. Both these related tasks are considerably assisted by FERAL's ability to arrange windows and areas. For example, all intermediate results could be placed in one area. In this study, an area was dedicated to each topic analysed and contained historical versions of the analysis. This was assisted by the creation and modified date information attached to each window.

(vi) Easing difficulties with using computers

FERAL's interface style aims to increase the ease and efficiency of operations by minimising the amount of mouse movements and menu steps needed to accomplish a task. The valid operation appears at the place of selection and does not require an extra mouse movement to a remote menubar. Because the popup menu is hierarchical containing all options, all operations (apart from requests for user input like name for new window or new code) can occur with one mouse operation. Examples are: encoding with an existing code (even when there are multiple code sets), changing the code of an instance, going to an attached memo, linking to existing memos, transferring a specific window in from another area (see figure 9.1), and going to a specific area. Operations in FERAL were designed to be direct, simple, and closer to the operation of the world of physical objects. As a side benefit, the absence of fixed or permanent objects such as a menubar or buttons, means screen real estate is maximised further assisting the arrangement and structuring of data and the interface.

(vii) FERAL applications

There are various uses for FERAL if it is used as an application with data. In this project, the FERAL applications are a database of video examples linked to the thinking of contemporary psychodramatists with various data results from analyses. The FERAL applications developed in this project could be used as a data site that people can access for both research and training purposes. It could act as a knowledge gathering forum that researchers and interested people can browse and add data to.

(viii) Adaptable for training

The flexible nature of the interface also provides an ability for the system to be adapted for use in training and instruction. For example, text windows can be added that contain instructions, questions, exercises, notes, and information, or be text fields for student

answers, responses, and queries. For example, a teacher may arrange the workspace with a window with instructions for the student to encode a passage of therapy and then transfer this instance set to an area containing instance sets done by several experts in the field, which the student can then compare their work with. The flexible interface also assists the addition of further analytical and educational features. For example, a graphical facility for building conceptual maps of coding schemes could be added without changing the look or nature of the existing interface.

(ix) Assists good programming style

The above advantages are from the point of view of the user. From a developer's point of view the interface style is of assistance. With facilities so clearly tied to objects coupled with a dynamic instantiating of variables, the program code yields quite naturally to an object orientated style with no global variables being necessary. Such well structured code will be a considerable advantage for ease of programming additional features to the system.

(x) Evaluation of FERAL

In summary, FERAL has a number of potential benefits for qualitative analysis. However, it is important to acknowledge that FERAL is a tool and therefore can not prevent users from using it in less than rigorous ways. FERAL was developed to meet the specific demands of this project's analysis tasks which were done by one researcher; the author. Fuller evaluation of FERAL will be assisted by other researchers using FERAL, both with the psychodrama data and in other domains. One way to get some feedback would be a demonstration of the FERAL applications developed in this study to those in psychodrama and psychotherapy research followed by a questionnaire. Sample questions could be:

- Would you use the system, and if so, how?
- What kind of questions would it be useful for?
- Does the system stimulate you to think in certain ways?

9.3.3 FERAL's future development

Some potential future developments for FERAL have already been outlined in section 6.4.2. One of these is a version of FERAL for PCs. One option is to write a new version using Java so that it is platform independent. A version for the PC will greatly increase the number of prospective users which will also increase user feedback. This feedback is vital if FERAL is going to be improved on the basis of actual researcher experience.

The ease and clarity of communication between users and developers will be important. An illustration of the benefits of quality communication is that the developers of many

useful CAQDAS systems have also been users. The usefulness of the programs has been attributed to the developers being intimate with the needs of at least one user - themselves (Weitzman & Miles, 1995). Email list groups where users can ask questions and suggest improvements is an excellent mechanism for connecting users and developers that already exists for some CAQDAS.

A comprehensive study of how qualitative researchers use computers to support their research and what difficulties they have with them would also be useful for guiding further development. A comparison of paper-manual methods with computer tools could also be included in this investigation. The development of CAQDAS also has to attend to the needs and concerns of potential users who may not be well inclined to the use of computers.

One difficulty for future development is funding. The potential number of users for CAQDAS is considerably smaller than that for more general purpose systems such as spreadsheets and word processors. FERAL's future development could be dependent on some institutional support which given the limited financial return of a small base of users, is not guaranteed.

9.3.4 Evolutionary prototyping

It was reasoned (section 6.2.1) that *evolutionary prototyping* would be an advantageous development approach to use because improvements and additions to the system's functions and interface would need to be actioned at the same time that the system was being used, raw data kept, and analytical data generated. As predicted this situation eventuated and new needs emerged during the use of the system (for example, global finds and automatic time code indexing of a document from video). *Evolutionary prototyping* was useful as a development approach as witnessed by the progressive versions of FERAL developed during the successful analysis of data (see Appendix E for details of systems development). Several implementation mechanisms were found to support this dynamic prototyping approach.

1. **Interface and interface implementation independence.** This was achieved in two ways. First, by having no permanent, fixed screen objects, no readjustment of objects on the interface was necessary when there were changes in any existing windows or the addition of new ones. Second, by giving interface objects one line of code which simply calls a procedure that does all the processing, implementation could be changed without having to change any program code in the actual interface objects of any existing applications with live data. This meant that applications were not compromised or required any updating even when the implementation was modified and/or the behaviour of the interface was changed. The alternatives when

such independence does not exist is to either change every existing system every time the interface is changed (difficult once many working versions of the system exist) or to restrict any interface changes.

2. **No global variables**¹⁹. While globals can be very useful, as the program grows in complexity monitoring their values and maintaining referential transparency²⁰ becomes increasingly difficult. Addition and modification to existing program code is considerably easier when global variables do not exist because changing the value of globals may have unanticipated effects in completely unrelated parts of the program. As an alternative to globals, any variables that need to be shared can be explicitly passed between different procedures²¹ as parameters in the procedure calls.
3. **Clear conceptual structure**. The interface with functions attached to objects assists program code to be divided into clear and meaningful procedures.
4. **Dynamic instantiation**²². Most of the content of menus is created at the time it is selected by the user. For example the list of areas, code hierarchy, transferable windows, and attached memos are all dynamically created. Dynamic instantiation eliminates a large number of variable lists that would be needed to keep this information and, more importantly, the updating if a member of the list was added, deleted or modified. This simplifies the program and assists any additions or modifications. However, a trade-off is an increase in system response time for the user. For example, the creation of the document text menu (see Appendix F) requires the system to place all codes from connected code lists to be placed in a hierarchy and then for the system to go through all areas and find connected and unconnected memos.

The development of FERAL demonstrates some of the advantages of *evolutionary prototyping* and highlights some of the implementation mechanisms that can assist that. This will be of some assistance to designing systems so that they can be quickly and easily changed to respond to a dynamic world.

9.3.5 The development of FERAL as valid research

Initially, development of an information system was envisaged for the application domain of psychotherapy research without any focus on theory development. However, this proposed application development lead to identification of innovations in the fields of KE and CAQDAS which were then investigated through the development of FERAL and its use in the psychodrama analyses.

¹⁹Global variables are variables whose values can be changed from any part of the program.

²⁰Referential transparency is having clarity about when and how the value of a variable changes.

²¹Also called routines or handlers in Appendix E.

²²Instantiation is giving a program variable a value.

One way to assess the value of the development of FERAL as research is to use the five criteria Nunamaker *et al.* (1991) give in order for systems development to qualify as research.

1. **The purpose is to study an important phenomenon in areas of information systems through system building.** There are multiple purposes for the building of FERAL, the two most important being the building of an information system for psychotherapy research and the investigation of the usefulness of identified innovations in CAQDAS (a *sheets-of-paper* interface, co-ordinated data). As a side benefit, the value of *evolutionary prototyping* as a method of systems development was investigated.
2. **The results make a significant contribution to the domain.** If the domain means psychotherapy research, then the results indicate a useful contribution. However, more analysis and application across different psychotherapies are needed before the contribution could be classified as significant. If the domain means CAQDAS, then further studies are also needed before a 'significant' contribution can be claimed.
3. **The system is testable against all stated objectives and requirements.** FERAL has been given an initial testing through application to the analysis of the five psychodrama topics.
4. **The new system can provide better solutions to IS problems than existing systems.** In the area of CAQDAS, the *sheets-of-paper* interface indicates some new solutions. In the area of systems development, the use of *evolutionary prototyping* in the development of FERAL indicates how systems can be designed to be dynamic and respond easily to on-going development.
5. **Experience and design gained from building the system can be generalised for future use.** The process of getting familiar with the domain of psychotherapy research indicates some ways of targeting a domain. The implementation features that assisted *evolutionary prototyping* might also be useful in similar system developments.

In summary, the development of FERAL in this project has achieved the initial steps in the process that would qualify it as valid research using Nunamaker *et al.*'s (1991) criteria.

9.4 Project conclusions

The contributions, limitations and future work for each of the different fields in this project have been discussed in the sections above. The main contributions of the project from the point of view of the core discipline of the project, Information Systems, are summarised as:

- **An information system for psychotherapy research.** An information system, consisting of FERAL and 'live' data was developed to be used in psychodrama and psychotherapy research and potentially, training.
- **Indications of the usefulness of videotaping and multiple expert commentary in KE.** The usefulness of videotaping and multiple expert commentary was demonstrated through the use of data collected using EXCOVE in the various psychodrama analyses. Some initial ways in which convergence and divergence in expert commentaries can be used emerged. EXCOVE and its mechanisms may also have relevance to the core IS activities of understanding and modelling user behaviour and acquiring user requirements, especially if users have similar characteristics to experts. EXCOVE may also be applied to investigations within IS. For example, for understanding what expert systems analysts do when they develop systems. Such understanding might be used as a basis for enhancing current systems analysis methodologies and for developing appropriate Computer-Assisted Software Engineering (CASE) tools.
- **Investigation of the domain of CAQDAS and the development of a new system.** Some potential improvements for CAQDAS, which can also be viewed as an application domain for IS, were identified. The development of FERAL and its use in this study's analyses indicated the usefulness of data co-ordination and a flexible interface. It also revealed the utility of using a metaphor (*sheets-of-paper*) for modelling the behaviour of a system. The development of FERAL also supported the value of *evolutionary prototyping* as a systems development strategy and identified some features that assisted its implementation. Development of, and experience in, *evolutionary prototyping* will provide some indications on how information systems can adapt and keep pace with a dynamic world where the rate of change appears to be increasing. Another way FERAL may benefit IS is through IS researchers using FERAL to assist them in their interpretative and qualitative research endeavours. Such endeavours are necessary to repair a lack of diversity in research approaches in IS and provide an opportunity for the issues concerning the design, implementation, and impact of information systems to be understood in their complexity. When such approaches are used appropriately as indicated by Myers (1997) with critical hermeneutics, research can be both rigorous and relevant.
- **The value of domain immersion.** The project has indicated the value of beginning with a focus on an application domain's needs, and appreciating and understanding them through immersion in the domain. The two main advantages were the identification of the innovations in KE and CAQDAS, and the subsequent testing of these innovations with a real, complex set of data.

References

- Agar, M. (1991). The right brain strikes back. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research*, (pp. 181-194). London: Sage.
- Alexander, J. F., Holtzworth-Munroe, A., & Jameson, P. (1994). The process and outcome of marital and family therapy: Research review and evaluation. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 595-627). New York: John Wiley & Sons.
- Anderson, J. R. (1983). *The architecture of cognition*. Cambridge, MA: Harvard University Press.
- Avison, D. (1997). The 'discipline' of Information Systems: Teaching, research, and practice. In J. Mingers & F. Stowell (Eds.), *Information Systems: An emerging discipline*, (pp. 113-136). London: McGraw-Hill.
- Avison, D. E., & Fitzgerald, G. (1995). *Information systems development: Methodologies, techniques and tools*. (2nd ed.). London: McGraw-Hill.
- Barbour, A. (1995). *Myth, mysticism, and psychotherapy*. The center for experiential learning newsletter, pp. 1-2, 8-9.
- Beck, A. P., Dugo, J. M., Eng, A. M., & Lewis, C. M. (1986). The search for phases in group development: Designing process analysis measures of group interaction. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 615-681). New York: Guilford.
- Bednar, R. L., & Kaul, T. J. (1994). Experiential group research: Can the canon fire? In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed.,). New York: John Wiley & Sons.
- Belkin, H. J., Brooks, H. M., & Daniels, P. J. (1987). Knowledge elicitation using discourse analysis. *International Journal of Man-Machine Studies*, 27, 127-144.

References

- Bellezza, F. S. (1992). Mnemonics and expert knowledge: Mental cueing. In R. R. Hoffman (Ed.), *The psychology of expertise: Cognitive research and empirical AI*, (pp. 204-217). New York: Springer-Verlag.
- Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS Quarterly*, *Sept, 1987*, 369-386.
- Benjamin, L. S., Foster, S. W., & Roberto, L. G. (1986). Breaking the family code: Analysis of videotapes of family interactions by structural analysis of social behavior. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 391-438). New York: Guilford.
- Bergin, A. E., & Garfield, S. L. (Eds.). (1994a). *Handbook of psychotherapy and behavior change* (4th ed.). New York: John Wiley & Sons.
- Bergin, A. E., & Garfield, S. L. (1994b). Overview, trends, and future issues. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 821-830). New York: John Wiley & Sons.
- Beutler, L. E., & Clarkin, J. (1991). Future research directions. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies*, (pp. 329-334). Washington, DC: American Psychological Association.
- Beutler, L. E., Crago, M., & Machado, P. P. P. (1991). The status of programmatic research. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies*, (pp. 325-328). Washington, DC: American Psychological Association.
- Blatner, A. (1988). *Acting-in: Practical applications of psychodrama methods*. New York: Springer
- Blatner, A. & Blatner, A. (1988). *Foundations of psychodrama: History, theory, and practice* (3rd ed.). New York: Springer.
- Blatner, A. (1995). Psychodrama. In R. J. Corsini & D. Wedding (Eds.), *Current psychotherapies*, (5th ed., pp. 399-408). Itasca: F.E.Peacock.

