



Kent Academic Repository

Netten, Ann Penelope (1989) *Residential care and senile dementia : the effect of the physical and social environment of homes for elderly people on residents suffering from senile dementia.* Doctor of Philosophy (PhD) thesis, University of Kent.

Downloaded from

<https://kar.kent.ac.uk/85957/> The University of Kent's Academic Repository KAR

The version of record is available from

<https://doi.org/10.22024/UniKent/01.02.85957>

This document version

UNSPECIFIED

DOI for this version

Licence for this version

CC BY-NC-ND (Attribution-NonCommercial-NoDerivatives)

Additional information

This thesis has been digitised by EThOS, the British Library digitisation service, for purposes of preservation and dissemination. It was uploaded to KAR on 09 February 2021 in order to hold its content and record within University of Kent systems. It is available Open Access using a Creative Commons Attribution, Non-commercial, No Derivatives (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) licence so that the thesis and its author, can benefit from opportunities for increased readership and citation. This was done in line with University of Kent policies (<https://www.kent.ac.uk/is/strategy/docs/Kent%20Open%20Access%20policy.pdf>). If y...

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal*, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

**RESIDENTIAL CARE AND SENILE DEMENTIA:
THE EFFECT OF THE PHYSICAL AND SOCIAL ENVIRONMENT
OF HOMES FOR ELDERLY PEOPLE ON
RESIDENTS SUFFERING FROM SENILE DEMENTIA**

PH.D THESIS

**Ann Penelope Netten
Personal Social Services
Research Unit
November 1989**

CONTENTS

ACKNOWLEDGEMENTS	i
ABSTRACT	iv
SUMMARY	v
CHAPTER 1 ISSUES IN THE RESIDENTIAL CARE OF PEOPLE WITH SENILE DEMENTIA	1
Introduction	
1.1 Background	1
1.2 Defining Dementia	3
1.3 Incidence and Prevalence of Dementia	5
1.4 Characteristics of Dementia	7
1.4.1 Expected Outcome	
1.4.2 Behaviour	
1.5 The Need for Residential Care	10
1.6 Residential Care Policy	12
1.6.1 Physical Design of Homes	
1.6.2 Specialism	
1.6.3 Staffing	
1.6.4 The Role of Residential Homes in the Community	
1.6.5 Performance Reviews and Monitoring	
1.7 The Study	20
1.8 Conclusion	20
CHAPTER 2 THEORETICAL PERSPECTIVES AND PREVIOUS RESEARCH: MODELS OF ENVIRONMENTAL EFFECT AND THE PERSONAL SYSTEM	21
Introduction	
2.1 Types of Model	21
2.1.1 Production of Welfare	
2.1.2 Exchange Theory	
2.1.3 Normalisation	
2.1.4 Environmental Totality	

2.1.5 Environmental Fit	
2.1.6 Ecology of Aging	
2.2 Competence in Normal Aging	33
2.2.1 Physical Competence	
2.2.2 Cognitive Competence	
2.2.3 Personality	
2.3 Effects of Senile Dementia	37
2.3.1 Physical Competence	
2.3.2 Cognitive Competence	
2.3.3 Personality	
2.4 Personal effects on competence of people with senile dementia	43
2.4.1 Personal Characteristics	
2.4.2 Depression	
2.4.3 Life Changes and Stress	
2.5 Conclusion	48
CHAPTER 3 THEORETICAL PERSPECTIVES AND PREVIOUS RESEARCH: THE ENVIRONMENTAL SYSTEM	49
Introduction	
3.1 The Residential Care Service	49
3.2 Supra-Personal Environment	50
3.2.1 Other Residents	
3.2.2 Staffing	
3.3 Personal Environment	58
3.3.1 Drugs	
3.3.2 Personal Relationships	
3.4 The Social Environment	60
3.4.1 Caring Regimes	
3.4.2 Environmental "fit" and Social Climate	
3.4.3 Activities	

3.4.4 Reality Orientation (RO), Reminiscence and Validation Therapy	
3.5 The Physical Environment	68
3.5.1 Design of homes	
3.5.2 Aids to Orientation	
3.5.3 Territory and Privacy	
13.6 Conclusion	76
CHAPTER 4 THE RESEARCH QUESTIONS	77
Introduction	
4.1 The "Testable" Model	77
4.2 Dimensions of Outcome and Effect	81
4.3 Personal System	83
4.3.1 Depression	
4.3.2 Length of Stay	
4.3.3 Competence	
4.3.4 Personal Characteristics	
4.4 Supra-personal environment	85
4.4.1 Type of Home	
4.4.2 Other Residents	
4.4.3 Staff Characteristics	
4.5 The Social Environment	88
4.5.1 Relationships	
4.5.2 Personal Growth	
4.5.3 System Maintenance and Change	
4.5.4 Types of Regime	
4.6 Psycho-tropic Drugs	96
4.7 Physical Environment	96
4.7.1 Ambience	
4.7.2 Personal Territory	
4.7.3 Complexity	
4.7.4 Distinctiveness and Orientation Aids	

4.8 Conclusion	100
CHAPTER 5 METHODOLOGY	101
Introduction	
5.1 Study Design	101
5.1.1 Assessment of Homes	
5.1.2 Establishing the Sample	
5.1.3 Sample Resident Assessment	
5.1.4 Analysis of Data	
5.2 Causality	108
5.3 Validity	109
5.3.1 Internal Validity	
5.3.2 Statistical Conclusion Validity	
5.3.3 Construct Validity	
5.3.4 External Validity	
5.4 Conclusion	120
CHAPTER 6 DESCRIPTION OF THE HOMES, THEIR RESIDENT POPULATION AND THE SAMPLE	122
Introduction	
6.1 The Homes	123
6.1.1 Physical Structure and Function	
6.1.2 Staffing	
6.2 Residents	128
6.2.1 Background and Characteristics	
6.2.2 Physical Competence	
6.2.3 Mental Competence	
6.2.4 General Measures of Dependency	
6.3 The Clifton Assessment Procedures for the Elderly (CAPE)	143
6.3.1 Validity and Reliability	
6.3.2 Comparison with Normative Data	
6.3.3 Sample selection and CAPE scores	

	6.3.4 CAPE Dependency Groups	
	6.3.5 Comparison of Dependency Classifications	
	6.4 Conclusion	152
CHAPTER 7	THE SOCIAL ENVIRONMENT OF HOMES: CARING REGIMES	153
	Introduction	
	7.1 Methodology	154
	7.2 Validity and Reliability	156
	7.3 Results	159
	7.3.1 Relationships	
	7.3.2 Personal Growth	
	7.3.3 System Maintenance and Change	
	7.4 Conclusion	172
CHAPTER 8	THE SOCIAL ENVIRONMENT: SOCIAL CLIMATE AND REGIME CLASSIFICATION	173
	Introduction	
	8.1 Methodology	174
	8.1.1 Estimating Variations in Social Climate	
	8.2 Validity and Reliability	177
	8.3 Results	179
	8.3.1 USA Normative Data	
	8.3.2 Variations in Social Climate within Homes	
	8.4 Classification of Homes by Regime Type	185
	8.4.1 Methodology and Resulting Classification	
	8.4.2 Description of Regime Groupings	
	8.4.3 Determinants of type of Regime	
	8.5 Conclusion	196
CHAPTER 9	THE PHYSICAL ENVIRONMENT	198
	Introduction	
	9.1 Types of Design	198

9.2	Ambience	201
9.3	Personal Territory	202
9.3.1	Territorial Area	
9.3.2	Territorial Invasion	
9.3.3	"Own" Chairs as Territory	
9.4	Complexity	206
9.4.1	Assessing the Home Design	
9.4.2	Distinctiveness and Orientation Aids	
9.4.3	Assessing Residents Ability to find their way around	
9.5	Validity and Reliability	213
9.5.1	Route Diagrams	
9.5.2	The "Find" Measure	
9.6	Effects of Home Design on Residents	215
9.6.2	Personal System	
9.6.3	Social Effects	
9.6.4	Design Effects	
9.6.5	Orientation Aids	
9.7	Results	217
9.7.1	Communal Homes	
9.7.2	Group-living homes	
9.7.3	Discussion	
9.8	Conclusion	227
CHAPTER 10	THE MODEL: THE EXPLORATORY ANALYSIS	229
	Introduction	
10.1	Methodology	230
10.1.1	Multicollinearity	
10.1.2	Method of Estimation	
10.2	Identifying Outcome Measures	233
10.3	Independent Variables	235
10.3.1	The Variables Entered Initially	
10.3.2	Personal System	