References

- Bloom, M. (1975). Theory, empirical generalization, and the formulation of practice wisdom. In M. Bloom, *The paradox of helping: Introduction to the philosophy of scientific practice*, (pp. 53-67), (Chapter 7). New York: John Wiley & Sons.
- Board of Examiners. (1989). *Training and standards manual*. Victoria, Aust: The Australia and New Zealand Psychodrama Association Inc.
- Borgen, F. H. (1992). Expanding scientific paradigms in counseling psychology. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology*, (2nd ed., pp. 111-139). New York: John Wiley & Sons.
- Brule, J. F., & Blount, A. (1989). *Knowledge acquisition*. New York: McGraw-Hill.
- Burlingame, G. M., Kircher, J. C., & Taylor, S. (1994). Methodological considerations in group psychotherapy research: Past, present, and future practices. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of group psychotherapy: An empirical and clinical synthesis*, (pp. 41-77). New York: John Wiley & Sons.
- Carlson-Sabelli, L., Sabelli, H., & Hale, A. E. (1994). Sociometry and sociodynamics. In P. Holmes, M. Karp, & M. Watson (Eds.), *Psychodrama since Moreno*, (pp. 147-185). London: Routledge.
- Carter, P. (1994). Towards a definition for spontaneity. *Australian and New Zealand Psychodrama Association, Inc. Journal*, 3 , 39-40.
- Carter, P. D., Patrick, J. D., & Deane, F. P. (1995, July). A computer and video database system for research and training in psychodrama. In P. D. Carter (Chair), *Ways Computers and Videos Can Assist Psychodrama*. Symposium conducted at the meeting of the Australian and New Zealand Psychodrama Association Inc. Annual Conference, Adelaide, Australia.
- Carter, P., & Patrick, J. (1997, April). *Expert Commentary on Videoed Expertise: An approach to knowledge elicitation in little-understood complex domains*. Paper presented at the 3rd Pacific Asia Conference on Information Systems, Brisbane, Australia.
- Checkland, P., & Scholes, J. (1990). *Soft systems methodology in action*. Chichester: Wiley.

References

- Clancey, W. J. (1993). The Knowledge Level Reinterpreted: Modeling Socio-Technical Systems. In K. M. Ford & J. M. Bradshaw (Eds.), *Knowledge Acquisition as Modeling*. New York: John Wiley & Sons.
- Clayton, G. M. (1988). Psychodrama in Australia and New Zealand. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 41(2), 63-75.
- Clayton, G. M. (1989). *Group work training manual*. Caulfield, Victoria: Australian College of Psychodrama.
- Clayton, G. M. (1991). *Directing psychodrama: A training companion*. Caulfield, Victoria: ICA Press.
- Clayton, G. M. (1992). *Enhancing life & relationships: A role training manual*. Caulfield, Victoria: ICA Press.
- Clayton, G. M. (1993). *Living pictures of the self: Applications of role theory in professional practice ad daily life*. Caulfield, Victoria: ICA Press.
- Clayton, M. G. (1994). Role theory and its application in clinical practice. In P. Holmes, M. Karp, & M. Watson (Eds.), *Psychodrama since Moreno*, (pp. 121-144). London: Routledge.
- Coffey, A., Holbrook, B., & Atkinson, P. (1996). Qualitative data analysis: Technologies and representations. *Sociological Research Online*, 1(1), <<http://www.socresonline.org.uk/socresonline/1/1/4.html>>.
- Conrad, P., & Reinartz, S. (1984). Qualitative computing: Approaches and issues. *Qualitative Sociology*, 7, 34-60.
- Cooke, N. J. (1994). Varieties of knowledge elicitation techniques. *International Journal of Human-Computer Studies*, 41, 801-849.
- Cooke, N. M., & McDonald, J. E. (1988). The application of psychological scaling techniques to knowledge elicitation for knowledge-based systems. In J. H. Boose & B. R. Gaines (Eds.), *Knowledge acquisition tools for expert systems*, (pp. 65-82). London: Academic Press.

References

- Cordingley, E. S. (1989). Knowledge elicitation techniques for knowledge-based systems. In D. Diaper (Ed.), *Knowledge elicitation principles, techniques and applications*, (pp. 89-173). Chichester: Ellis Horwood.
- D'Amato, R. C., & Dean, R. S. (1988). Psychodrama research - therapy and theory: A critical analysis of an arrested modality. *Psychology in the schools*, 25, 305-314.
- De-Riet, V. V., Korb, M. P. & Gorrell, J. J. (1980). *Gestalt therapy: An introduction*. New York: Pergamon Press.
- Demby, A., & Budman, S. H. (1991). Harvard community health plan mental health research program. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies*, (pp. 41-47). Washington, DC: American Psychological Association.
- Denzin, N., & Lincoln, Y. (Eds.). (1994). *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Dey, I. (1993). *Qualitative data analysis: a user-friendly guide for social scientists*. London: Routledge.
- Dey, I. (1995). Reducing fragmentation in qualitative research. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 69-79). London: Sage.
- Dies, R. R. (1985). A multidimensional modal for group process research: Elaboration and critique. *Small Group Behavior*, 16(4), 427-446.
- Dowrick, P. W. (Ed.). (1991). *Practical guide to using video in the behavioral sciences*. New York: John Wiley & Sons.
- Eaves, D. (1994). *Experts, expertise and professional's explanations*. Paper presented at the 5th Australasian Conference on Information Systems, Melbourne, Australia.
- Elliott, R. (1986). Interpersonal process recall (IPR) as a psychotherapy process research method. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 503-527). New York: Guilford.

- Elliott, R., & Shapiro, D. A. (1992). Client and therapist as analysts of significant events. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 1163-1186). London: Sage.
- Ericsson, K. A., & Simon, H. A. (1993). *Protocol analysis: Verbal reports as data*, revised edition. Cambridge, Mass: MIT Press.
- Fielding, N. (Sept, 1994). Getting into computer-aided qualitative data analysis. *ESRC Data Archive Bulletin*(57).
- Ford, K. M. & Bradshaw, J. M. (1993). Introduction: Knowledge Acquisition as Modeling. In K. M. Ford & J. M. Bradshaw (Eds.), *Knowledge Acquisition as Modeling* (pp. 1-7). New York: John Wiley & Sons.
- Ford, K. M., Bradshaw, J. M., Adams-Webber, J. R., & Agnew, N. M. (1993). Knowledge Acquisition as a Constructive Modeling Activity. In K. M. Ford & J. M. Bradshaw (Eds.), *Knowledge Acquisition as Modeling*, (pp. 9-32). New York: John Wiley & Sons.
- Fowler, R. (1992). *All the world's a stage: Using psychodrama in individual counselling and psychotherapy*. Unpublished psychodrama thesis, Caulfield, Australia: ANZPA.
- Fox, J. (1994). *Acts of service: Spontaneity, commitment, tradition in the nonscripted theatre*. NY: Tusitala.
- Fox, J. (Ed.). (1987). *The essential Moreno*. New York: Springer.
- Freeman, P. A. (1992). Needed research in systems analysis and design. In W. W. Cotterman & J. A. Senn (Eds.), *Challenges and strategies for research in systems development*, (pp. 23-31). Chichester, UK: Wiley.
- Frey, L. R. (1994). The naturalistic paradigm: Studying small groups on the postmodern era. *Small Group Research*, 25(4), 551-577.
- Fuhriman, A., & Burlingame, G. M. (1994a). Group psychotherapy: Research and practice. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of group psychotherapy: An empirical and clinical synthesis*, (pp. 3-40). New York: John Wiley & Sons.

- Fuhriman, A., & Burlingame, G. M. (Eds.). (1994b). *Handbook of group psychotherapy: An empirical and clinical synthesis*. New York: John Wiley & Sons.
- Gaines, B. R. (1987). An overview of knowledge-acquisition and transfer. *Int. J. Man-Machine Studies*, 26, 453-472.
- Gaines, B. R., Shaw, M. L. G., & Woodward, J. B. (1993). Modeling as framework for knowledge acquisition methodologies and tools. *International Journal of Intelligent Systems*, 8, 155-168.
- Galliers, R. (1992). Choosing information systems research approaches. In R. D. Galliers (Ed.), *Information systems research: Issues, methods and practical guidelines*, (pp. 144-162). Henley-on-Thames: Alfred Waller.
- Galliers, R. (1997). Reflection on Information Systems research: twelve points of debate. In J. Mingers & F. Stowell (Eds.), *Information Systems: An emerging discipline*, (pp. 141-157). London: McGraw-Hill.
- Garfield, S. L., & Bergin, A. E. (1994). Introduction and historical overview. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 3-18). New York: John Wiley & Sons.
- Goldman, E. E., & Morrison, D. S. (1984). *Psychodrama: Experience and process*. Dubuque, Iowa: Kendall/Hunt.
- Gorden, R. L. (1975). *Interviewing: Strategy, techniques, and tactics*. Homewood, Ill: Dorsey.
- Gordon, S. E. (1992). Implications of cognitive theory for knowledge acquisition. In R. R. Hoffman (Ed.), *The psychology of expertise: Cognitive research and empirical AI*, (pp. 99-120). New York: Springer-Verlag.
- Greenberg, I. A. (Ed.). (1974). *Psychodrama: Theory and therapy*. New York: Souvenir Press.
- Greenberg, L. S. (1986). Research strategies. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 707-734). New York: Guilford.

References

- Greenberg, L. S. (1992). Task analysis: Identifying components of intrapersonal conflict resolution. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 22-50). London: Sage.
- Greenberg, L. S., & Pinsof, W. M. (1986a). Process research: Current trends and future prospects. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 3-20). New York: Guilford.
- Greenberg, L. S., & Pinsof, W. M. (Eds.). (1986b). *The psychotherapeutic process: A research handbook*. New York: Guilford.
- Greenberg, L., Elliott, R., & Lietaer, G. (1994). Research on experiential psychotherapies. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 508-539). New York: John Wiley & Sons.
- Gruber, T. R. (1989). *The acquisition of strategic knowledge*. Boston: Academic Press.
- Gurman, A. S. (1987). The effective family therapist: Some old data and some new directions. In M. Baldwin & V. Satir (Eds.), *The use of self in therapy*, (pp. 113-125). New York: Haworth Press.
- Hare, J. R. (1988). Psychodrama in Israel. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 41(2), 51-57.
- Hart, A. (1992). *Knowledge Acquisition for expert systems*. New York: McGraw-Hill.
- Heather, N., & Lee, R. M. (1995). Expert systems for the social scientist. In R. M. Lee (Ed.), *Information technology for the social scientist*, (pp. 169-188). London: UCL Press.
- Hermansson, G. (1992). *Eclectic counselling: Working with an integrated model*. Palmerston North, NZ: HW Associates.
- Hill, C. E., & O'Grady, K. E. (1985). List of therapist intentions illustrated in a case study and with therapists of varying theoretical orientations. *Journal of Counseling Psychology*, 32, 3-22.

References

- Hill, C. E., O'Grady, K. E., Balenger, V., Busse, W., Falk, D. R., Hill, M., Rios, P., & Taffe, R. (1994). Methodological examination of videotape-assisted reviews in brief therapy: Helpfulness ratings, therapist intentions, client reactions, mood, and session evaluation. *Journal of Counseling Psychology*, 41(3), 236-247.
- Hirschheim, R. A. (1992). Information systems epistemology: An historical perspective. In R. D. Galliers (Ed.), *Information systems research: Issues, methods and practical guidelines*, (pp. 28-60). Henley-on-Thames: Alfred Waller.
- Hoffman, R. R. (1992). Doing psychology in an AI context: A personal perspective and introduction to this volume. In R. R. Hoffman (Ed.), *The psychology of expertise: Cognitive research and empirical AI*, (pp. 3-11). New York: Springer-Verlag.
- Holmes, P. & Karp, M. (Eds.). (1991). *Psychodrama: Inspiration and technique*. London: Tavistock/Routledge.
- Holmes, P. (1991). Classical psychodrama: an overview. In P. Holmes & M. Karp (Eds.), *Psychodrama: Inspiration and technique*, (pp. 7-14). London: Tavistock/Routledge.
- Holmes, P., Karp, M., & Watson, M. (Eds.). (1994). *Psychodrama since Moreno*. London: Routledge.
- Horvath, A. O., Marx, R. W., & Kamann, A. M. (1990). Thinking about thinking in therapy: An examination of client's understanding of their therapist's intentions. *Journal of Consulting and Clinical Psychology*, 58, 614-621.
- Kagan, N. (1975). Influencing human behavior: Eleven years with IPR. *Canadian Counselor*, 9, 44-51.
- Kagan, N. I., & Kagan, H. (1991). Interpersonal Process Recall. In P. W. Dowrick (Ed.), *Practical guide to using video in the behavioral sciences*, . New York: John Wiley & Sons.
- Kanas, N. (1991). University of California, San Francisco: group therapy research program. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies*, (pp. 305-308). Washington, DC: American Psychological Association.

References

- Kane, R. (1992). The potential abuses, limitations, and negative effects of classical psychodrama techniques in group counseling. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 44(4), 181-189.
- Karp, M. (1988). Psychodrama in Britain: Prophecy and legacy. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 41(2), 45-50.
- Katz, D., & Resnikoff, A. (1977). Televised self-confrontation and recalled affect: A new look at videotape recall. *Journal of Counseling Psychology*, 24, 150-152.
- Kazdin, A. E. (1980). *Research design in clinical psychology*. New York: Harper & Row.
- Kazdin, A. E. (1994). Methodology, design, and evaluation in psychotherapy research. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 19-71). New York: John Wiley & Sons.
- Kelle, U. (Ed.). (1995). *Computer-aided qualitative data analysis: Theory, methods and practice*. London: Sage.
- Kelle, U., & Laurie, H. (1995). General methodological issues. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 19-28). London: Sage.
- Kelle, U. (1997). Theory building in qualitative research and computer programs for the management of textual data. *Sociological Research Online*, 2(2), <<http://www.socresonline.org.uk/socresonline/2/2/1.html>>.
- Kellermann, P. F. (1987). Outcome research in classical psychodrama. *Small Group Behaviour*, 18(4), 459-469.
- Kellermann, P. F. (1992). *Focus on psychodrama: The therapeutic aspects of psychodrama*. London: Jessica Kingsley Publishers.
- Kemp, E. A. (1996). *The role of the individual project in teaching knowledge acquisition*. Paper presented at the International Conference on Software Engineering, Education, and Practice, Dunedin, NZ.