10.3.3	Supra-Personal Environment	
10.3.4	The Social Environment	
10.3.5	Physical Environment	
10.3.6	Drugs	
10.4	Analysis of Residuals	243
10.4.1	Heteroskedasticity	
10.4.2	Non-Linear relationships	
10.4.3	Mis-specification	
10.5	Results	247
10.5.1	Change in socially disturbed behaviour,	
10.6.2	Change in Apathetic Behaviour	
10.6.3	Change in Level of Orientation	
10.6.4	Change in agitation-smiling index	
10.7	Conclusion	260
CHAPTER 11	THE MODEL: THE STRUCTURAL EQUATIONS	263
	Introduction	
11.1	Structural equation models	263
11.2	LISREL	264
11.3	Methodology	265
11.4	Results	266
11.4.1	Goodness of Fit Index	
11.4.2	Chi-Square Statistic	
11.4.3	Analysis of Residuals	
11.4.4	Modification Indices	
11.5	Inter-relationship of Dependent Variables	271
11.6	The Measurement Error Assumption	272
11.7	Overall Effect of Environmental Influences	274
11.8	The "Lost" Cases	275
11.9	Conclusion	279

CHAPTER 12 CONCLUSION	280
Introduction	
12.1 The Results Reviewed	282
12.1.1 Supra-Personal Effects	
12.1.2 The Social Environment	
12.1.3 The Physical Environment	
12.1.4 Psycho-tropic drugs	
12.2 Research Implications	293
12.2.1 Measures of Outcome	
12.2.2 The Supra-Personal Environment	
12.2.3 The Social Environment	
12.2.4 The Physical Environment	
12.2.5 Drugs	
12.3 Implications for Future Policy and Practice	296
12.3.1 Implications for Practice	
12.3.2 The Monitoring Role of Local Authorities	
12.3.3 Specialist Provision	
12.3.4 Respite Care	
12.3.5 Design of Homes	
12.3.6 Training	
12.4 Conclusion	302

APPENDICES

APPENDIX 1	Instrumentation	304
APPENDIX 2	The Pilot Study	367
APPENDIX 3	Description of the Homes	383
APPENDIX 4	Dependency Groups	392
APPENDIX 5	Measures of Regime	394
APPENDIX 6	The Sheltered Care Environment Scale	402
APPENDIX 7	Complexity Analysis Variables	408
APPENDIX 8	Stepwise Model Variables and Residuals	410
APPENDIX 9	LISREL Model Coefficients and Residuals	426
REFERENCES		430

ACKNOWLEDGEMENTS

My thanks are due to many people without whose advice, practical assistance and support this thesis would not have been possible. My tutor, Ann Clewer, has provided support, advice and, invaluable in a tutor, has been unfailingly available throughout. David Challis has been an excellent source of advice, obscure references and brainstorming sessions, particularly at the start of the study. Robin Darton, who always has that vital reference, has also been very helpful. My thanks are also due to Bleddyn Davies whose support and encouragement have allowed the thesis to be completed.

If it had not been for the existence of the Dora Harvey Memorial Trust the study would never have been initiated. The grant from this trust enabled me to undertake the doctoral programme: the fortuitous arrival of my application and this grant on the same desk on the same day will never cease to amaze me. Financial support was also received at a time of crisis from the Alzheimers Disease Society. The cost of printing the instrumentation for the study exceeded the money available by, what seemed at the time, a huge sum. I shall never cease to be grateful to the Society for their positive and speedy response to a request for help.

The data collected was the result of a lot of work from a lot of people who were astoundingly co-operative in the face of what must have seemed like constant misrepresentation about the amount of time and effort required. In particular, the staff of the 15 homes involved in the study put in an enormous amount of time, effort and enthusiasm. The managerial staff in the social services departments were also unfailingly co-operative and helpful. My thanks are also due to the two social service managers who were prepared to give up their time for interview at the pilot stage.

Before I had access to a word processor, or any of the other benefits associated with being an employee of the PSSRU, several people provided secretarial help: Sue

Bellingham typed the questionnaires, Sandy Meggs typed letters and early versions of the literature review and pilot study, and Lucy Holley was a tremendous help in translating the data on to the computer in a manageable form. Latterly, Anita Whitley has contributed with so many varied tasks (such as typing impossible tables, chasing references and photocopying endless articles) that I dare not try to identify them all for fear of omitting some. Margaret Brown also helped by undertaking the daunting task of typing the references with a cheerfulness I found hard to believe.

I owe a debt of gratitude to Alan Sivell, who produced the diagrams for chapter 9, and to Nick Brawn for photographing these and providing all the other diagrams. Andrew Fenyo also provided expertise in converting computer printout to readable diagrams. The overall appearance of the thesis had been considerably enhanced by their contributions. In the final, tortuous stages of writing, rewriting and editing, Ann Clewer, David Challis, Cliff Netten, Helen Charnley and Jeni Beecham have been an enormous help in commenting on draft chapters. They have helped identify logical omissions, incomprehensible English and the more glaring grammatical errors.

The study would have been impossible to undertake in the absence of an effective, supportive, "informal" network. I shall not try to list all the people who have helped in times of crisis, for fear of leaving someone out. However, I shall never forget the "dry run" of the upgrading seminar with "mathematical consultant" Mary McHale, "media consultant" Phil McHale and "bored onlooker" Cliff Netten. Lindsay Franklin, Mary McHale and Sherry Wilkin were a tremendous help in the early stages of child care arrangements. Since moving to Faversham, Gayle Bayliff has been a reliable, flexible and uncritical "mother's help" and friend. Only another working mother can truly appreciate the importance of that contribution. I must also thank Sue Campbell and Barry Baines and Chris Allen who have all relieved the fort during last minute panics.

Last, but by no means least: Cliff, Katharine and Joanna have had to put up with a lot. If it hadn't been for Cliff's contribution we would probably all be suffering from malnutrition. Katie and Jo have been very tolerant of an erratic, forgetful, impatient mother, who promises she is going to be better now that "after the thesis" has arrived.

ABSTRACT

Projected changes in the population structure are such that there is little doubt that the condition of senile dementia will present a major problem for the "carers", be they professional or "informal", in the coming decades. This problem has to be put in the context of a growing emphasis on caring for elderly mentally infirm people "in the community" rather than in hospitals. It is likely, therefore, that there will be an increased need for, and pressure on, residential care services.

In the residential care of demented elderly people the major policy issues are: the use of specialist facilities, staffing, the role of the home as a community resource, building design, and, increasingly, performance review and monitoring. The study used a model based on the social ecology of aging to examine how these, and other environmental influences impact upon the demented elderly residents of the homes.

The study was limited in scale and any conclusions drawn must be tentative, therefore. However, the results confirm some of the current trends in residential care policy and cast doubt upon others. On balance the evidence is in favour of the use of specialist facilities, although the wide variety of provision under this label needs to be recognised and the formation of "positive" regimes encouraged. Recommendations to enhance the status of residential care staff are supported by the results of the study and there would appear to be a future in the development of in-service training which could build on the strengths and mitigate the weaknesses of backgrounds in nursing qualifications. The use of homes as resource centres for the communities in which they are based, needs careful consideration. While any policy which encourages visitors to keep up regular contact is likely to have a beneficial effect on residents, the provision of short-term respite care in long-term facilities is brought into question by the results of this study. The trend towards group-living units would appear to benefit the spatial orientation of residents. The study provides a starting point for effective monitoring of residential care by linking a number of indicators of "process", such as regime type, to outcomes for residents with senile dementia.

SUMMARY

Introduction

While there are disagreements over precise levels of prevalence and incidence of senile dementia in the elderly population, projected changes in the population structure are such that there is little doubt that people with senile dementia will present a major problem for those who care for them, be they professional or "informal" carers, in the next few decades.

The shift to community care has implications for residential care services. The needs of demented elderly people are such that the effectiveness of community based services is severely limited. Moreover, population and social changes are likely to result in less informal support being available to elderly people in the future. It is likely, therefore, that there will be an increased need for, and pressure on, residential care services. If residential care is to be the "positive choice" proposed by the Wagner Review (1988), for people with senile dementia, more information is needed about the impact of homes upon residents currently in residential care.

The major policy issues in the residential care of demented elderly people are: the use of specialist facilities, staffing, the role of the home as a community resource, and building design. In particular, however, performance review and monitoring are likely to become of increasing importance given the changing role of Local Authorities (Department of Health, 1989).

This study uses a model based on the social ecology of aging to examine how these, and other environmental influences impact upon the demented elderly residents of the homes. This enabled the identification of a number of direct and indirect environmental influences on confused residents which, if confirmed by future research, could provide a useful contribution to residential care policy and practice.

Methodology

15 homes for elderly people were selected from four local authorities: one inner and two outer London boroughs and one shire county. All residents in each home were surveyed on a specified date and from which a sample of 104 "moderately" or "severely" confused residents were selected for this study. A variety of methods, including the Sheltered Care Environment Scale (SCES) (Moos and Lemke, 1984) and Clifton Assessment Procedures (CAPE) (Pattie and Gilleard, 1979) were used to assess the physical and social environment of the homes, and abilities and behaviour of the sample residents. The residents were reassessed after a six month period.

Results

The main findings of the study were:

The characteristics of the staff of the homes have a profound effect upon the residents:

- higher care-staff to resident ratios and low levels of sickness among staff reduced apathy among the sample residents
- low turnover among staff had a positive effect upon residents' orientation abilities
- a background of nursing qualifications has a positive effect on residents' orientation over time but also appears to encourage apathy among residents

The regimes of the homes did appear to affect the well-being of residents:

- care policies and practices reported for residents generally in the homes appeared to bear little relationship to the policy and practice that applied to the sample residents
- using the SCES scales and based on categories developed by Booth (1985) the regimes of the homes were classified as "positive", "mixed" or "restrictive"
- the homes with "positive" regimes had a beneficial effect on the apathy, social disturbance and orientation of residents

- the choice of daily clothing, assumed to reflect an aspect of the control residents had over their daily lives, was associated with reduced social disturbance
- an improvement in orientation was associated with the frequency of visitors to sample residents

The advisability of the provision of respite care in long-stay establishments is called into question:

- a higher turnover of residents, associated with the provision of short-term care, is less likely in homes with positive regimes
- high turnover of residents was also associated with increased socially disturbed behaviour

The ambience of the home, reflected in light and noise levels did appear to affect the residents:

- higher levels of noise were associated with deteriorated orientation and increased socially disturbed behaviour
- in group-living homes higher light levels were associated with residents being better able to find their way around

Personal territory influences were investigated but found to have a limited observable impact on residents:

- smaller bedroom areas, or areas of personal territory, were associated with homes in which all the residents sat in their "own" chair
- the homes in which all residents had their "own" chairs were associated with an increase in agitation

The physical layout of the homes did affect demented residents:

- effects of the "individual experience" of the complexity of the physical environment depended upon the type of home, group-living or communal
- mental ability was of less importance than physical in communal homes

- residents' ability to avoid getting lost within the home was indirectly related to the overall design, but directly related to individuals' abilities and experience of the home
- residents whose bedtime was set by staff were less likely to be able to find their way around the home
- lower level of ability to navigate the homes was associated with an increase in apathy and agitation

The prescription and monitoring of the use of psychotropic drugs in homes appeared to be an issue of some concern:

- sample residents in specialist homes were more likely to be taking psychotropic drugs on average than those in non-specialist homes
- more psychotropic drugs were found to be associated with a lower ability among residents to navigate communal living homes
- increased social disturbance and apathy were also found to be associated with a higher number of psychotropic drugs

Conclusion

The study was limited in scale and any conclusions drawn must be tentative. However, the results confirm some of the current trends in residential care policy and cast doubt upon others. The trend towards group-living units would appear to benefit the spatial orientation of residents, although there was no evidence of the groups developing individual, "family" atmospheres. Recommendations have been made to emphasise the importance of, and to enhance the status of, residential care staff (Wagner, 1988). These are supported by the results of the study, although there was no evidence of the value of social work training. The results suggest that the development of in-service training might build on the strengths and mitigate the weaknesses of nursing backgrounds. On balance, the evidence is in favour of the use of specialist facilities, although the wide variety of provision under this label needs to be recognised and the formation of "positive" regimes encouraged. The use of homes as resource centres for the communities in which they are based needs

careful consideration. While any policy which encourages visitors to keep up regular contact is likely to have a beneficial effect on residents, the provision of short-term respite care in long-term facilities is brought into question by the results of this study.

CHAPTER 1

ISSUES IN THE RESIDENTIAL CARE OF PEOPLE WITH SENILE DEMENTIA

Introduction

During the coming decades one of the major challenges to the health and social services will be the care of the growing population of elderly people with senile dementia (Policy Studies Institute, 1984). The Wagner Review of Residential Care (1988) took as a point of principle that:

Living in a residential establishment should be a positive experience ensuring a better quality of life than the resident could enjoy in any other setting. (p114)

But is it possible to determine if residents with senile dementia are having a positive experience? Is it possible to identify that they are enjoying a better quality of life than they could otherwise? Before such questions can be addressed there needs to be an understanding of the impact of different "settings" or environments upon elderly people with senile dementia. In particular there needs to be an understanding of the effect of the physical and social environment of the homes on the well being of the "confused" residents.

This chapter describes the background to the issue of residential care for demented elderly people. The condition of senile dementia is then defined and the extent of the condition in the population at large identified. Senile dementia is described both in terms of expected outcomes and associated behavioural difficulties. The need for, and role of, homes for elderly people are discussed and the policy issues of concern in the residential care of demented elderly people are outlined.

1.1 Background

Independent living in the community and permanent hospitalisation represent the extreme ends of the spectrum in the "continuum of care". In the policy world the

emphasis is increasingly upon caring for people with physical and mental difficulties in the community. The aim is to shift care as far as possible towards the community end of the "caring continuum" (DHSS, 1981; Griffiths, 1988).

A major consequence of the policy of shifting care of demented elderly people from institutions to the community will be an increased dependence upon carers and community based services. However, the needs of demented elderly people are such that the effectiveness of community based services is severely limited. This is largely because of the level of monitoring required when caring for people whose judgement is poor and whose behaviour can be dangerous to themselves and others (Gray and Isaacs, 1979).

There is also the issue of the future "supply" of carers. Carers tend to be middle aged women not in paid employment (Hicks, 1988). The increase in the proportion of women in waged work together with an aging population will reduce the proportion of elderly people who have carers willing, and able, to care for them at home (Parker, 1981).

The shift to community care generally has implications, therefore, for residential care services. Where carers are absent, community services may be able to provide adequate care for people who are physically dependent. These services are less likely, however, to be able to fulfill needs of unsupported elderly mentally infirm people. Even where carers are present the stresses of caring for people with senile dementia (Sanford, 1975; Levin et al, 1983; Argyle, 1985) are such that at some point for most people temporary or permanent admission to a residential institution of some kind will be necessary (Wagner, 1988).

In contrast to long term hospital care, homes for elderly people ideally represent a form of institutional care which is located in, and forms part of, the community. Compared with hospitals, these are relatively small establishments, normally situated within the geographical area from which residents are drawn. Ideally, residents

should remain members of their local community, while receiving a level of service based monitoring and care which would be impossible in their own homes (Ministry of Health, 1962; DHSS, 1977; Willcocks, 1986).

The increased emphasis on caring for elderly people in the community has resulted in a change in the role of residential care. In section 1.5 the changing population of residential homes resulting from the pressure of policies and demands from elderly demented people is described. The Rising Tide (Health Advisory Service, 1982) found that it was sometimes difficult to distinguish between the cognitive abilities of residents of old peoples homes and patients in continuing care wards in hospital.

Just as the policy of community care puts residential care facilities under increasing pressure from a changing client population, the role of residential facilities is widening. For example homes are being used more than ever for respite care, that is short term admissions to residential care in order to relieve relatives (Allen, 1983). Moreover, there is an increasing expectation that homes should act as resource centres for the community (Barclay, 1982). This comes at a time when residential services, particularly in the statutory sector, are seen as a last resort with care staff of low status who are in a demoralised state (Wagner, 1988).

The growing number of people with senile dementia and the importance of the role of residential care will put the providers of such care under increasing pressure. There is a need, therefore, to assess the policies affecting the provision and regulation of residential care for demented elderly people. Firstly, however, it is useful to have an understanding of the condition and prevalence of senile dementia.

1.2 Defining Dementia

An operational definition of dementia has been given by the Royal College of Physicians Working Party (1984) on Organic Mental Impairment in the Elderly"

Dementia is the global impairment of higher cortical functions including memory, the capacity to solve the problems of day-to-day living, the performance of learned perceptuo-motor skills, the correct use of social skills and control of emotional reactions in the absence of gross clouding of consciousness. The condition is often irreversible and progressive. (p4)

Dementia is defined, therefore, as symptoms and signs which may be the result of different pathological processes in the brain. Dementia can be described as pre-senile or senile depending on an arbitrary age limit (usually 65). Amongst senile dementias two conditions predominate:

- senile dementia of the Alzheimer type (SDAT), the commonest of all, is a primary degenerative disorder of the brain;
- multi-infarct dementia (MID) in which there is death of brain tissue (infarction) consequent upon a disorder of the cerebral circulation (haemorrhage, thrombosis or embolism).

One individual may suffer from either or both of these conditions. Unless there is a specific cause, such as a series of strokes, a firm diagnosis can be made only at autopsy. Diagnosis of dementia while the person is alive is a process of eliminating other possible causes for the symptoms. These causes include the side effects of drugs, alcoholism, urinary tract and chest infections and other mental health problems such as depression.

Precise definitions and diagnoses of people suffering from senile dementia are desirable, but difficult to establish in the absence of clinical judgments. There are a number of diagnostic schemes such as the DSM III diagnostic criteria (American Psychiatric Association, 1980) which are used to determine the existence of dementia or Alzheimers disease. There has been a lack of consistency in methods of

assessment which has led the Medical Research Council (1987) to recommend a set of *minimum data* to be collected in studies funded by the council to aid comparison between research studies.

While the *primary concern* of this study is people with *senile dementia*, the problem to be addressed is the care of elderly people who have general orientation difficulties. Precise definitions are not, therefore, of paramount importance. The focus is upon the perception of the individual in the home, rather than a precise definition which allows causal analysis within dementia sub-types, as would be required in a clinical study.

The category of resident with which the study is concerned is often termed "*confused*". Throughout this study, therefore, the terms "*confused*", "*people with senile dementia*" and "*demented*" people are interchangeable.