- Kemp, E. A., Todd, E. G., Silva, A. d., & Gray, D. I. (1994,). *Knowledge acquisition applied to farmer decision making*. Paper presented at the Second Singapore International Conference on Intelligent Systems, Singapore.
- Kidd, A. L. (1987). Knowledge acquisition: An introductory framework. In A. L. Kidd (Ed.), *Knowledge acquisition by analysis of verbatim protocols*, (pp. 1-15). New York: Plenum Press.
- Kipper, D. A. (1986). *Psychotherapy through clinical role playing*. New York: Brunner/Mazel.
- Kipper, D. A. (1992). Psychodrama: Group psychotherapy through role playing. *International Journal of Group Psychotherapy*, 42(4), 495-521.
- LaFrance, M. (1987). The knowledge acquisition grid: a method for training knowledge engineers. *International Journal of Man-Machine Studies*, 26, 245-255.
- Lambert, M. J. (1991). Introduction to psychotherapy research. In L. E. Beutler & M. Crago (Eds.), *Psychotherapy research: An international review of programmatic studies*, (pp. 1-11). Washington, DC: American Psychological Association.
- Lambert, M. J., & Hill, C. E. (1994). Assessing psychotherapy outcomes and processes. In A. E. Bergin & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (4th ed., pp. 72-113). New York: John Wiley & Sons.
- Land, F. (1992). The information systems domain. In R. D. Galliers (Ed.), *Information systems research: Issues, methods and practical guidelines*, (pp. 6-13). Henley-on-Thames: Alfred Waller.
- Landy, R. J. (1986). *Drama therapy: Concepts and practices*. Springfield, Illinois: Charles C Thomas.
- Lee, A. S. (1989). A scientific methodology for MIS case studies. *MIS Quarterly*, March, 1989, 33-50.
- Lee, R. M. (Ed.). (1995). *Information technology for the social scientist*. London: UCL Press.

References

- Lee, R. M., & Fielding, N. G. (1991). Computing for qualitative research: Options, problems and potential. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research*, (pp. 1-13). London: Sage.
- Lee, R. M., & Fielding, N. G. (1995). Users' experiences of qualitative data analysis software. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 29-40). London: Sage.
- Lee, R. M., & Fielding, N. (1996). Qualitative data analysis: Representations of a technology: A comment on Coffey, Holbrook and Atkinson. *Sociological Research Online*, 1(4), <<http://www.socresonline.org.uk/socresonline/1/4/lf.html>>.
- Lenat, D. (1986). CYC: Using common sense knowledge to overcome brittleness and knowledge acquisition bottlenecks. *AI Magazine*, Winter, 65-85.
- Lietaer, G. (1992). Helping and hindering processes in client-centered/experiential psychotherapy. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 134-162). London: Sage.
- Lonkila, M. (1995). Grounded theory as an emerging paradigm for computer-assisted qualitative data analysis. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 41-51). London: Sage.
- Lyytinen, K. J., & Klein, H. K. (1985). The critical theory of Jurgen Habermas as a basis for a theory of information systems. In E. Mumford, R. A. Hirschheim, G. Fitzgerald, & A. T. Wood-Harper (Eds.), *Research methods in information systems*, (pp. 219-236). Amsterdam, The Netherlands: Elsevier Science Publishers B. V.
- Mahoney, M. J., & Patterson, K. M. (1992). Changing theories of change: Recent developments in counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology*, (2nd ed., pp. 665-689). New York: John Wiley & Sons.
- Mallinckrodt, B. (1994). Session impact in counseling process research: Comment on Elliott and Wexler (1994) and Stiles *et al.* (1994). *Journal of Counseling Psychology*, 41(2), 186-190.
- Mangabeira, W. (1995). Computer assistance, qualitative analysis and model building. In R. M. Lee (Ed.), *Information technology for the social scientist*, (pp. 129-146). London: UCL Press.

References

- Martin, J. (1992). Cognitive-Mediational research on counseling and psychotherapy. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 108-133). London: Sage.
- Martin, R. B., & Labott, S. M. (1991). Monitoring the psychodrama process. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 44(3), 99-114.
- Mashino, H. (1988). Psychodrama in Japan. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 41(2), 59-62.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook*. (2nd ed.). Newbury Park, CA: Sage.
- Moreno, J. D. (1994). Psychodramatic moral philosophy and ethics. In P. Holmes, M. Karp, & M. Watson (Eds.), *Psychodrama since Moreno*, (pp. 97-112). London: Routledge.
- Moreno, J. K. (1994). Group treatment for eating disorders. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of group psychotherapy: An empirical and clinical synthesis*, (pp. 416-457). New York: John Wiley & Sons.
- Moreno, J. L. (1953). *Who shall survive?* (First Student Edition ed.). Roanoke, Virginia: Royal.
- Moreno, J. L. (1959). *Psychodrama: Second volume: Foundations of psychotherapy*. New York: Beacon House.
- Moreno, J. L. (1969). *Psychodrama: Third volume: Action therapy & principles of practise*. New York: Beacon House.
- Moreno, J. L. (1977). *Psychodrama: First volume* (4th ed.). New York: Beacon House.
- Moreno, J. L. (1987). Psychodrama production techniques. In J. Fox (Ed.), *The essential Moreno*, (pp. 129-153). New York: Springer.
- Moreno, Z. T. (1969). Psychodramatic rules, techniques and adjunctive methods, *Group Psychotherapy*, (Vol. 22, pp. 73-86).

- Moreno, Z. T. (1974). A survey of psychodramatic techniques. In I. A. Greenberg (Ed.), *Psychodrama: Theory and therapy*, (pp. 85-99). New York: Souvenir Press.
- Musen, M. A. (1993). An overview of knowledge acquisition. In J. M. David, J. P. Krivine, & R. Simmins (Eds.), *Second generation expert systems*. Berlin: Springer-Verlag.
- Myers, M. (1997). Interpretive research in Information Systems. In J. Mingers & F. Stowell (Eds.), *Information Systems: An emerging discipline*, (pp. 239-266). London: McGraw-Hill.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231-259.
- Nunamaker, J. F., Chen, M., & Purdin, T. D. M. (1991). Systems development in information systems research. *Journal of Management Information Systems*, 7(3), 89-106.
- Parker, C. M., Wafula, E. N., Swatman, P. M. C., & Swatman, P. A. (1994). *Information systems research methods: The technology transfer problem*. Paper presented at the Fifth Australasian Conference on Information Systems, Melbourne.
- Parry, W. (1988). Changing face: Psychodrama in Taiwan, Republic of China. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 41(2), 76-78.
- Passons, W. R. (1975). *Gestalt approaches in counseling*. New York: Holt, Rinehart and Winston.
- Pidgeon, H. F., Turner, B. A., & Blockley, D. I. (1991). The use of grounded theory for conceptual analysis in knowledge elicitation. *International Journal of Man-Machine Studies*, 35, 151-173.
- Pinsof, W. M. (1986). The process of family therapy: The development of the family therapist coding system. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook*, (pp. 201-284). New York: Guilford.
- Polster, E. & Polster, M. (1974). *Gestalt therapy integrated*. New York: Vintage Books.

- Prein, G., Kelle, U., Richards, L., & Richards, T. (1995). Introduction: Using linkages and networks for qualitative theory building. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 62-68). London: Sage.
- Reason, P. (1994). Three approaches to participative inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*, (pp. 324-339). London: SAGE.
- Regoczei, S. (1992). The psychology of expertise and knowledge and acquisition: Comments on the chapters in this volume. In R. R. Hoffman (Ed.), *The psychology of expertise: Cognitive research and empirical AI*, (pp. 297-313). New York: Springer-Verlag.
- Regoczei, S., & Plantinga, E. P. O. (1988). Creating the domain of discourse: ontology and inventory. In J. H. Boose & B. R. Gaines (Eds.), *Knowledge acquisition tools for expert systems*, (pp. 293-308). London: Academic Press.
- Reitman, W. R. (1964). Heuristic decision procedures, open constraints, and the structure of ill-defined problems. In M. W. Shelley & G. L. Bryan (Eds.), *Human judgments and optimality*. New York: Wiley.
- Rennie, D. L. (1992). Qualitative analysis of client's experience of psychotherapy: The unfolding of reflexivity. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 211-233). London: Sage.
- Rennie, D. L., & Toukmanian, S. G. (1992). Explanation in psychotherapy process research. In S. G. Toukmanian & D. L. Rennie (Eds.), *Psychotherapy process research: Paradigmatic and narrative approaches*, (pp. 234-251). London: Sage.
- Richards, L., & Richards, T. (1991). The transformation of qualitative method: Computational paradigms and research processes. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research*, (pp. 38-53). London: SAGE.
- Richards, T. J., & Richards, L. (1994). Using computers in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*, . Thousand Oaks, CA: Sage.
- Richards, T., & Richards, L. (1995). Using hierarchical categories in qualitative data. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 80-95). London: Sage.

Rouse, A., & Dick, M. (1994,). *The use of computerized tools in qualitative information systems studies*. Paper presented at the Fifth Australasian Conference on Information Systems, Melbourne.

Rowan, J. (1992). What is humanistic psychotherapy? *British Journal of Psychotherapy*, 9 (1), 74-83.

Schramski, T. G., & Feldman, C. A. (1984). *Selected abstracts of outcome research and evaluation in the action methods*. Tucson Center for Psychodrama: Unpublished manuscript.

Scott, A. C., Clayton, J. E., & Gibson, E. L. (1991). *A Practical Guide to Knowledge Acquisition*. Reading, Mass: Addison-Wesley.

Seidel, J. (1991). Method and madness in the application of computer technology to qualitative data analysis. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research*, (pp. 107-116). London: Sage.

Seidel, J., & Kelle, U. (1995). Different functions of coding in the analysis of textual data. In U. Kelle (Ed.), *Computer-aided qualitative data analysis*, (pp. 52-61). London: Sage.

Shotter, J. (1983). On viewing videotape records of oneself and others: a hermeneutical analysis. In P. W. Dowrick & S. J. Biggs (Eds.), *Using video: Psychological and social applications*, (pp. 199-210). New York: John Wiley & Sons.

Simkin, J. (1979). Gestalt therapy. In R. Corsini (Ed.), *Current psychotherapies* Illinois: F. E. Peacock.

Starr, A. (1977). *Rehearsal for living: Psychodrama*. Chicago: Nelson-Hall.

Stein, & Callahan. (1982). The use of psychodrama in individual psychotherapy. *Journal of Group Psychotherapy, Psychodrama and Sociometry*, 35, 118-129.

Stiles, W. B. (1980). Measurement of impact of psychotherapy sessions. *Journal of Consulting and Clinical Psychology*, 48, pp. 176-85.

References

- Stiles, W. B., Reynolds, S., Hardy, G. E., Rees, A., Barkham, M., & Shapiro, D. A. (1994). Evaluation and description of psychotherapy sessions by using the session evaluation questionnaire and the sessions impacts scale. *Journal of Counseling Psychology*, 41(2), 175-185.
- Taft, L. B. (1993). Computer-assisted qualitative research. *Research in Nursing & Health*, 379-383.
- Tallerico, M. (1991). Applications of qualitative analysis software: A view from the field. *Qualitative Sociology*, 14(3), 275-285.
- Tesch, R. (1989). Computer software and qualitative analysis: A reassessment. In G. Blank et al. (Eds.), *New technology in sociology: Practical applications in research and work*, (pp. 141-154). New Brunswick, NJ: Transaction
- Tesch, R. (1991a). Introduction. *Qualitative Sociology*, 14(3), 225-243.
- Tesch, R. (1991b). Software for qualitative researcher: Analysis needs and program capabilities. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research*, (pp. 16-37). London: SAGE.
- Toukmanian, S. G., & Rennie, D. L. (Eds.). (1992). *Psychotherapy process research: Paradigmatic and narrative approaches*. Newbury Park: Sage.
- Tulving, E. (1983). *Elements of episodic memory*. New York: Oxford University Press.
- Wampold, B. E., & Poulin, K. L. (1992). Counseling research methods: Art and artifact. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology*, (2nd ed., pp. 71-109). New York: John Wiley & Sons.
- Weber, K., & Poon, A. (1994, April). *Marquee: A tool for real-time video logging*. Paper presented at the CHI'94 Human Factors in Computing Systems, Boston.
- Weitzman, E. B., & Miles, M. B. (1995). *Computer programs for qualitative data analysis: A software sourcebook*. Thousand Oaks: Sage.
- Wielinga, B. J., Schreiber, A. T., & Breuker, J. A. (1991). *KADS: A modelling approach to knowledge engineering* : University of Amsterdam.

References

Williams, A. (1989). *The passionate technique: Strategic psychodrama with individuals, families, and groups*. London: Tavistock/Routledge.

Wood, L. E., & Ford, J. M. (1993). Structuring interviews with experts during knowledge elicitation. *International Journal of Intelligent Systems*, 8, 71-91.

Yalom, I. D. (1995). *The theory and practice of group psychotherapy*. (4th ed.). New York: BasicBooks.

Appendix A

Ethics application

Application to Massey University Human Ethics Committee

NAME OF APPLICANT: Philip Carter

CONTACT PHONE NUMBER: 350 4293

DEPARTMENT: Information Systems

CURRENT EMPLOYMENT: Student

PROJECT STATUS: PhD project

FUNDING SOURCES FOR THE PROJECT:

Department of Information Systems, Massey Doctoral Scholarship

NAMES OF SUPERVISORS: Prof. Jon Patrick, Dr. Frank Deane

TITLE OF PROJECT:

A methodology for integrating video, computers, and domain expert knowledge for investigating therapeutic process.

DESCRIPTION OF PROJECT

(a) Justification

Understanding psychotherapeutic process, particularly what aspects of therapy are effective in causing change in clients is difficult. However, current psychotherapy research makes little use of the potential capabilities of video and computers. We believe computers, videos and the knowledge of psychotherapy experts can be integrated to better investigate and understand psychotherapeutic process.

The research will investigate ways to achieve the integration of video, computers and experts' knowledge in the area of psychodrama. Psychodrama is a psychotherapy process where an individual acts out present, past or future situations under the guidance of a therapist who is called the director. This usually occurs in a group situation where group members help play the different roles that emerge. Two examples of an aim in a psychodrama session are gaining clarity about what occurred in a particular situation and identifying a new role that enables a solution to a re-occurring conflict.

The basic procedure for the project will be videorecording psychodramas directed by very experienced and effective directors. Experienced psychotherapists will then describe the process using review of the videorecorded psychodrama sessions. These descriptions will be compared and contrasted with each other, theory and participant descriptions.

Better understanding of what makes a psychotherapy work will assist in the teaching and training of therapists and the design of quicker and more effective therapeutic procedures.

(b) Objectives

Developing ways to integrate videos, computers and expert knowledge to understand psychodrama is the essential aim of this PhD project. A number of tasks will be undertaken and a number of tools will be developed. Some subset of the following will be studied and implemented:-

1. How to capture psychodrama sessions on video.
2. Development of a video database for psychodrama.
3. Use of video for knowledge acquisition from experts. (Experts will be people experienced in psychotherapy process). The experts will describe the psychodrama process using the videorecorded psychodrama sessions.

4. Development of computer systems to support analysis and investigation of the video database.
5. Development of a model to represent experts' knowledge.

One of the purposes of doing this research is as the first step for the development of a multimedia system for teaching and training. An essential component of this multimedia system will be appropriate segments of the videotapes. Using videos of directors who have mastery of psychodrama techniques will make the teaching and training system useful and effective. How much of this system will be built during the course of this PhD project is unclear at this stage.

It is envisaged that several psychodrama sessions will be videorecorded throughout the year of 1995.

(c) Procedure for recruiting participants and obtaining informed consent.

Since a participant's experience in a psychodrama session is unpredictable and sometimes emotional, only participants experienced in psychodrama process will be recruited. The majority will be trainee psychodrama directors and will be contacted through the local Psychodrama Training Institute, its training programs and various training workshops. Using participants experienced in psychodrama will ensure that they are fully aware of the type of processes that occur during a psychodrama session.

The research information sheet and consent form (see attachments) will be sent to prospective participants. These will outline the research, the nature of the present study, what the participants will be required to do and how their confidentiality will be kept. The researcher will speak with all participants to ensure they understand and to clarify any unclear issues. The research consent form will be signed immediately prior to the videorecording.

Information and consent forms concerning the use of the video for teaching and training purposes (see attachments) will be sent with the forms for research. Consent for the training purpose will be requested after the videorecorded session. It is only after the session that participants will know what has happened. The consent form will provide three options for consent: yes, no and delay. Participants will be first given an anonymous consent form. If no one refuses consent, a second and identical consent form will be signed.

(d) Procedures in which research participants will be involved.

Participants will be involved for about 6 hours. They will be a group member in a psychodrama session which will be videorecorded in a studio and so will involve video cameras, camera operators, lighting, and sound equipment. Immediately prior to the session, they will fill out the Research Consent Form. After the session, they will be requested to fill in a simple assessment form and a different Consent Form concerning use of the video for teaching and training. This will take about 3 hours in total. Sometime after the session, the researcher will review the tape with them asking questions about their perceptions and feelings. This will take about 3 hours.

The director will be a special group member in that s/he will be group leader and director of the psychodrama. S/he will be required to lead the group and produce a psychodrama which demonstrates their style of directing.

(e) Procedures for handling information and materials produced in the course of the research

For the research purposes, the videotapes will only be used for the purposes of the study into understanding psychodrama process. This will be mainly by psychotherapy experts describing the psychotherapeutic process based on review of the video data. The majority of these experts will be psychodramatists who have passed the Australian New Zealand Psychodrama Association practical assessment. This will be done under the supervision of the researcher, Philip Carter or his supervisors Prof. Jon Patrick and Dr. Frank Deane.

For the teaching and training purposes, the video and/or multimedia system developed will be used by people interested in increasing their understanding of and training in psychodrama and psychotherapy.

Whenever possible the identity of the participants will remain anonymous.

ETHICAL CONCERNS

(a) Access to participants

Access will be mainly through the local Psychodrama Training Institute. Participants will be experienced in psychodrama process and will often be trainee psychodrama directors. Participation will not count towards any training.

(b) Informed consent

Using participants experienced in psychodrama ensures that participants are fully aware of the type of processes that occur during a psychodrama session.

The information sheets outline what is required from participants and the procedure of the study. The researcher will talk with every participant to ensure this information is understood and to provide clarity on anything that is unclear.

The consent form for using the video for teaching and training will be filled in immediately after the videorecorded psychodrama session. It is only after the session that participants will know what has happened. The first consent form for teaching and training is anonymous and so prevents any participant from feeling pressured to give consent. If no one refuses consent, participants will fill in a second consent form, identical to the first except that it will be signed.

(c) Confidentiality

Confidentiality will be achieved for the research use through the following measures:

- All technical staff will sign a contract of confidentiality as to the non-technical content of the videotaped session.
- Participants will agree not to discuss any information about other participants revealed during the session to anyone except fellow participants and the researchers.
- Videotapes can only be viewed by fellow participants, Philip Carter and experts. Viewers will sign a confidentiality agreement for any video they view and the viewing will always be for the purposes of this study in understanding psychodrama and will be under the supervision of the researcher, Philip Carter or his supervisors Prof. Jon Patrick and Dr. Frank Deane.
- Whenever possible the identities of participants will remain anonymous. However, given the nature of video this may not always be possible.

Confidentiality will be obtained for the teaching and training use by the following measures:

- All viewers of the system will agree to confidentiality of content.
- Whenever possible the identities of persons in the system will remain anonymous. However, given the nature of video this may not always be possible.

Participants will have the right to anonymously refuse permission for this use after the videotaped psychodrama session. They also have the right to delay consent.

(d) Potential harm to participants

Given the experience of both the psychodrama directors and the psychodrama participants, there is a very low risk of harm to participants during the psychodrama session.

(e) Participants right to decline

Participants have the right to withdraw participation during the videorecorded psychodrama session and the subsequent review of the videotape.

(f) Arrangements for participants to receive information

Participants will receive a summary of the research findings upon completion of the research.

(g) Use of the information

Research findings will be published in academic journals and made available to participants and interested organisations such as the Psychodrama Training Institutes.

(h) Conflicts of interest

I do not envisage any conflicts of interest.

LEGAL ISSUES

(a) Ownership of data or materials produced

Video data, video database, and any computer-based system developed will be owned by Massey University Departments of Information Systems and Psychology.

My understanding is that any intellectual property such as conceptual models that are developed are also owned by Massey University.

Appendix B

Filming one forms

Study of Psychodrama using Computers and Videos

Information Sheet - Psychodrama Participants

My name is Philip Carter and I am doing a PhD in Information Systems at Massey University. My aim is to explore ways video, computers, and the collective knowledge of psychodrama experts can be used and integrated for modelling and understanding psychodrama. The research will look at and develop:

- Ways psychodrama sessions can be captured on video.
- A computer-based video and behavioural database of psychodrama.
- Computer tools that will enable experts to carefully analyse and describe psychodrama process as collected in the database.
- Ways to construct a model of psychodrama from expert descriptions.

The research will involve you in one psychodrama session in which you will participate as a group member, possibly as the protagonist and most likely as an auxiliary. During the session, you may experience a range of emotions and thoughts. The session will be video recorded in a studio. This will involve video cameras, camera operators, lighting, and sound equipment. After the session, you will be requested to fill in an assessment form and participate in a discussion of the session.

If you agree to participate, the following procedures will be followed. That:

1. Your confidentiality will be kept through the following measures:
 - All technical staff will sign a contract of confidentiality as to the non-technical content of the videotaped session.
 - Videotapes will only be viewed by fellow participants, Philip Carter, his supervisors Dr Jon Patrick and Dr Frank Deane, and a selected group of qualified (ANZPA) and experienced psychodrama directors (experts). Experts will sign a confidentiality agreement for any video they view and the viewing will be in the presence and under the supervision of the researcher, Philip Carter.
 - Whenever possible the identities of participants will remain anonymous. However, given the nature of video and the psychodrama process, this may not always be possible.
 - Videotapes will not be released to anyone.
2. You are free to withdraw from the research project at any time.
3. A summary of the research findings will be mailed to you upon completion of the research.

Philip Carter
September 1994

Tel: 350 4293

MASSEY UNIVERSITY

PROJECT TITLE: Development of a methodology for integrating video, computers, and domain expert knowledge for investigating psychotherapeutic process.

Consent Form

I have read the Information Sheet for Psychodrama Participants and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I wish to participate in this study under the conditions set out in the Information Sheet.

I have participated in psychodrama sessions before and am aware of the kinds of processes that go on.

I understand my participation in the study is entirely voluntary.

I am free to withdraw at any time I wish.

Name:

Signed:

Date:

Witness:

Date:

Study of Psychodrama Using Computers and Videos

Information Sheet - Further Uses of Videotaped Psychodrama Sessions

As outlined in the previous information sheet, a computer-based system that integrates video and expert knowledge will be developed to model psychodrama. As well as this purpose, the system could serve as an excellent foundation for further systems to be developed. These are:

1. A tool for researchers to investigate and analyse the video and behavioural psychodrama databases.
2. A training aid for psychodrama participants and directors.
3. A system for demonstrating psychodrama.

After the videotaped psychodrama session, you will be given a Further Uses Consent Form so you can indicate which of the above uses (system) you are happy for the videotape be used for. Alternatively, you can request negotiation of terms. This will be done for each of the 3 systems and will be anonymous. If any one person refuses consent for a system, then the videotape will not be used in that system. If consent is obtained from all participants for a system, then you will be given another consent form identical to the first except that it will be signed and witnessed.

Confidentiality will be kept through the following measures:

- All viewers of the system will agree to confidentiality of content.
- Whenever possible the identities of persons in the system will remain anonymous. However, given the nature of video and the psychodrama process, this may not always be possible.

Philip Carter

Tel: 350 4293

September 1994

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Anonymous Consent Form

I have read the Information Sheet for Further Uses for Videotaped Psychodrama Sessions and have had the details explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I have participated in a videotaped psychodrama session and will indicate what further uses the videotape of the session may be used for. "Yes" indicates permission, "no" denial, and "cond" indicates I wish to negotiate some conditions of use; for example, that I view the video and/or system and have certain segments that I specify deleted.

Circle "yes", "no", or "cond".

The videotape can be incorporated into a computer system for:

- | | | | |
|---|-----|----|------|
| 1. researchers to investigate and analyse | yes | no | cond |
| 2. training psychodrama directors and participants. | yes | no | cond |
| 3. demonstrating psychodrama. | yes | no | cond |

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Consent Form

I have read the Information Sheet for Further Uses for Videotaped Psychodrama Sessions and have had the details explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I have participated in a videotaped psychodrama session and will indicate what further uses the videotape of the session may be used for. "Yes" indicates permission, "no" denial, and "cond" indicates I wish to negotiate some conditions of use. For example, that I view the video and/or system and have certain segments that I specify deleted.

Circle "yes", "no", or "cond".

The videotape can be incorporated into a computer system for:

- | | | | |
|---|-----|----|------|
| 1. researchers to investigate and analyse | yes | no | cond |
| . | | | |
| 2. training psychodrama directors and participants. | yes | no | cond |
| 3. demonstrating psychodrama. | yes | no | cond |

Name:

Signed:

Date:

Witness:

Date:

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Technical Personal Confidentiality Form

We maintain a strict and firm policy of confidentiality on all matters concerning participants in videotaped psychodrama sessions.

No information about participants will be passed on to another person.

Any discussion concerning the videotaped session will be limited to technical and recording matters.

I have read the Technical Personal Confidentiality Form and have had an opportunity to have any questions answered by the researcher, Philip Carter. I agree to maintain participant confidentiality as outlined in the Technical Personal Confidentiality Form.

Name:

Signed:

Date:

Witness:

Date:

The Amended Measures to Protect Confidentiality When the Videotaped Psychodrama Session of September 5, 1994 is Used For Research Purposes.

1. Your confidentiality will be kept through the following measures:
 - All technical staff will sign a contract of confidentiality.
 - Participants will agree not to discuss any information about other participants.
 - Videotapes can only be viewed by fellow participants, Philip Carter and experts. Viewers will sign a confidentiality agreement for any video they view and the viewing will always be for the purposes of this study in understanding psychotherapy and will be under the supervision of the researcher, Philip Carter or his supervisors Prof. Jon Patrick and Dr. Frank Deane.
 - Whenever possible the identities of participants will remain anonymous. However, given the nature of video this may not always be possible.

Consent

I have read the above amendments and have had a chance to discuss them with the researcher, Philip Carter.

I give approval for the video to be used for research purposes with the above measures followed to protect my confidentiality.

Name:

Signed:

Date:

Witness:

Date:

Appendix C

Filming two and three forms

Study of Psychodrama Using Computers and Videos

Information Sheet - Psychodrama Participants

My name is Philip Carter and I am doing a PhD in Information Systems at Massey University under the supervision of Professor Jon Patrick and Dr Frank Deane. My aim is to explore ways video, computers, and the collective knowledge of psychotherapy experts can be used and integrated for modelling and understanding psychodrama.