1.3 Incidence and Prevalence of Dementia

In spite of the problems of diagnosis, *senile dementia* is an identifiable condition with a completely different prognosis from other mental conditions. There is a marked age gradient in incidence, the mortality rate is much higher and the discharge rate from hospital much lower than for people with non-organic disorders (see section 1.4 below).

Consensus over the prevalence of dementia has developed in recent years on the basis of a number of studies of elderly populations in different countries (Henderson, 1986; O'Conner et al, 1989). Two classic studies were carried out in Newcastle (Kay et al 1964 and 1970). In the first, approximately 5% 'severe' and 5% 'mild' cases of *senile dementia* were found in the population of 65 years and over. In the second, larger study, which used the earlier results, the overall prevalence of *chronic brain syndrome* was 6.25%. Studies in Sweden (Essen-Moller, 1956; Akesson, 1969; Persson, 1980), Denmark (Nielson, 1962; Bollerup, 1975), Japan (Hasegawa, 1974, 1982; Karasawa, 1980) and the US (Pasmanick, et al 1957; Gurland et al, 1983)

among others, have found a remarkably similar prevalence of severe dementia given the differences in dementia criteria and types of population from which they have been drawn.

A number of authors have drawn on these studies to derive overall expected prevalence rates and future growth in the population of people with senile dementia. Preston (1986) used the data from seven studies, and adjusting for age differences estimated that 6% of those aged over 65 were likely to be moderately or severely demented. Ineichen (1987) also reassessed a number of estimates of the incidence of dementia, including the Newcastle studies, examining assumptions and definitions. He concluded that 1% of the 65-74 age group and 10% of those over 75 suffer from dementia. Although these figures are lower than Kay and Bergmann's they predict a larger increase given the expected population changes, so that between 1983 and 2001 there would be a 17.2% increase in the number of people with senile dementia in England and Wales. In areas with high populations of elderly people the increase would be much larger. For example, he estimates a 33.6% increase in the population of demented elderly people in the area served by Bath Health Authority, over the same period.

Other estimates put the increase in the numbers of people with senile dementia even higher. Using figures from Henwood and Wicks (1984), Sinclair (1988) predicts an increase of 51.9% between 1971 and 2001 in Great Britain. This would mean an estimated 450,000 people had senile dementia in 1971 and this would rise to 684,000 by the year 2001.

However, such estimates may be unduly pessimistic. A number of recent studies have identified a much lower prevalence than expected (Pattie et al, 1979; Clarke et al, 1986). O'Conner et al (1989) report a rate of 5.3% for moderate and severe dementia in a population aged 75 years and over. Using estimates by Jorm et al (1987) these authors would have expected a prevalence of 11% in this population. The authors suggest that the differences arise from using a more sensitive screening

method (Cambridge Mental Disorders of the Elderly Examination, CAMDEX), rather than representing part of an overall cohort effect as has been proposed (Hagnell, 1981). Pattie (1986) in a discussion of similar results using Clifton Assessment Procedures for the Elderly (CAPE) suggests differences may be due to assumptions that "mild" impairment would lead to dementia in earlier studies. Henderson (1986) has called for longitudinal studies using sensitive screening instruments to clarify prevalence rates.

Despite the debate concerning prevalence in the population as a whole there is little disagreement that the predominant risk factor is age. Kay et al (1970) found that prevalence varied from 2.3% in persons aged 60-69 to 22% in those aged over 80. O'Conner et al (1989) found 4.1% of all grades of dementia in those aged 75-79, 11.3% of those aged 80-84, 19.1% of those aged 85-89 and 32.6 in those aged 90 years or over. Even if the prevalence in the population as a whole is lower than thought, therefore, the aging population ensures that senile dementia will continue to "confront the world as a major challenge to public health" (Henderson, 1986, p3).

1.4 Characteristics of Dementia

1.4.1 Expected Outcome

By definition senile dementia is a progressive condition and cognitive and behavioural difficulties are likely to increase with age. However Holden and Woods (1982) point out that the rate of deterioration often seems slower when it begins in the 80s rather than when the subjects are in their 60s. Of 43 mentally impaired elderly people who survived a two year period, Kleban et al (1976) found that 16 subjects' behaviour declined, 19 remained stable and 8 showed improvement. Eight categories of functioning were determined by observation ranging from passive non-functional through to full social interaction. Those observed characteristics which seemed to have most influence on outcome were control of aggression and impulsivity, neurosis, seriousness of medical condition, comprehension of situations and sociability and responsiveness.

Expectation of life is considerably reduced for demented patients. Kay et al (1970) found the mean expectation of life in patients over 65 reduced from 10.9 years to 2.3 years for women with senile dementia. For men, average life expectancy reduced from 8.7 years to 2.6 years. 74% of a sample of demented patients had died within 2.4 years against 26% of a sample of mentally alert patients (Kay et al 1970). Roth (1955) found 60% of demented patients had died within 6 months of admission to mental hospital compared to 11% of those with affective psychosis. It is important therefore to distinguish carefully between organic and affective mental disorders whose expected outcomes are very different.

Although there is a consensus that the condition of senile dementia reduces life expectancy, life expectancy among elderly people generally is rising. There is some discussion in the literature regarding the supposed increase in the life expectancy of demented people in recent years, largely because of variations in results between individual studies. Thompson and Eastwood (1981) concluded there was no increase in life expectancy but their study suffered from the same problems as the others - consistency of definitions, especially in defining the onset of the condition. Frequently the date of admission is taken as the starting point but admission policies tend to vary with internal and external pressures. Increased life expectancy among demented people may simply reflect improved nutrition generally and the use of antibiotics (Gruenberg et al, 1976; Bergmann and Jacoby, 1982; Henderson, 1986). Immediate cause of death is often from another condition such as bronchial pneumonia (Woods, 1989) so although there are no direct treatments for, for example, Alzheimers disease itself, medical advances in other fields may affect the life expectancy of people with senile dementia.

1.4.2 Behaviour

Gray and Isaacs (1979) summarise the manifestation of brain failure as:

- a tendency to commit errors,
- a failure to perceive errors and
- a failure to comprehend the consequences of errors.

The onset of dementia tends to be very gradual with memory lapses often compensated for by writing notes or confabulation. To what extent compensatory mechanisms are related to the condition or to the personality of the individual has yet to be established (Woods and Britton, 1985). Referral usually occurs with the onset of more severe symptoms.

Holden and Woods (1982) point out that dementia is sometimes brought to the attention of professional care workers, when an individual experiences a bereavement, change of house or other upheaval. Rather than being a causal factor:

Usually close examination reveals, for example, that the spouse who died was doing a great deal to compensate for the person's deficits that were developing before bereavement; the change of house removes a number of environmental props that were helping to sustain the person's failing functions, and so on.(p11)

Gray and Isaacs list seven symptoms which, although not comprehensive, they suggest most patients will show if observed long enough.

- Lapses in personal hygiene eg refusal to bathe
- Lapses in feeding and dressing eg objectionable feeding habits
- Impairment of domestic skills eg gas turned on and not lit
- Lack of judgement and prudence eg irresponsible expenditure of money
- Cognitive errors eg failure to recognise close relatives
- Personality and interpersonal relations eg groundless accusations
- Miscellaneous offensive behaviours eg verbal sexual advances

The pattern, both of behavioural difficulties and mental deterioration varies from person to person. Personality changes sometimes occur, with some people becoming

disinhibited, although others manage to carry on social conversations in spite of severe deterioration in mental abilities.

The difficulties in caring for people who display such behaviour that they become a danger to themselves and create embarrassment for others is often exacerbated by a lack of insight into their own problems as Sands and Susulki (1983) point out.

Reifler et al (1981) found that cognitively impaired persons living in the home saw themselves as suffering from no significant problems in activities of daily living, in personal health or in family relationships: professional persons and family care givers saw these same people as having problems in almost every area of life. For the person impaired this can lead to the feeling of being interfered with and manipulated; for the person giving care to feelings of being obstructed and unappreciated. (p21)

However many people respond to the symptoms of senile dementia with anxiety and fear (Newroth and Newroth, 1980; Schwab et al, 1985). Holden and Woods (1982) also point out that not all patients have this lack of insight and that many do have some awareness of disintegration and may complain of loss of memory. They state that it is not unusual for such people to show signs of anxiety and depression, perhaps in response to the repeated failures being experienced.

1.5 The Need for Residential Care

In the representations made to the Review of Residential Care (Wagner, 1988) the Alzheimers Disease Society maintained that most people suffering from dementia would need residential care, be it long term or respite, at some point in their lives. Residential care is often seen as appropriate to the needs of people with senile dementia. West and his colleagues (1984) presented a series of vignettes to a large community sample in Scotland. In contrast to their attitude to elderly people with

physical disability, two thirds of the sample felt residential care was appropriate when the elderly person had a mental infirmity.

The attitudes of carers have been found to be of fundamental importance in predicting admission to residential care and carers are more likely to favour residential care if the elderly person is confused (Levin et al, 1989). The problems faced by carers of demented people are such that this is hardly surprising. For example, Sanford (1975) found that in a sample of carers of demented elderly people only 28% were able to leave the house for one hour. Argyle et al (1985) found that caring for people with dementia resulted in depression, embarrassment and reduced social life .