The research will look at and develop:

- Ways psychodrama works to help people.
- How psychodrama sessions can be captured on video.
- A computer-based video database of psychodrama.
- Ways computers and videos can be used to help experts describe psychodrama.
- Ways to construct a model of psychodrama from expert descriptions.
- Ways to aid training of psychodrama directors.

First, I am going to video psychodrama sessions directed by experienced psychodrama directors. My aim will be to use directors who are masters in the psychodrama method. I am also going to contact psychotherapy experts (the majority will be psychodrama directors who have completed the ANZPA practical assessment) and get them to describe psychodrama by viewing the videotapes. Through comparing psychodrama theory and participant and expert descriptions, we hope to build a model of effective psychodrama method.

I will need about 6 hours of your time. First, you will be a group member in a psychodrama session which will be videorecorded in a studio and so will involve video cameras, camera operators, lighting, and sound equipment. Immediately prior to the session, you will fill out the Research Consent Form. During the session, you may experience a range of emotions and thoughts. After the session, you will be requested to fill in a simple assessment form and another Consent Form concerning use of the video for teaching and training. This will take about 3 hours in total. Sometime after the session, I may review the tape with you asking you questions about your perceptions and feelings. This will take about 3 hours. Your participation is for my research purposes and will not count towards your training hours.

If you agree to participate, the following procedures will be followed. That:

1. Your confidentiality will be kept through the following measures:
 - All technical staff will sign a contract of confidentiality.
 - Participants will agree not to discuss any information about other participants.
 - Videotapes can only be viewed by fellow participants, Philip Carter and experts. Viewers will sign a confidentiality agreement for any video they view and the viewing will always be for the purposes of this study in understanding psychotherapy and will be under the supervision of the researcher, Philip Carter or his supervisors Prof. Jon Patrick and Dr. Frank Deane.
 - Whenever possible the identities of participants will remain anonymous. However, given the nature of video this may not always be possible.
2. You are free to withdraw from the psychodrama session and post-session video review at any time.
3. A summary of the research findings will be mailed to you upon completion of the research.

Philip Carter
Tel: (06)350 4293

February 1995

Study of Psychodrama Using Computers and Videos

Information Sheet - Teaching and Training

As well as using the videotape for studying psychodrama (as outlined in the Research Information Sheet), I would also like to use the videotape for teaching and training.

One use would be in a computer-based multimedia system that uses segments of the video and indexes developed during the research. An example of this system in use would be someone wanting to see an example of doubling. The computer would locate an example of doubling using the index and display the appropriate segment of the video. Having video clips of directors who are masters in the use of psychodrama method will help make the teaching powerful and effective.

Users of this system will be those interested in learning about and training in psychotherapy and psychodrama.

You have the right to view the videotape.

After the videotaped psychodrama session, you will indicate on the anonymous Teaching and Training Consent Form whether you give consent, refuse consent or want to delay consent. If any one person refuses consent, then this videotape will not be used for teaching and training. Otherwise, all those who consent will be given a consent form to sign.

Confidentiality will be kept through the following measures:

- All viewers will agree to confidentiality of content.
- Whenever possible the identities of persons in the system will remain anonymous. However, given the nature of video this may not always be possible.

Philip Carter
Tel: (06)350 4293

February 1995

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Research Consent Form

I have read the Information Sheet for Psychodrama Participants and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I wish to participate in this study under the conditions set out in the Information Sheet.

I have participated in psychodrama sessions before and am aware of the kinds of processes that go on.

I agree not to reveal any information about others revealed during the session with anyone except fellow participants and the researchers.

I understand my participation in the study is entirely voluntary.

I am free to withdraw from the psychodrama session and video review at any time I wish. If I do withdraw, I understand that the videotape can be used for the research purposes outlined, however, I have the right to decide if the videotape can be used for teaching and training purposes.

Name:

Signed:

Date:

Witness:

Date:

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Teaching and Training Consent Form - Anonymous

I have read the Information Sheet for Teaching and Training and have had the details explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I have the right to view the videotape.

I have participated in a videotaped psychodrama session and will indicate whether the videotape of the session can be used for teaching and training. "Delay" means I want to delay consent.

I understand that if any participant refuses consent, then the videotape will not be used for teaching and training purposes.

I give permission for the videotape to be used for teaching and training:

yes no delay

.

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Teaching and Training Consent Form

I have read the Information Sheet for Teaching and Training and have had the details explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I have the right to view the videotape.

I have participated in a videotaped psychodrama session and will indicate whether the videotape of the session can be used for teaching and training.

I give permission for the videotape to be used for teaching and training.

Name:

Signed:

Date:

Witness:

Date:

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Technical Personnel Confidentiality Form

No information about participants will be passed on to another person.

Any discussion concerning the videotaped session will be to personnel involved in the project and will be limited to technical and recording matters.

I have read the Technical Personnel Confidentiality Form and have had an opportunity to have any questions answered by the researcher, Philip Carter. I agree to maintain participant confidentiality as outlined in the Technical Personnel Confidentiality Form.

Name:

Signed:

Date:

Witness:

Date:

MASSEY UNIVERSITY

Study of Psychodrama Using Computers and Videos

Viewer Confidentiality Form

No information about participants will be passed on to another person.

Any discussion concerning the videotaped session will be limited to research matters.

I have read the Viewer Confidentiality Form and have had an opportunity to have any questions answered by the researcher, Philip Carter. I agree to maintain participant confidentiality as outlined in the Viewer Confidentiality Form.

Name:

Signed:

Date:

Witness:

Date:

Study of Psychodrama Using Computers and Videos

Participant Details

13 February 1995

You do not need to answer these questions if you don't wish to.

Name:

Tel #:

Address:

Employment:

Involvement in psychodrama (in years) as:

session participant:

director:

trainer:

Total number of hours participation

in psychodrama sessions (approx.):

Qualifications.

Tertiary:

Psychodrama:

Related psychotherapeutic experience:

SESSION EVALUATION QUESTIONNAIRE

Director:

Please circle the number on each line to show how you feel about the session you just had.

This session was:

BAD	1	2	3	4	5	6	7	GOOD
SAFE	1	2	3	4	5	6	7	DANGEROUS
DIFFICULT	1	2	3	4	5	6	7	EASY
VALUABLE	1	2	3	4	5	6	7	WORTHLESS
SHALLOW	1	2	3	4	5	6	7	DEEP
RELAXED	1	2	3	4	5	6	7	TENSE
UNPLEASANT	1	2	3	4	5	6	7	PLEASANT
FULL	1	2	3	4	5	6	7	EMPTY
WEAK	1	2	3	4	5	6	7	POWERFUL
SPECIAL	1	2	3	4	5	6	7	ORDINARY
ROUGH	1	2	3	4	5	6	7	SMOOTH
COMFORTABLE	1	2	3	4	5	6	7	UNCOMFORTABLE

What is your main impression of the session?

At what point was the session most helpful to you? What happened?

At what point do you think was the session most helpful to the protagonist? What happened?

Appendix D

Expert commentary forms

Study of Psychodrama Using Computers and Videos

Information Sheet - Expert Commentator

My name is Philip Carter and I am doing a PhD in Information Systems at Massey University under the supervision of Professor Jon Patrick and Dr Frank Deane. My aim is to explore ways video, computers, and the collective knowledge of psychotherapy experts can be used and integrated for modelling and understanding psychodrama.

The research will look at and develop:

- ways psychodrama works to help people.
- how psychodrama sessions can be captured on video.
- a computer-based video database of psychodrama.
- ways computers and videos can be used to help experts describe psychodrama.
- ways to construct a model of psychodrama from expert descriptions.
- ways to aid training of psychodrama directors.

I have video recorded several psychodrama sessions directed by experienced psychodrama directors. For each video, several commentaries will be collected from experienced psychotherapists, mainly psychodramatists. These commentaries will be integrated into a database with links to the video data. Various analyses will be done on the commentaries and it is envisaged that the system will also be used by trainee directors.

I will need at least an hour of your time. First, you will read this information sheet and then fill out the Expert Consent and Confidentiality Form. You will then view the video-recorded psychodrama sessions and make some commentary. Your commentary will be incorporated into the database and will therefore be available for research and training purposes. You will indicate on the Expert Consent and Confidentiality Form whether you want your name to be associated with your commentary or whether you want to remain anonymous.

You have the right to view the transcript of your commentary.

You are free to withdraw from the commentary process at any time.

A summary of the research findings will be mailed to you upon completion of the research.

Philip Carter
Tel: (06)350 4293

Study of Psychodrama Using Computers and Videos

Expert Consent and Confidentiality Form

I have read the Information Sheet for Expert Commentator and have had an opportunity to have any questions answered to my satisfaction.

I wish to participate in this study under the conditions set out in the Information Sheet.

I agree to limit discussion of the video-taped session to research matters and not to pass any information about participants on to another person.

I understand my participation in the study is entirely voluntary and I am free to withdraw from the video review at any time I wish.

I give permission for my name and details to be associated with my commentary:

yes no

Name:

Signed:

Date:

Witness:

Date:

Commentator's Details

Date:

Name:

Tel #:

Address:

Employment:

Involvement in psychodrama:

session participant: years hours (approx)

director: years

trainer: years

Psychodrama qualifications:

Other qualifications:

Other counselling and therapeutic training and experience:

Training or experience that has an important influence on your commentary:

Appendix E

FERAL's development

E.1 Pre-FERAL developmental systems

This section describes the initial versions of the system and how the author's thinking progressed. From these developments the fundamental design and behaviour of FERAL emerged in November 1996.

(i) Pre-September '95

- Management of the data collected using EXCOVE was conceptualised as requiring five separate but interconnected subsystems: session, commentary, concepts, modelling, and video accessing. Each subsystem was implemented as a Hypercard stack.
- Figure E.1 shows the concepts sub-system which is sized to half the size of a 480*640 screen so that it can sit alongside the commentary subsystem. An area²³ is assigned for each concept. Figure E.1 shows the area for the concept 'observer'. The top left hand button with a downward arrow gives a popup menu for navigation to other subsystems. The floating palette shown in the midright region gives a make function and three modes: delete, rename, resize. When a mode is selected then that operation occurs on the next text field selected.
- Each text field has a name or title button attached at the top left hand corner. Text fields can be moved by dragging on the title and toggled off by clicking on the title (e.g., the temp field is toggled off and only the title is left).
- The button at bottom left gives access to the commentary links that this concept is linked to.
- The system provided some flexibility in being able to move and size text fields. However, operations were indirect by being through a floating palette and the connection between concepts and commentary was not clearly or easily maintained.

²³ An area corresponds to a 'card' in Hypercard and is sometimes referred to as a workspace. It is a sizeable movable window that contains some arrangement of FERAL's windows. A system can have any number of areas, but only one area can be viewed at a time.

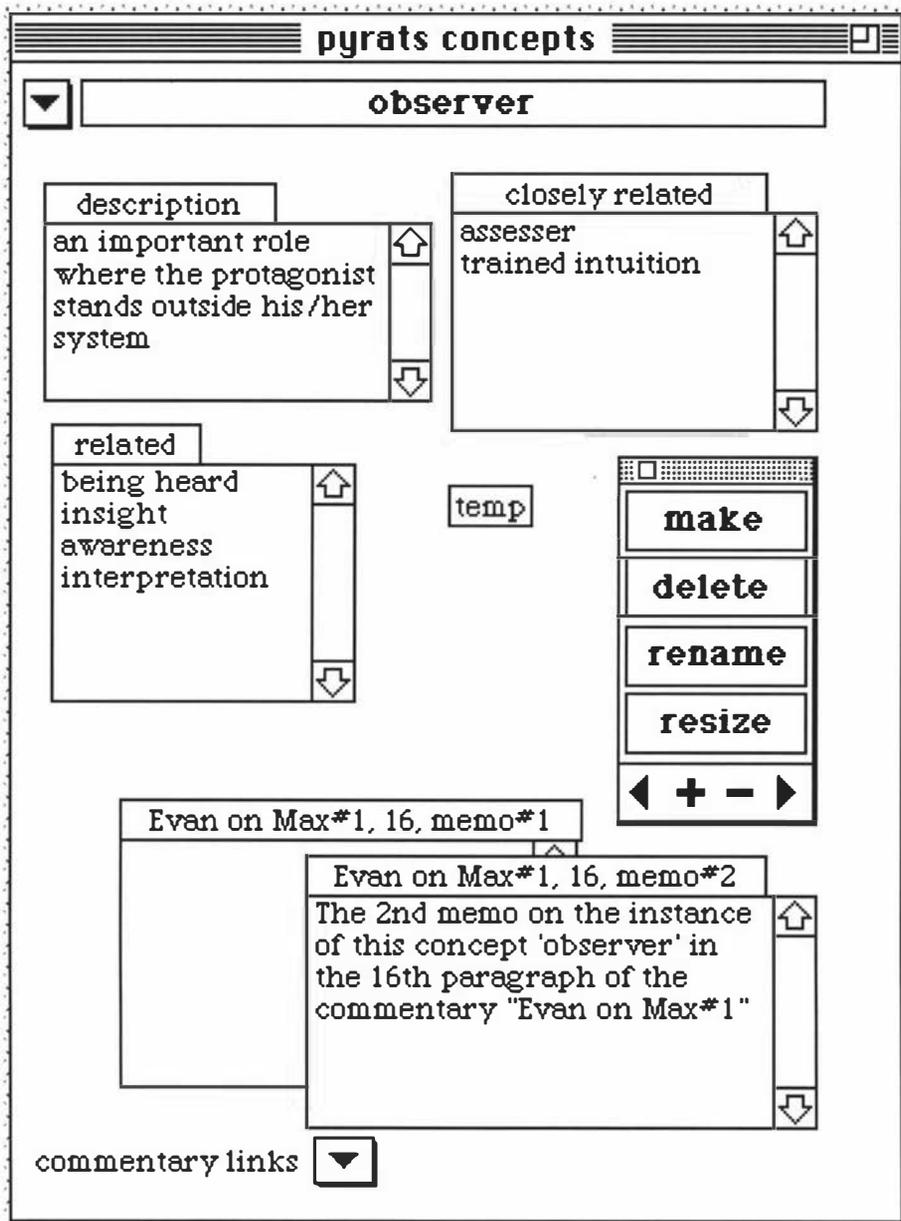
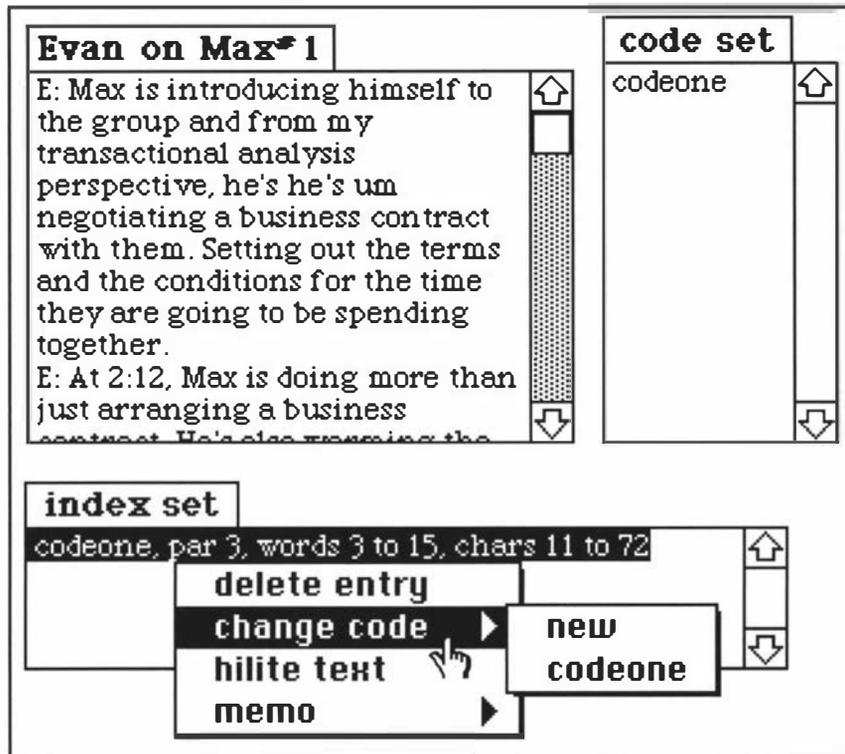