These kind of difficulties can have a profound effect on the carers. For example, Gilleard (1982) found that over 50% of a sample of 40 supporters of elderly mentally infirm people had significant psychological disturbances. Various studies have used standard scales to measure morale or depression among carers of demented elderly people. They have found that even when there is little evidence of psychiatric disturbance, morale is generally very low (Hirschfeld, 1978; Gilhooly, 1984).

There are limits, therefore, to the degree to which people with senile dementia can be cared for in the community (Argyle et al, 1985). Sinclair (1988) concludes that the combination of carer strain and "determined" community care policies resulting in closure of long term geriatric and psychogeriatric wards is likely to result in an increasing proportion of confused people in local authority residential care. Although some observers have reservations about this prediction (Booth, 1983), the evidence to support this case is mounting.

Wilkin et al (1978) found that between 1976 and 1977 there was an increase in residents with psychogeriatric problems in seven local authority homes while three long-stay hospital wards experienced a reduction in such problems. The Personal Social Services Research Unit (PSSRU) at Kent also noted an increase in the

proportion of residents with a confusional state: in 1981 55% of the residents of local authority homes had some confusional state compared with 44% in the 1970 census (Darton, 1986d). By 1981, behaviour from 22% of the residents in the surveyed homes constituted a minor nuisance, and from 8% a major nuisance. Mann et al (1984) found that two-thirds of the residents in homes for elderly people had some form of confusional state and in homes in Camden 38% were depressed. Moreover, the residents could not be distinguished from long term hospital patients in terms of dementia or dependency on staff. Similarly, Atkinson et al (1986) reported the full range of mental confusion across private and local authority residential care, NHS nursing homes and acute and geriatric wards in hospital.

Homes for elderly people were not originally intended to care for such a highly dependent population (Health Advisory Service, 1982). Before looking at the implications of this situation for future policy issues in the residential care of demented elderly people, it is useful to put the policy of residential care briefly into its historical context.

1.6 Residential Care Policy

The provision of modern residential care for elderly people is based upon the Victorian workhouse. Under the Poor Law in order to obtain support or benefit the claimant had to submit to a test under which homeless, rootless and penniless individuals were required to work in return for minimum assistance in an institution (Peace, 1983). The basis for this system did not change until after the second world war. Part III of the National Assistance Act 1948 established a new basis for provision for old people no longer able to live independently in their own homes. This was envisaged in terms of 30-35 bedded homes, although a 1955 review suggested 60 beds might be more appropriate given the pressure on places. In an attempt to dispel the negative image of the workhouse the emphasis was upon a hotel model in which residents were encouraged to see themselves as guests. Even in 1962, however, Townsend, in his classic study, found evidence of workhouse traditions (Townsend, 1962).

Since the 1960's the emphasis has been on the fact that the institution is the person's home. The gap between this aim and the reality has been the focus of various studies (eg Evans et al, 1980; Willcocks et al, 1987).

Home Life: a Code of Practice for Residential Care (Centre for Policy on Aging, 1984) was intended to provide a comprehensive set of requirements that establishments should meet when providing residential care for a variety of client groups. This formed an integral part of the measures to regulate the establishment and conduct of private and voluntary care homes under the Registered Homes Act 1984. However, by December 1985 an independent review of residential care chaired by Lady Wagner was commissioned to:

review the role of residential care and the range of services given in statutory, voluntary and private residential establishments within the personal social services in England and Wales, to consider, having regard to the practical constraints and other relevant developments, what changes, if any, are required to enable the residential sector to respond effectively to changing social needs; and to make recommendations accordingly. (p1)

Both Home Life and A Positive Choice covered all types of residential care. Thus recommendations tended to be broad based and relatively few were directed towards the specific difficulties of people with senile dementia. In discussing the particular problems of the elderly with mental difficulties the report of the Review stated that:

The evidence of several inquiries and personal letters to the Committee underline the fact that where standards are not

acceptable, the residents are caught in a downward spiral of confusion and disorientation. (p112)

The main areas of policy concern in providing residential care for demented elderly people are: the physical design of homes, the issue of specialist provision, staffing, the role of the homes in the community and performance reviews and monitoring.

1.6.1 Physical Design of Homes

In 1981 the White paper Growing Older (DHSS, 1981) drew attention to the importance of design of homes for elderly people which, it stated, contributes greatly to the quality of life of residents. Peace (1986) pointed out that the design of homes has reflected two competing interests: the desire to create comfortable environments that embody such notions as privacy and choice, and the economic constraints. Recommendations for the size and design of homes have varied over the years (Nuffield Foundation, 1947; Ministry of Health, 1955, 1962, 1973). The current issues in the design of homes focus in particular on the use of group living designs and the balance between personal and public space in the homes.

Group living designs were proposed as a way of combining larger scale homes (over 25 beds) with providing a more domestic "family group" setting (Korte, 1966; Ministry of Health, 1973). It was suggested that the number of residents in a home should be limited to approximately forty accommodated in groups of about eight individuals (Korte, 1966). The design would group together bedrooms, sitting areas and, in some cases, dining spaces (Ministry of Health, 1973). The proposal was that authorities should experiment with the concept of combining "affinity" groups likely to be compatible with one another (Ministry of Health, 1973).

The issue of greater personal privacy has arisen more recently (Lipman and Slater, 1977b; Willcocks et al, 1982). In particular a national consumer study (Peace et al, 1982) concentrated upon eliciting the views of the residents themselves. This highlighted a number of design features of homes which, it was proposed, could

improve the quality of life for residents. On the basis of these findings it was suggested that future designs would maximise old peoples dignity and independence if they used the concept of residential flatlets rather than bedrooms.

The specific issue of designing accommodation for people with dementia there have been a limited number of policy recommendations. Lipman and Slater (1976) proposed the use of high rise blocks for people with dementia. Scottish Action on Dementia (1986) have recommended a set of principles for designing residential environments for demented elderly people. These were based upon "normalisation", "compensation", "individualisation" and "integration into the community". Sometimes these aims, such as "normalisation" and "compensation" directly conflict. It is not "normal" to have large clear notices on bedroom and WC doors, for example.

However, the limited number of policy recommendations on building for people with senile dementia is not surprising given the lack of research. There is very little direct research evidence relating the design of homes to the effect on residents with senile dementia (Keen, 1989).

1.6.2 Specialism

One important issue in the care of elderly demented residents is that of segregation or integration within ordinary residential establishments. Those in favour of segregated facilities argue that they provide a safe, planned environment and avoid distress caused to alert residents in non-specialist homes (Norman, 1987). Those in favour of integration argue that where there are no difficult behavioural problems, moderately demented residents appear to do well and should not represent a problem to other residents (Evans et al, 1981).

The Wagner Review (1988) noted the increased use of specialist units in non-specialist homes. This trend has also been observed in the USA. Ohta and Ohta (1988) found that the purposes of such units were varied. In some cases the welfare of the alert residents in the rest of the facility was of paramount consideration, in

others the aim was to concentrate resources and specialist knowledge on the demented residents.

The issue of specialist units and their effectiveness in caring for people with senile dementia has not yet been addressed in this country. Attention is still centred upon the desirability of specialist homes, rather than units. The Wagner review (1988) made a number of recommendations. Only one, however, specifically concerned the residential care of elderly mentally infirm people:

Proper provision must be made for elderly mentally infirm people. This will entail closer cooperation between health and social services. Nursing home type facilities should be developed in association with existing residential establishments. (p117)

This appears to be a call for increased specialisation in the residential care of demented elderly people. However it is likely that specialist facilities as a whole will vary as much as specialist units in policy and practice (Ohta and Ohta, 1988). There is a need for evidence to establish whether specialism per se or specific aspects of specialist provision can provide a beneficial environment for people with senile dementia. If there are beneficial aspects, it is important to address to what extent these can be incorporated in non-specialist homes in order to benefit demented residents of these homes.

1 6.3 Staffing

Staffing policy issues focus primarily upon the role, numbers, status and training of staff. Chapter 3 describes the roles of staff in residential care and research in the area. Home life provides guidance on the tasks required and groups of staff which should be considered in staffing a home. However, guidance on the assessment of staff requirements only appears in Staffing Ratios in Residential Homes: A platform for the 1980s (Residential Care Association, 1980). The Wagner Review (1988) found this dated and in Home Life it was pointed out that there was no guidance on

numbers when caring for elderly people who are not heavily dependent, either physically or mentally. The Wagner Review recommended that the residential staffing requirements and deployment of staff in all types of residential care should be reassessed by the DHSS.

The problems of low status and morale of those working in the field of residential care have been identified by a number of researchers and observers (Booth, 1985; Peace and Willcocks, 1986; Wagner, 1988). The Wagner Review regarded as a priority enhancement of the status of staff and recognition of their importance as a major resource. To this end it recommended that the grading of care staff as manual staff should cease, their posts be redefined as officers or the professional equivalent and that integrated pay and employment conditions should be introduced for all social services staff.