Figure E.1 The concepts subsystem showing the concept 'observer' area

(ii) September - October '95

- The subsystem structure was replaced with a universal system incorporating all the functions of the previous subsystems. The combined session and commentary subsystems became the basis of the new integrated system. The session and commentary text fields required the same functions and were replaced with a 'document' text field. This also made the system more generic and applicable to other domains. Concepts (renamed codes) were integrated into the universal system because having an entire area for a concept (at this stage) was unnecessary and it was more important to have a closer connection between codes and the rest of the system. Codes were made members of a code set.



Note: The popup menu for an index entry is activated.

Figure E.2 Part of an intermediate system pre-FERAL

- There were four types of text fields: document, code set, index set and memo. An area was assigned for each document and related code set and index set. Figure E.2 shows the area for the document 'Evan on Max#1' which was a commentary. All memos for a commentary had their own area.
- Video control was implemented as an independent floating window palette. Control is of a video cassette player. The digital form of video was not used because video of adequate quality for analysis was not currently possible on most computers. Modelling had its own area and basic graphical functions were trialled.
- The system was used in an honour's year project which used a grounded research analysis approach with some of the data collected with EXCOVE. Initial analysis output from the project consisted of several dozen memos. A folder window that can contain memos and/or other folders was added to the system to assist the organisation of memos. Comparison between memos and commentary was cumbersome because they were in different areas.
- Operations via the floating palette were not direct, easy, or intuitive. The floating palette was replaced by popup menus which were attached to the object they operate on (the title for the entire text field or on selected parts of the text); Figure E.2 shows the popup menu for an instance. As well as making operations more direct and easy, not having the palette freed up screen space. However, the title menu now had a mixture of content functions (rename, delete, etc.) and field

management functions (move and resize) and move and resize still required an intermediate menu activity.

E.2 Major FERAL developments

This section describes the important developments that occurred after the basic version of FERAL was established.

(i) November - December '95

- **Window construction.** The text field and its title were re-structured as a window which is the current construction (see figure 6.2). The window management facilities of move, resize, etc., were put in the physical construction of the window, that is: 'resize' is a strip right around the window; 'move' is achieved by dragging on the titlebar; toggling the text window on and off is achieved by clicking on the titlebar; and closing the window is achieved through clicking on the clickbox in the top left hand corner. The cursor changes to show the mode, for example: move is an open hand; resize is a four-directional arrow; and text operations are an I-beam. The appearance and operation is similar to standard windows to enhance ease and familiarity. The more unusual features are the resize all the way around the window, the toggle feature, and the popup menus on window name and selected text.
- **Window types.** The types of windows are shown in Figure 6.5. Note, 'index' was changed to 'instance'. Windows must have unique names to avoid complications for users. Windows can be layered and the selected window comes to the front of any other window.
- **Window independence.** Windows were made independent of areas and transferable between areas. Logical links between windows were maintained. Constraining windows to one particular area is restrictive as mentioned above in the problem with not being able to see memos and the commentaries at the same time. By allowing windows to be independent and to transfer between areas, one of the abilities of *sheets of paper* to be able to be arranged and placed in any way is substantially achieved. As previously discussed, the user can now decide how the system will be arranged, e.g., memos beside the source data they refer to.
- **Instance sets independent.** In order to maximise flexibility, instance sets were considered independent of code sets so that an instance set can have codes from different code sets. A range of rename and deletion options for codes, code sets, and instance sets were implemented to also maximise flexibility. However, these are later found to be confusing and counter-productive and so were simplified (this is outlined later).
- **Coding in one menu operation.** Codes for encoding a segment of document text were put in the selected document text popup menu which means encoding can be

done in one operation. Previously, encoding required two separate operations, i.e., select text and then go to code set and select code. This 2 step process means the system has to somehow differentiate what a user wants when they select a code, i.e., it may be to attach this code to the last selected segment of document text, or it may be for something else, like rename or delete the actual code. A common way of keeping the differentiation is to use different modes of operation, i.e., selection of document text changes the mode to encoding. This use of modes creates unnecessary complexity for the user.

- **Dynamic instantiation.** Dynamic instantiation of program variables was adopted so the program does not have to keep and update information on windows and their movements. Dynamic in this context means that when a menu is activated, the program checks the system for the information it requires rather than storing the information in a temporary variable.
- **Implementation and interface independence.** All program code was put in a separate system (stack) and window objects only have one line of code - a procedure call with the name of the window as an argument to the call. This procedural call remains static and does not have to be changed with a change in programming code. The interface and the implementation of the rest of the system are now independent. This assists compatibility with work already done and ease of upgrade so that the programming code of existing systems and their windows do not have to be changed each time changes and additions are made in other programming code.

(ii) January - February '96

- **Note window.** A note window that is not attached or logically linked to any other window was added.
- **One mode for document.** The document window was changed from multiple modes to none to enhance simplicity. This was achieved by putting encode, view video, and time index into the text segment menu. Previously, before doing these actions they had to be selected as modes from the main window menu.
- **Unique instance set.** One unique instance set was dedicated per intersection of code set and document. This is conceptually cleaner. Multiple instance sets for a document can still be achieved through having multiple code sets.
- **Referential integrity.** The different rename and delete options for codes, code sets and instance sets increase complexity and compromise referential integrity and so potentially create confusion. For example, a code can be deleted from a code set, but the instances may be retained. These options were removed and any renaming or deleting results in the appropriate action on related objects, e.g.: all instances of a renamed or deleted code are respectively renamed or deleted; a deleted document or

code set results in any connected instance set being deleted. Such clear and consistent system behaviour will assist users to be clear on the results of their operations and so keep track of the data and the system they are creating.

(iii) March - April '96

- **Menu hierarchies.** The hierarchies in popup menus were expanded from two to multiple so that all operations options are contained in the menu and any intermediate steps are minimised. This enhances simplicity and speed for the user. For example, transferring a window into an area can be achieved in one menu operation (see Figure 6.7) instead of multiple dialogue boxes.
- **No globals.** A programming problem was fixed so globals were not necessary. Programming code was rewritten to remove all globals. This minimises program complexity, maintains referential transparency (i.e., values of variables not changed unknowingly), and assists ease of future development.
- **Timecode.** A document's timecode was made accessible from the document's text menu and the separate window for timecode was removed.

(iv) May - December '96

- **Multiple memo sources.** Links from a memo were increased from 1 to multiple. A facility to put a memo's source text into the memo's body was added.
- **Text searches.** A range of text searches across documents and instance sets in a system (with multiple areas and windows) was implemented in response to analysis needs.
- **Historical data.** Create and modified dates were added into the 'info' section of a window's menu to provide a simple audit trail and system closure and so assist user's control and knowledge of the system they are building up.
- **Window notes included in info.** Notes for a window were changed from being a separate window to being part of the 'info' section in a window's popup menu.

E.3 Technical details of FERAL's development

The more technical and detailed developments after the basic version of FERAL was established in November 1995 are described.

(i) November '95

- A dynamic instantiating of program variables is adopted so the program does not have to keep and update information on windows and their movements. Dynamic means that when a menu is activated, the program then goes and checks the system

for the information it requires. For example, the programs finds the memos that may be linked or the windows that can be transferred in when that information is needed.

- The interface and its implementation are separated. This means that interface objects are implementation independent and so programming change and addition can occur without having to change any code in interface objects in systems that already have real data. Implementation independence is achieved through various developments that also have other beneficial effects:
 1. All programming code (except 1 line procedure calls in interface objects) is put into a separate script stack. These stacks are dedicated to code and put into the message hierarchy. As well as enabling implementation independence, added stacks send any message to the beginning of the script hierarchy and so remove any necessity to sequence procedures. Multiple stacks can also be inserted into the hierarchy and so circumvent the restriction of 30,000 characters of code per stack which has become a problem.
 2. Code of any interface object (except document field) is kept to a 1 line procedure call with the name of the object as an argument. This call is sent to the code stack.
 3. All non-window objects are removed. Background buttons and fields are removed: the background field for window size is not necessary; the information in the background button for the document field script is put into the code.
- A title window for an area is created.
- The common facilities for different types of windows are put in the beginning of each menu to promote consistency and assist familiarity. These facilities are: rename, copy, delete, transfer, port, print.
- Sort by position and sort by code is added to instance set to aid search and retrieval.
- Consistent and clear cursor behaviour within the document field is implemented after effort.
- Hypercard does not allow more than one text selection highlight at one time.
- Resize, popup and cover buttons are created with each area.

(ii) December '95

- Modals which are fixed and necessitate mouse movement and button clicking are replaced with modals that appear at mouse location and move with the mouse. This minimises mouse movement needed by user. Four types are needed: field with message only, field and enter text, popup button for a single select, and multiselect.
- Multi-select can not move with the mouse and so is implemented with 'showlist' XCMD. However, this can not be dragged and has buttons and so does not conform to interface guidelines. A multi-select window is implemented as an improvement. Multiselect uses popups and also comes up without the usual confirmation modal first. Here the user gets the list and can still cancel quickly if necessary.

- The behaviour of the multi-select window is made similar to the document field (the multi-select window is later made redundant through the addition of a multiple level popup menus). Selecting text behaviour is consistent except for document field and multiselect.
- Options in multiselect window made few and simple, ie., add and action, to assist ease of use.
- Moving modals require a handler to be called and because such a call can not allow an argument with more than 1 word, globals have to be used. Note. After much experimentation, a method is found and globals are later removed. However, in the interim because it is perceived at the moment that globals must be used, globals are used when they needed be. Although this may simplify implementing the task at hand, future implementations become increasingly harder to implement because the values of globals can be changed from anywhere and inevitable do without the programmer being aware. An example is a program bug which took days of effort to track down to a simple change of a global by a seemingly unconnected procedure.
- Change name of index to instance set with the index being time code values for the document.
- To cut down on the number of modals and multi-select windows, rename and delete have 3 options only: this window alone, this + select others, this + auto others. Documents and code sets could have more options, like 'delete this + memos + list instance sets', but this increased functionality compromises simplicity and ease of use.
- The selected window has its title bar highlighted; other windows are white
- Use a popup button for choosing a code to code with. However, it doesn't allow certain characters and doesn't keep the text selection highlighted.
- Hypercard limits fields to 30000 characters which is too small for a document. Different options to increase this limit are: extra layered fields, use of a global, card buttons, or background buttons. The use of background buttons is implemented because: compared with a card button, doesn't need shifting when a window is transferred, can be used by more than 1 document, limits number of card buttons used; compared with fields, only needs one card field so don't need to hide and show fields and keeps window management consistent; and compared with globals values not lost on quitting.

(iii) January '96

- Implemented rename and delete for code sets and instance sets
- Window and field functions tested.
- Window transfer between areas is changed from cut and paste to new window to increase speed.

- Video view also done this way.
- Folder is implemented. Finding a folder's contents in implemented using recursion.
- View video window implemented, one per stack.
- Video control palette made. Palette better than stack as doesn't get lost. However, modal field gets lost behind palette when it appears (asking for setting) at the mouse location, so have to temporarily move palette.
- Time code index window implemented and tied to document.
- The cursor in the 'message/inform and quit' modal can obscure some text so it is put at the bottom.
- Modals moved inside area when on setup the mouse location is outside.
- Automatic time code indexing of a document from the video player is implemented. This is a mode so that a simple click is required on the document text and the time value is got without delay. The adding of a mode to document is a necessary complication.
- Video transcripts and commentaries collected from experts (the real data) are put into 3 working systems (each is a stack).