With regard to training the Review recommended that all senior posts should be filled by staff with a social work qualification and that every establishment should be required to draw up a staff training plan which would be subject to registration and inspection procedures. However, in emphasising the importance of social work and in-service training across establishments and the role of health services in the care of elderly mentally infirm people, appropriate training needs of staff dealing with this particular client group are left unclear.

Staff are an expensive and influential resource. Policy in such an area needs to be based firmly on evidence of benefits to both the staff themselves and the residents they care for.

1.6.4 The Role of Residential Homes in the Community

In section 1.1 the "continuum of care" was referred to as though it was indeed in some way continuous, that residential care represented a step within care in the community. In both policy and practice, however, community and residential services have developed almost entirely separately (Willcocks, 1986). This has led to homes

being described as "socially marooned" in the communities they serve (Townsend, 1981).

Links between the community and the home will depend upon the catchment area the home serves, the degree to which visitors come into the home and the services provided by the home to the local community. Various policy documents (Ministry of Health, 1962, DHSS, 1973, 1977) have advocated locating homes close to the community they serve. This enables the residents to be familiar with the area to which they have moved and facilitates visiting by relatives and friends.

The pressure to provide services for the community from residential establishments has grown in recent years due to an awareness on the part of Local Authorities that a large proportion of resources for elderly people were being devoted to a very small proportion of the elderly population (Allen, 1986). There has been a call for an increased use of homes as resource centres (Barclay, 1982). This has emerged particularly in the provision of day and respite care (Allen, 1986).

Respite care is provided primarily for the needs of informal carers who carry the bulk of the load of caring for this group of elderly people in the community. This can be provided by relief help in the elderly person's home, but more frequently the elderly person goes to stay in a residential home or hospital for one or two weeks to give the carer a break. This has been found, in combination with the use of day care to have a beneficial effect upon carers (Allen, 1983; Levin, et al, 1989).

The concern in this study, however, is the impact of policies which encourage links between the community and the home, on the residents and the facility. Do visitors have a beneficial influence on residents with senile dementia? What are the effect of providing day and respite care in a long stay home?

1.6.5 Performance Reviews and Monitoring

The Wagner Review (1988) made a number of recommendations for setting and maintaining standards. These recommendations were at an individual, establishment and agency level. For individuals it was recommended that any resident who is unable to exercise effective choice or give effective consent should have a statutory review every six months. Each establishment should have a system of self-evaluation and performance review, and this should be a condition of registration. In addition national guidelines should be drawn up that:

.... give equal attention to standards of accommodation, quality of life and the qualifications of management and staff. (p118)

These should apply to local authorities, to private and to voluntary homes and no agency should undertake the inspection of its own establishments.

While such recommendations are valuable in developing target areas for action, they tend to raise more questions than answers. In reviewing the personal evidence the point was made that for younger physically handicapped people the main benefits of residential care were perceived as greater independence from family and institutions. For alert elderly people on the other hand a sense of companionship, affection and a family atmosphere seemed to be the main benefits. This, finds the review:

...emphasises again the seriousness of the lack of any direct evidence about what is important to children, the mentally handicapped and the mentally ill. (p159)

This raises the difficulty of establishing the essential ingredients that any monitoring system, at the individual, establishment or agency level should identify in order to lay sufficient emphasis on quality of life.

1.7 The Study

To realise the Wagner committee recommendation that residential care should be a positive choice and experience for this group, an improved understanding of the effect of the residential care environment is required. The types of provision, under the catch-all phrase "residential care", vary considerably. There is a need to establish the characteristics of homes for elderly people that provide the most favourable environment for people with senile dementia. This study contributes to the debate on the most appropriate way forward by examining the impact of a variety of homes on the demented residents.

In particular a greater understanding of the effects of the physical design of homes, specialism, the role the home plays as a community resource and staffing issues upon outcomes for these residents is needed. Moreover, if monitoring schemes are to be effective they must link into processes that affect the well-being of residents. The aim must be to establish as far as possible what these links are and how to measure them effectively.

1.8 Conclusion

The growing population of demented elderly people and the peculiar difficulties of caring for this particular group mean that there is likely to be increased need for, and pressure on, residential care facilities. If residential care is to be a "positive choice" for people with senile dementia more information is needed about the impact of residential care upon them. This study is intended to go some way to help link the policy issues in residential care to the welfare of demented residents.

CHAPTER 2
THEORETICAL PERSPECTIVES AND PREVIOUS RESEARCH
MODELS OF ENVIRONMENTAL EFFECT AND THE PERSONAL SYSTEM

Introduction

In assessing previous work concerning people with senile dementia and residents of homes for elderly people, it is useful to have a model or conceptual framework. This assists in the organisation of material and helps identify which studies and theories may be relevant. The first section, therefore, discusses types of model used in assessing elderly people and the environment. The "ecology of ageing" approach is used to structure the subsequent discussion of people with senile dementia and the residential care environment. In this chapter one part of this model is discussed: the "personal system". In the context of the present study this concerns the effects of normal aging, senile dementia and other personal characteristics upon outcomes for demented elderly people.

2.1 Types of Model

There are many models relating aspects of aging to the environment drawing on a number of different disciplines. Before assessing which model or conceptual framework is most appropriate it is necessary to identify the requirements of a model. Archea (1982) maintains that the role of a model depends upon the methodological "programme" which underlies the research activity. A methodological "programme" provides a model of knowledge rather than the subject area. He identifies four "programmes": rationalism (the basis of jurisprudence), empiricism (the basis of physics), structuralism (the basis of linguistics) and instrumentalism (the basis of economics). Instrumentalism is represented as the most appropriate approach in the study of the environment and behaviour because it is:

...the only programme in which knowledge is not ultimately equated with truth or some approximation thereof. Instead, the quality of what is known is judged by its effectiveness in

developing new knowledge or in achieving a preferred state of affairs. The criterion is entirely utilitarian. (p167)

For instrumentalists a model should successfully isolate those factors which affect desired or expected outcomes from those that do not. Thus a model is intentionally impoverished, and only accounts for those aspects of a situation which are of immediate concern to the researcher.

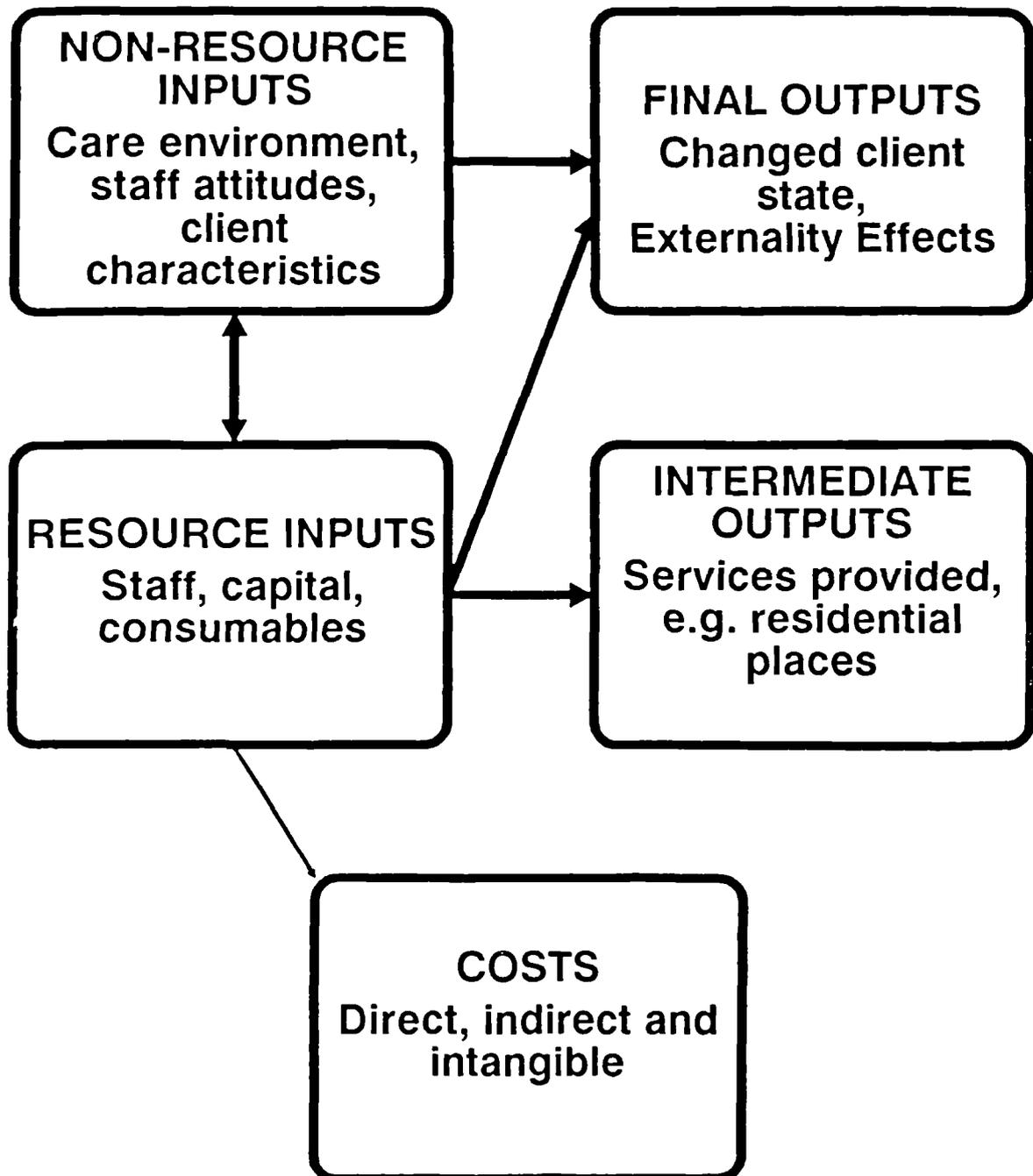
There are a large number of different frameworks which are used to assess the effect of services or the environment on elderly people (Archea (1982) identified ten of the latter). The following discussion is not intended to be comprehensive, but considers some of the more immediately relevant approaches to the problem.

2.1.1 Production of Welfare

The Production of Welfare approach (Knapp, 1980, Davies and Knapp, 1981) to the problem of assessing the impact of service provision is illustrated in Diagram 2.1 This provides a useful basis when the focus of interest is the deployment and efficient use of resources in the production of the ultimate output: the welfare of recipients of the services. However the relationship between resource inputs (such as capital expenditure) and outputs (such as welfare), which forms the basis of this approach, while of vital interest to policy makers, depends upon an understanding of the processes. The question to be addressed is: what are the important influences on residents with senile dementia? The resource implications of providing the most beneficial environment cannot be assessed adequately until this investigation is completed.

Thus the model provided does not appear to satisfy the criteria of a valuable model cited above. The distinctions made between resource inputs (such as capital expenditure), non-resource inputs (such as quality of care), and quasi-inputs (such as age and disability) add little to our understanding of the effect of the environment on residents.

Diagram 2.1
Production of welfare model



→ causal relationship
— tautological or definitional association

Source: Davies and Knapp, 1981

Indeed, in a proposed study of residential care (Knapp, 1980) which used this a broad basis, the need for the use of theoretical work from the USA was identified to supplement the approach in assessing the social environment.

2.1.2 Exchange Theory

Exchange theory (Victor, 1987) derives from the work of Blau (1964). In this approach power is defined as deriving from an imbalance of an exchange. One participant achieves power through the inability of the other to reciprocate. Using this definition, senile dementia can be seen as a condition of increased powerlessness. Even the power to esteem and comply, considered by Dowd (1980) to be the only social currency which the older person can bring to the exchange relationship, is reduced.

While it is an interesting approach to interpretation of attitudes to, and behaviour of, people with senile dementia, it does not provide an adequate framework to assess the full impact of the environment upon them. For example, not all aspects of the environment, such as the design of the home, can be interpreted in terms of "exchange" relationships.

2.1.3 Normalisation

The concept of "normalisation" (Wolfensberger, 1977) has been applied to homes for elderly people from the field of mental handicap. This involves making available to residents conditions that are as close as possible to those normally valued by society. It is related to labelling theory (Berger and Berger, 1976) in emphasising the reinforcing influence of labels in peoples' definition of themselves and thus to the way they behave. *Homes for elderly people stand out as architecturally far from the norm of the neighbourhood in which they are situated and furnishings often bear little resemblance to the way the people who lived there would furnish their own home.* This, together with the cultural norms in which elderly people are perceived as a group apart lacking individuality, affects the way staff see residents and residents see themselves.

In considering demented elderly people, it may be anticipated that staff attitudes and expectations will affect residents' behaviour. Expectations of abnormal behaviour may produce abnormal behaviour. Expectations of normality in a "normal" environment may provide helpful reinforcement and cues encouraging appropriate behaviour. A home design which fits normal expectations of a house may be easier for residents to find their way around (Munn, 1984).

In the care of elderly people the philosophy underlying normalisation is gaining increasing acceptance: indeed this approach is being integrated into residential care policy in some parts of Australia (Slater, 1989). A study contrasting the effects of homes which were designed and run according to the principles of normalisation and of "ordinary" homes would be of great interest. However, the purpose of the present study was to look at the variety in mainstream provision, not at specific experimental treatments. Variety in "normalisation" within mainstream provision is likely to be minimal so this approach is unlikely to provide a useful framework for assessing such provision.

2.1.4 Environmental Totality

The environmental totality approach builds on Goffman's (1961) theory of institutional totality. In this, the more formalised and less individualised regimes and care practices, the more institutional and, by implication, harmful, an establishment is.

Such models in which individuals and the environment are conceived of as separate and having a unidirectional relationship are now generally rejected (Lipman and Harris, 1980; Ittleson, 1982). This type of approach is represented as underlying the history of behavioural science, where behaviour is either represented as affected by, or as the result of, environmental factors. Moos and Lemke (1985), suggests that too often the paradigm underlying assessments of residential care is of this nature, with the residential care process represented as a "black box" intervening between

resident inputs and outcomes. The contents of the process are regarded as the sole determinant of resident functioning and are usually assessed in terms of broad categories, such as type of home (eg group-based living or communal).

2.1.5 Environmental Fit

Models attempting to integrate the environment and individual relationship have largely built on the work of Murray (1938) and Lewin (1935). In Murray's need-press model of human behaviour, behaviour is dependent upon both the "needs" of the individual and the "press", or opportunities for satisfying needs in the environment. Lewin also proposed the notion that behaviour is a function of the relationship between the person and the environment.

According to the congruence model of environmental fit (Kahana, 1982), individuals seek out environments that are most congruent with their needs, and are thus most likely to be found there. When there is dissonance between environmental press and needs there is either modification of press or the individual leaves the environment. When the opportunity to do this is unavailable, stress and discomfort follow (Stern, 1970). The congruence model framework consists of seven dimensions and eighteen sub-dimensions which are used to characterise the residential setting. These are under two broad headings: dimensions based on environmental and individual differences. These are largely built on work done by Kleemier (1961) and Pincus and Wood (1970).

Although this is a very useful model for examining the influence of the environment there is a major difficulty in using this approach: the type of resident under consideration in this study. The outcome measures are necessarily related to the degree of congruence between the individual and his or her environment. This necessitates some indicator of the individual's need for privacy, for example, together with his or her feelings on the degree to which this need is being met. Such information is difficult to ascertain accurately from alert residents - the

degree of unreliability when such issues are addressed for the demented resident makes the use of such a model unrealistic for this type of study.

2.1.6 Ecology of Aging

Lawton and Nahemow (1973) define the ecology of aging approach as:

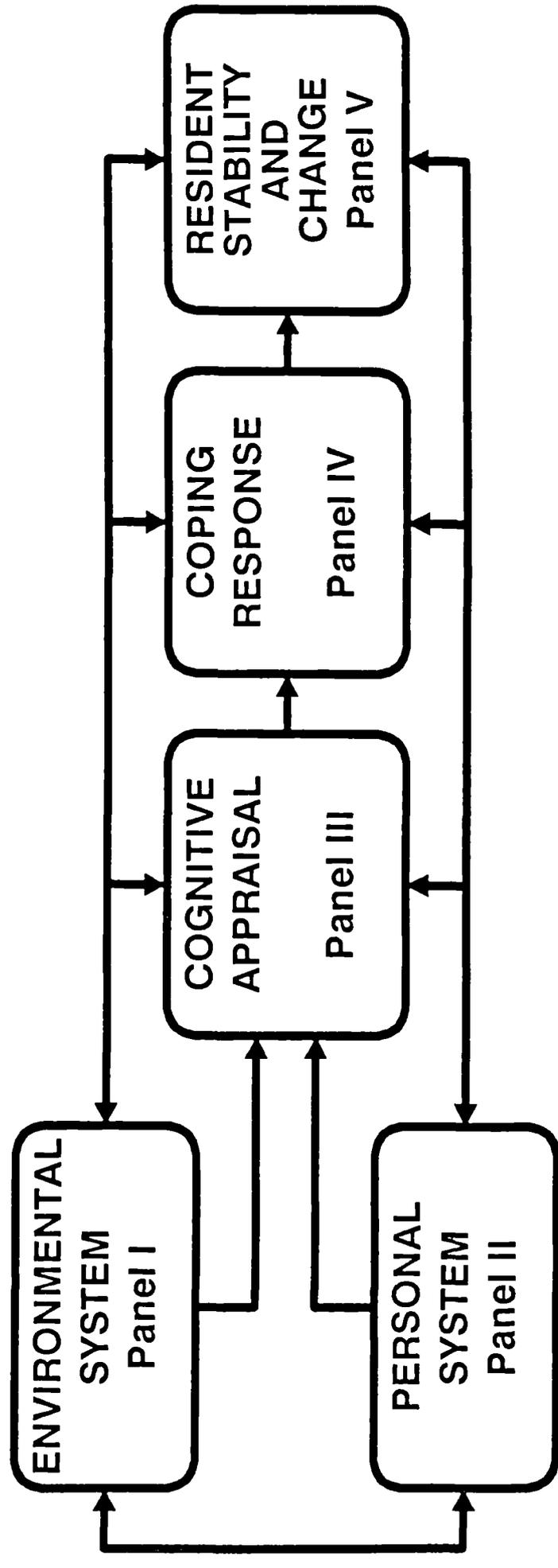
a system of continual adaptations in which both the organism and the environment change over time in a non-random manner; either environment or the organism is capable of initiating a cycle of action, or of responding.