(iv) February '96

- Delimiter in objects' contents changed to comma and so users not allowed to use commas. Can not use commas for codes and code set, memos and folders. Apply for all windows so greater consistency and simplicity. Also program can use comma-delimited lists.
- Folders put before areas in memo and folder transfer lists.
- Text de-highlighted after encoding.
- Stack template for a working system made
- Video control implementation completed.
- Automatic time code indexing of documents from the video player's counter value implemented.
- Index changed to timecode or 'tc'.
- Copy of window deleted because not necessary as can use the usual file copy of the operating system.
- Combined similar procedures into one procedure e.g., transferwin details into makewin.
- Changed popup to a singlesel for xferwin in and code selection
- Process for encoding when there is a selection of code sets and instance sets can get very complicated. Different options trialled and found providing all options quickly leads to complicated combinations. Best to simplify by first choosing codeset and then see if an instance set is available.
- Replace 3 kinds of code change (1 to 1, 1 to many, many to 1) with simpler option.

- Keep reference for all a windows memos in the window. This speeds the performance but means the program is not entirely dynamic anymore. There is a trade-off between speed and having a dynamic implementation. Given the importance of immediate response for the user for keeping focus on analysis, speed is important. As faster machines are developed both speed and program style can be achieved. Speed is a consideration, not losing track, comfort.

(v) March '96

- One instance set per intersection of code set and document.
- 'Free memo' changed to 'note'
- Transfer in a window implemented.
- Font size, type, and style options implemented for windows.
- Document window made editable.. However, editing ability closed by manual encoding, more than 1 part, or code set attached.
- Free win can be made into a document.
- Trailed different options for setupmodal.
- More complete information added to wins.
- Existing stacks updated.
- Show code for a segment of document text implemented.

(vi) April '96

- Popup menus changed to multiple levels so all options can be incorporated into the hierarchical menu, e.g., transfer in, go to area, font, encode (all codes in hier with error message if no cset), choose cset/iset (alternatives in hier), link to memo. A major advantage for the design goals of simplicity and efficiency. However, there is a processing delay (3 seconds if 40 codes).
- Menus created dynamically; e.g., transferin window, codes, areas are all done dynamically on the spot. Single sel no longer needed and integrated into popupmenus. Some globals able to be removed. Keeping an updated copy of codes for example means have to update it each time a code is made, renamed, deleted.
- All globals removed with the discovery of how to pass a multiple word argument in a do command. Use the variable 'quote' and put around argument. No globals preserves referential transparency, e.g. makeviewvideo changed global 'gwin' from doc name.
- Standard modal for user value entry used to remove need for last global.
- Changed mulit-select back to showlist XCMD so there is multiple dis-continuous select.
- Transfer for memo, note, folder split into folder and area so "folder" is no longer needed to distinguish a folder in a folder line

- Changed 'line' to paragraph in document.
- Title window for area deleted as not necessary. The user can use a note window if they want a title to an area.
- Delete area implemented.
- Added information to indicate window and area.
- Folder and memo transfer lists implemented recursively.
- Transfer window slow. Tried using cut and paste but slower than makewin.
- Changed handlers to less than 35 lines for efficient compiled code.
- Design decision to keep submenu number of options to no more than 5 if possible. Background menu redone so options more hierarchical with less options per submenu.
- Font put into 3 categories: type, size, style to more logical.
- A folder and its windows must be in one area. All other windows free.

(vii) May '96

- Export and import of codes implemented.
- Cut, copy and paste area to another stack implemented.
- Window note made for folder.
- Find text string in document with hits put in menu implemented.
- Option for adding timecode values to document print and export added.
- Document body menu changed so timecode displayed in info.
- Don't put show codes in document field as codes can change
- Don't need memo to link to windows.
- Changed instance set part of document window menu
- Don't need memo of memo.
- Multiple links for memos implemented. Options: double (no wasteful), put in code instance line (clutter), and how to keep in memo. Decided since dynamic and will put all memos that can be linked into menu (slow as have to go through all areas), may as well just keep reference in memo and not in source window (saves lots of updating). Links listed in memo after line 20, one line per link. Simplified a huge amount of code. Modifications to a memo has nothing to do with linked windows.
- Changed get text for code in code set so all options on menu, instead of selecting documents (another step) and selecting note (another step)
- Got rid of video view window. Just do one by one from document. If need record could put in video menu in background.
- Put type of window into the window's information (in the menu). This facility plus the ability to name a window means users have a clear identification of the type of window.

(viii) June to December '96

- Different types of find text string facilities made.
- Option for adding a memo's source data into the memo added.
- 'Paragraph' changed to 'line'.
- Added options to check and edit the base time code value.
- Included a create and modified date in info part of window.
- Change window's note from a separate window to inclusion in the popup.

(ix) Notes on terminology

1. 'code' and 'script' are identical.
2. 'procedure' and 'handler' are identical.
3. 'body', 'field', 'text' are identical.

E.4 Future technical developments

The minor developments that have not been implemented yet are listed below.

- Show the codes for a selected segment of document text in the 'info' sub-menu.
- Provide a short cut for retrieving the next search hit in a document. Search hits for a document are currently put in the menu hierarchy and so it is awkward to locate the next hit as it necessitates going through the menu hierarchy again. One option is to have modes. Currently FERAL is modeless (except window management and time coding of document from video) which has the advantage of not confusing the user and adding clutter to the interface. The options are: change the cursor to indicate a change of mode, a command key short cut (next, previous, first, last), and sticky popups that remain active until the next selection which saves the trouble of re-scrolling.
- Write XCMDs (probably in Pascal) for the multiple selection modals (e.g., font selection and selecting documents for global finds) and text searches.
- Grey out and mark the current option e.g., current area in list of all areas.
- Add a text nowrap option to windows.
- Add timecode information to instances.
- Add line and time code information to memo sources.
- Provide an option for creating a memo from global text finds that links to all hits.
- Provide left to right scrolling in a window.
- Provide a quick way to enter timecode for a document rather than line by line. A timecode edit window would allow this and also provide a way to check entries are ascending. Currently the system does not constrain values to be ascending because changing values would not then be possible.
- Provide a global find for all a working system's documents' text for a time period.

Appendix E FERAL's development

- Enable windows to be locked with a password.
- Add the ability to view the video from instances and codes.
- Add documentation for the programming code in the programming code.
- Increase all windows (not just documents) so they can handle more than 30,000 characters.
- Provide an on-line tutorial.
- Provide user preferences where users can choose different levels of power with the highest level enabling use of Hypercard's programming tools.

Appendix F

FERAL's menu functions

The symbols used and what they mean are:

- > indicates this menu item opens into a submenu
- "..." indicates dialogue to follow
- [items] indicates a list of menu items
- x indicates a numerical value

F.1 Background menu

area >	new area...		
	this area >	name: area's name	
		rename...	
		delete	
		cut	
		copy	
	paste		
	go to >	[areas]	
window >	new >	document...	
		code set...	
		note...	
		folder...	
	open >	[closed windows]	
	transfer in >	[areas] >	[windows]
find text >	documents >	hits in doc menus	
		hits in note	
		hits + line in note	
		count in note	
	instance sets >	hits in note	
		hits + text in note	
		count in note	
quit			

- *open* 'closed windows' are for windows in this area, except for 'video control'.

F.2 Document menus

Document window menu

rename...			
delete			
transfer to >	[other areas]		
port >	import...		
	export >	as is...	
		with time code...	
print >	as is...		
	with time code...		
info >	document		
	created: date		
	modified: date		
	x lines		
	x words		
	x characters		
	instance sets >	[instance sets]	
	[notes] >	edit...	
		delete	
	add note...		
find >	text...		
	found text >	[text] >	clear
			[chars x to x]
	character...		
	paragraph...		
	time code...		
instance set >	new for >	[free code sets in area]	
	go to >	[instance sets]	
tc using video			
close edit			
part >	[no of parts]		
font >	size >	[sizes]	
	type >	[types]	
	style >	[styles]	

- A document has 2 modes: edit and post-edit which have different window menus. The edit menu does not have the *find* submenus or the *tc using video* facility. The post-edit menu does not have the *close edit* menu.
- *delete* also deletes any bound instance sets.
- *import* is only available in edit mode.
- *found text* contains the results of any text finds.
- *new instance set* is for any code sets in the area that don't have an instance set for this document.
- *tc using video* is a mode where a click on the document text will set that line's time index to the video counter value.
- there is no *part* submenu if the text is under 30000 characters. For every 30000 characters there is one part.

Document field menus

Edit menu

cut		
copy		
paste		
de-select		
font >	size >	[sizes]
	type >	[types]
	style >	[styles]

Post-edit menu

encode >	[code sets] >	new...	
		[codes]	
time encode >	base...		
	this line...		
view video			
memos >	make link >	new memo...	
		[areas] >	[memos]
	break link >	[areas] >	[memos]
	go to >	[areas] >	[memos]
info >	chars x to x		
	words x to x		
	in line x		
	time code: x to x		
	show codes...		
copy text			
font >	size >	[sizes]	
	type >	[types]	
	style >	[styles]	

F.3 Codeset menus

Codeset window menu

rename...		
delete		
new code...		
transfer to >	[other areas]	
port >	import...	
	export...	
print		
info >	code set	
	created: date	
	modified: date	
	x codes	
	instance sets >	[instance sets]
	[notes] >	edit...
		delete
	add note	
font >	size >	[sizes]
	type >	[types]
	style >	[styles]

- *delete* automatically deletes any bound instance sets as well.

Codeset field (codes) menus

rename >	new...		
	[codes]		
delete			
get text >	[documents] >	put in memo >	new memo...
			[memos]
		put in note >	new note...
			[notes]
memos >	make link >	new memo...	
		[areas] >	[memos]
	break link >	[areas] >	[memos]
	go to >	[areas] >	[memos]

- *rename* renames all instances as well
- *delete* deletes all instances as well
- if multiple codes are selected then there is no memos submenu.

F.4 Instanceset menus

Instanceset window menu

rename...			
delete			
transfer to >	[other areas]		
export...			
print			
sort on >	code		
	position		
info >	instance set		
	created: date		
	modified: date		
	x instances		
	binding >	document name	
		code set name	
[notes] >	edit...		
		delete	
	add note...		
font >	size >	[sizes]	
	type >	[types]	
	style >	[styles]	

Instanceset field (instances) menu

rename >	new...		
	[codes]		
delete			
hilite text			
memos >	make link >	new memo...	
		[areas] >	[memos]
	break link >	[areas] >	[memos]
	go to >	[areas] >	[memos]

- *rename* 'code' gives a list of all the codes of the attached code set
- if more than one instance is selected then there is no memo submenu.

F.5 Memo menus

Memo window menu

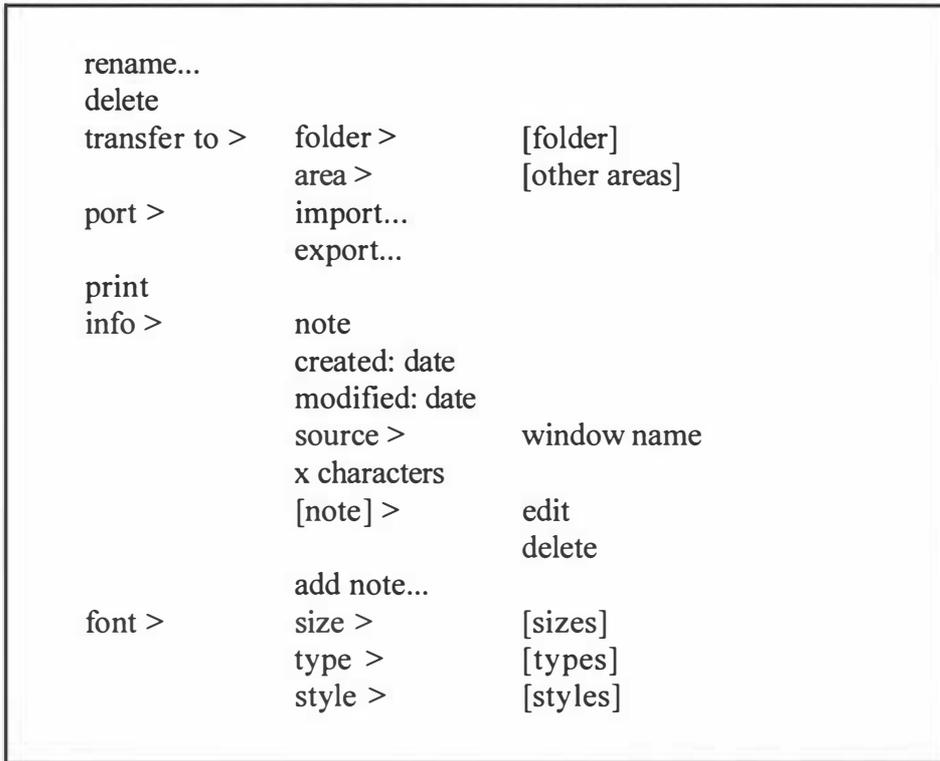
rename...			
delete			
transfer to >	folder >	[folders]	
	area >	[other areas]	
port >	import...		
	export...		
print			
sources >	content of...		
	breaklink >	[windows] >	[references]
	go to >	[windows] >	[references]
info >	memo		
	created: date		
	modified: date		
	[note] >	edit	
		delete	
	add note...		
font >	size >	[sizes]	
	type >	[types]	
	style >	[styles]	

Memo field menu

- The memo field menu is the same as the document field menu in the edit mode

F.6 Note menus

Note window menu



Note field menu

- The memo field menu is the same as the document field menu in the edit mode

F.7 Folder menus

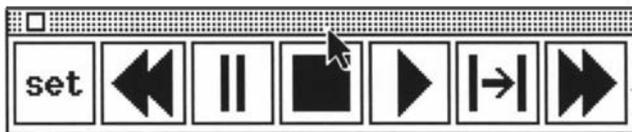
Folder window menu

- the same as the note window menu except *info* = 'folder'

Folder field menu

- the folder field menu is the same as the appropriate window menu except the folder field menu contains the *open* item.

F.8 Video control



- *set* sets the internal counter value of the video player so that it can correspond to the time code value of the system
- *|->|* plays from a time code value to a time code value which are both entered by the user.

(iii) Fine-grain encoding

note. the line number and person speaking is given at the beginning of each comment.

3. E: Yeah, and now ah this ah Friday the 5th of May at 9:30 in the morning.

4. E: Yes, 2:08. Some

general observations

type of expert comment

of the director's ah warm-up of the protagonist.

director action towards protagonist

She selected the protagonist

director process [director didn't select]

on the basis of

how director selected (achievement of a minor goal)

an invitation

director action (request)

to continue

a flow, a time, sequencing comment

working

framing/focus of event, attitude of participants to what they are doing

with the theme.

concept of focus/issue

This piece

segment of event

of the vignette,

type of drama, event

this piece of ah work

name/frame of what is being done, event

is ah a continuation

time process, sequencing

after a break

time event in session

in the otherwise continuous session.

manner of execution, sequencing

And they're just getting back into swing again

group process?

with an invitation

director action

to continue

time/process

work

manner/frame of actions

on the theme

frame/focus for work

of something new, something old.

type of theme

how group momentum is achieved

And a protagonist has volunteered herself

participant action

to come out.

geographical physical movement, or possible psychologically movement [o].

The director is ah warming herself and the group and protagonist up process, could be

goal also

to the forthcoming

time

vignette

type of drama

and she's doing this by

director has goal and actions to achieve goal

encouraging

director action.

the maximisation

process

of a body movement

body movement, object of maximisation

that she picked up.

director process

how a director is getting participants 'warmed-up' (focused, attentive, interested, involved) to the work

The protagonist is sort of slumped forward and the director has invited her to maximise that, make more of it and to start to move around the stage, she wants to get a warm-up that includes action.	qualifier, modifier body posture - protagonist director action - verbal request process, object of director request is body movement how maximisation is requested time, sequence geographical movement geographical space director expectation, desire, want [2] state in protagonist manner/quality of warm-up, action -----object of want. [We don't know why, although theory does indicate]
---	--

how director gets warm-up that includes action.

5. E: Ah the comment at 2:02:42.

The um the director is helping the protagonist get fully into this psychosomatic role here that she adopts and is helping her draw attention to various areas of her body, um and the body posture that she takes in she's warming up to an old role of being, of feeling inadequate relative to the members of the group. So the she's moving round the stage area and the director is directing her awareness and attention to the various parts of the body.	director intention [2]; interpretation; class of action [can it be quantified] process, degree/quantifier type of role [more accurately, aspect of role] meta-description of protagonist functioning protagonist action interpretation of director action object of director aid to protagonist; type of action director wants protagonist to do object of attention class of physical description protagonist action protagonist action type of role description of protagonist functioning protagonist feelings type of feeling relationship between different people who the relationship occurs with physical movement geographical area director action object of director's direction description of body; object of protagonist's attention
---	---

How the director assists the protagonist to get into psychosomatic aspect of role.

6: E: This comment now at 4:17.
AH the um director is seeking

to get the ah um protagonist to articulate	type of director intention; [2]
what the experience is that she's re-entering with this maximisation of body movement and posture and um.	object of direction object of articulation movement in time, memory [3] protagonist action physical physical
While the protagonist is pretty clear about the movement she wants	qualifier state of protagonist [2] physical protagonist wish; [interpretative, difficult to say want]
to make and the posture she wants to adopt,	action physical protagonist wish action
she's having some difficulty articulating what what that is and the director is offering a variety of suggestions that the protagonist can respond to.	protagonist state [2] class of functioning of protagonist, speech. object of articulation manner of director action to protagonist quantifier type of director speech protagonist choice action linked to what has come before. ----- director response to difficulty in articulation
These are not so much leading suggestions or they could be interpreted as leading,	type of suggestion; [not quantified as to what leading means] director speech act
but I believe	interpretation; different observers may have different interpretations. belief of commentator; a meta-comment about commentator's own surety, [it might imply doubt, however, most likely it is acceptance that others would have alternative views]
the director is seeking to imitate to some extent the body posture of the protagonist,	class of director purpose with no implications/statement as to success. [perhaps that it was not totally successful] director action; object of seeking qualifier physical; object of imitation
to get into a double sort of	process psychodrama technique/term for way of being qualifier

situation	description of whole -----
and is offering suggestions	description of doubling class of director speech; interpretative what is being offered [may depend on hearer/receiver as to whether they are heard as offers or truths]
from her experiencing of what that body posture and movement might mean.	director experience physical sub-goal ----- means of achieving sub-goal (insight); source of suggestions; way of forming suggestions or gaining meaning/insight; description of doubling. [I understand from personal experience that imitation can lead to some understanding].
	how to aid protagonist to articulate experience
And the protagonist however is quite thoughtful, is not just accepting everything that's forthcoming, but is considering it and making some modifications in response,	meta class of cognition; manner? [2] [not very specific] protagonist response to someone's offering quantifier from somebody class of cognition. [a little more specific and therefore a little more interpretative cf with thoughtful] object of consideration protagonist speech actions in response to director
is quite slow to put things into words. 7: E: Now a comment at 05:48. Um the director has by encouraging the protagonist to keep moving and keep in the body posture to ah articulate that there is a sense of space in the center of the action area in which she doesn't belong	protagonist state of response to director's suggestions qualifier modifier of response action - verbalisation director encouragement object of encouragement - movement object of encouragement - body posture protagonist action - articulation non-specific ?? geographical descriptor geographical descriptor geographical descriptor protagonists relationship to a geographical area -----

	object of articulation
and so she's skirting around the outside of it in a very crouched form.	physical movement geographical description - relative body posture
The director's now getting the protagonist to interact with the members of the audience,	director direction object of direction to interact
so make a statement that says, I don't belong.	specifics of direction
And as the protagonist does that	direct
she adds to that, and with the encouragement of the director to add,	addition of protagonist, furtherance encouragement to add
that she doesn't belong at work or sort of friends and family.	specifics of encouragement
So	linking
that the director is now inviting her to call on auxiliaries to come out and represent those arenas of her life, those domains of her life which she's started to mention, the work and friends and family, okay.	time - present director action to protagonist verbal protagonist action to group members geographical movement represent - auxiliaries take a role description of part of protagonist description of part of protagonist time protagonist speech action
8: E: Now at 07:03 a comment on what's just happened	what's mentioned description of event
is that the um ah the director has invited the protagonist to call forth the auxiliaries representing those domains of her life and has invited the protagonist	director action - invitation object of what the director has invited the protagonist to do repetition of before
to move around in the way she has been	invitation body and geo movement type of movement
and feel the distinction between herself on the outside relative to those on the inside.	type of sensing a difference geo and psychic relative geo and psychic quantifiable?
And the director has now instructed	director action - instruction

that the protagonist concretise,	object of instruction, psychodrama term and technique
symbolise in some way,	description of concretisation or technical term
this difference	object of concretisation
and to um extend it	e.g. of director instruction, description of technical term - maximise
and maximise	technical term
it to the full,	qualifier of maximise
so	cause effect. Cause unclear
the protagonist has quite	qualifier
willingly	protagonist state
started to do	time
that.	
The protagonist seems	comment of surety of interpretation
now quite	qualifier
warmed up to	technical term
the task	object of warm-up
and is ah ah caught up	state of being in protagonist, trance?
in the drama	object of caught-up
and is not really	qualifier
to my way of thinking	meta comment on commentator's own interpretation, unclear to what it means - as before
conscious	state of being of protagonist
or distracted by	state of being - protagonist
her surroundings.	source of distraction or consciousness
So	conclusion
it seems like	qualifier
a good	qualifier
warm-up	technical term
has been achieved	state of situation
and ah a drama	segment of event/session
is now starting to	time
unfold.	description of type of process

This fine-grain coding continues on in a similar way for comments numbers 9 to 27.

(iv) Director actions listed and then grouped by verb

note. the line number of the commentary is given

warms-up the prot 4
 warms herself and the group and protagonist up 4
 warms prot up to being social commentator, observer of the system 15
 warms prot up to being out of action 15
 warms prot up to observing 15

selects the prot 4

invites (to continue working on theme) 4
invites prot to maximise, make more and start to move around 4
invites prot to call on aux to come out and represent 7
invites the prot to call forth aux to represent domains of prot's life 7
invites the prot to move around 8
invites prot to feel the distinction between herself on the outside relative to those on the inside 8
invites prot to map ? 14
invites prot to express herself?? 14
invites prot to concretise being sucked in 18

encourages the maximisation of body movement 4
encourages prot to keep moving, keep in body posture 7 (therefore gets articulation)
encourages prot to add 7
encourages prot in role 14
encourages prot to make more 14
encourages prot to put words into it 14
encourages prot to articulate meaning behind facial expression 14
encourages aux to mirror 16
encourages prot to put things into words 18
encourages a role reversal 20

picks up 4
picks up prot facial gesture 14
picks up prot body movement 14
picks up on prot fear? of being sucked in 18

wants to get a warm-up that includes action 4

helps prot get fully into psychosomatic role 5
helps prot draw attention to various parts of the body and posture 5
helps prot in observer role 21
helps prot appreciate 21
helps prot to bring out the fullness and depth 21
helps prot integrate 22
helps prot to identify what the parts are 22
helps prot to experience pleasure and enjoyment 26

directs prot awareness to various parts of body 5
directs prot attention to various parts of body 5
directs piece of work 27

seeks to get prot to articulate 6 what the experience is that she's re-entering with this maximisation of body movement bad posture
seeks to imitate the body posture of prot 6

offers a variety of suggestions 6
offers suggestions 6
offers to get mirrors for prot 15

gets into a double sort of situation 6
gets the prot to interact with audience 7
gets prot to engage in some responsiveness to aux 10
gets the prot's system to be represented 13
gets a sense of the dynamics, relationship between auxiliaries 15
gets sculpture to be expanded 24

experiences what body posture and movement might mean 6
experiences the prot disagreeing with aux 17

instructs prot to concretise/symbolise this difference 8
instructs prot to extend and maximise difference to full 8
instructs the aux to move body 9

coaches aux 9
coaches aux on how to be aux 11
coaches aux 11

takes position on stage 9
takes prot out of action space 15
takes the role of wise guide 23

keeps out of action space 9
keeps work clean and crisp 17
keeps drama de-mystified 21
keeps drama at everyday level 21

calls for role reversal 10
calls for role reversal 13
calls for role reversal 17
calls for role reversal 17
calls on aux for multitude of tasks 17

shows aux range of activity 11

illustrates to aux by demonstration 11

explores the prot system 13

observes prot body movement 14
observes depth, significance, power of drama 21
observes prot having feeling 24
observes prot emotions 25

uses prot body movement as indicator of role state 14
uses limitations of space 17
uses normal language 21

supports prot in role of observer 16
supports prot physically with arm 16

remains close to prot 16

works 17
works towards a conclusion 24

enables prot to get into deep psychological water 19

persists in getting prot to act 19
persists in getting prot to feel 19
persists in getting prot to experience 19

humorous 21

suggests to prot how prot could experience and live life differently 23

takes ethical posture?? 23

teaches prot 23

has the prot add to sculpture 24

senses good time to draw to end 24

has prot address her system 24

introduces directly to prot how do you feel 24

says to prot from her director position 24

focuses on prot's affect 25

tries to encourage prot enact emotions that dir observes 25
tries to encourage prot to lighten up 26

responds to aux initiative 26

indicates that the representation is about old way of being 27

Appendix H

Macro codes for a commentary

The code set created to summarise expert B's commentaries on filming three

action cue

being auxiliary has therapeutic benefit

building from consciousness of links to one another

categorising roles

consciousness of response as powerful

dir aims for common warm-up

dir aims to find starting point of action without telling content

dir asks members to focus on their relationship to prot

dir communicates immediately self-presentation is important

dir creates a matrix around role - a scene

dir creates intrigue to keep freshness

dir cultivates idea group is here to do work

dir emphasises flow between roles

dir encourages awareness that group members part of system

dir encourages experimental group process

dir gives spontaneity test

dir investigates and builds sociometric connections

dir moves against tendency for individual to sacrifice

dir produces new developments emerging

dir promotes expression so is not just a re-enactment

dir quickly gets involved in production

dir serious manner responds to greater depth of feeling

dir values beingness with one another

dir works to bring out nature of tele links

dir's position in relation to prot

dramatisation is experimental and explorative

friendliness of group has increased

going back to an earlier scene in life

graceful movement for sitting in audience to being on stage

greater connections between us

group can become norm creator
group experience where individual and group valued
group semi-circle open stage area
group warm-up
group works to value individual and group
integration
invitation to identify our humanness what we have in common
leader mindful that members realise they can take initiative
mirroring allows prot to let go outdated functioning
mirroring then interaction
mirroring with prot looking at self with dir
prot capitalises on warm-up developed during group
prot clearer as acts own role
prot develops ability to move towards
prot displays through role enactment
prot first warms-up to self in situation
prot spontaneity level rising
prot writes the script
psychodrama involves whereas observer risks indifference
range of roles indicates group is warmed-up
role development is a long-term development
role expansion
scene from past has extra things
self-revelation best achieved through dramatic enactment
series of scenes is fruitful
session concludes and members go away to apply learning
setting out physical structure assists warm-up to specific
spontaneity test
system set out through role enactment and role reversal
theatrical method - enter into life
three people interacting signifies situation safe enough
transition from seated to stage relaxed
unifying concept
valuing body expression
warm-up of group members to each other increases
warm-up to on another can occur quickly after break