This is a transactional perspective relating personal competence and environmental press to affective response and adaptive behaviour. Moos and Lemke (1985) present a similar framework illustrated in diagram 2.2. In this the personal and environmental system are linked to adaptation by means of cognitive appraisal and coping responses

This type of model is particularly appropriate to the current investigation because it incorporates the environmental docility hypothesis (Lawton, 1982). In this, the less competent an individual the more liable his or her behaviour is to reflect the influence of environmental forces. This can be seen in diagram 2.3 in which the band of positive affect and adaptive behaviour is much narrower at lower levels of competence. The less the competence and the stronger the environmental press the more likely there is to be maladaptive behaviour.

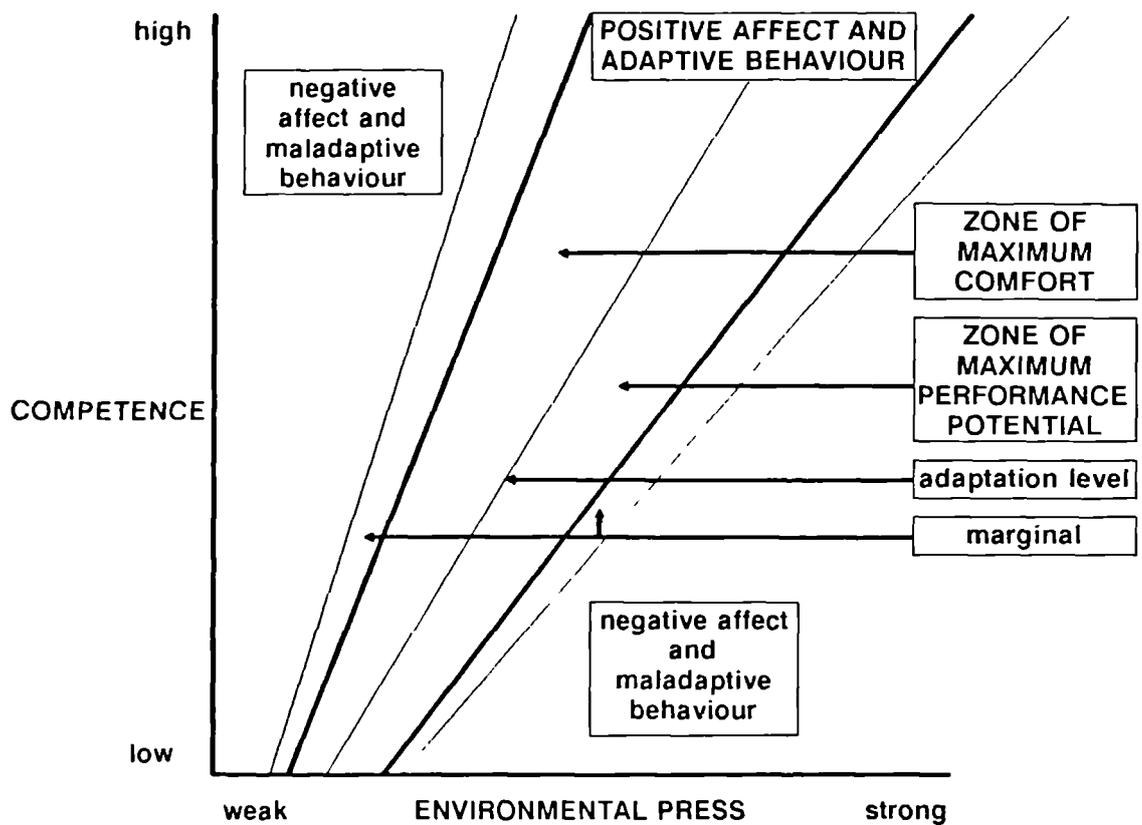
The adaptation level (Helson, 1964) represents a state of balance between the level of external stimulation and sensitivity to this. Individuals return to this state automatically under normal conditions in which environmental press will vary within the band of positive affect and adaptive behaviour. Less press leads to feelings of the positive affect of comfort in the short term but may lead to reduced competence longer term.

Diagram 2.2
Social ecology model of environmental effect



→ causal relationship
Source: Moos and Lemke, 1985

Diagram 2.3 Lawton's model of competence and environmental press



Source: Moos and Lemke, 1985

Slightly higher press than exists at the adaptive level leads to positive affects such as stimulation short term, and potentially increased competence longer term. Once the press exceeds a certain level, however there is a negative affect (see diagram 2.4)

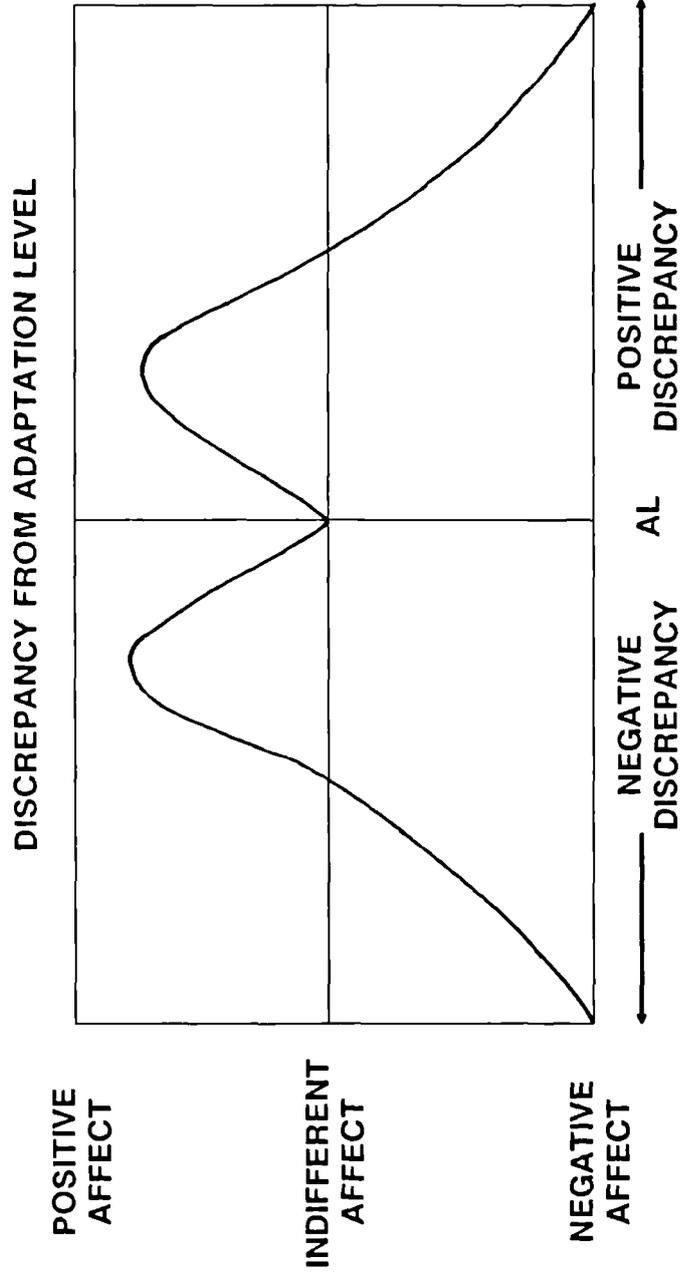
Lawton (1982) classifies competences in the personal system in a hierarchical structure from biological health through to ego strength. This is not a very useful classification in considering the reduced capacities of people with senile dementia. It is more appropriate in this context simply to research the available literature for descriptions of normal aging and the specific condition of senile dementia to determine the expected effects on physical and mental competence.

However, Lawton (1982) classifies aspects of the environment in a rather more useful way as.

- Supra-personal the dominant characteristics of individuals in close physical proximity to the subject.
- Personal significant others constituting major social relationships
- Social the social climate of norms and expectations.
- Physical nonpersonal, nonsocial aspects of the environment.

These categories form a useful basis for identifying potentially important environmental influences of homes for elderly people on the residents. The "supra-personal" influences of the staff and other residents, "personal" friends and visitors, "social" climate and regime and "physical" design provide a starting point for a comprehensive assessment of the environment of residential care.

Diagram 2.4
Changes in affective response to stimuli as a function of extent of deviation from adaptation level



Source: Wohlwill, 1966

Lawton's model has been criticized (Carp, 1978-9) for primarily discussing demands and competences, rather than opportunities and preferences that might be more relevant at higher levels of competence. Given the group of residents with which this study is concerned, however, this does not seem to be an overwhelming objection. The advantages of the general model far outweigh the disadvantages.

One principal advantage is that outcomes can be depicted as changes in behaviour and competence, maladaptive behaviour or lowered competence resulting from poor environmental "fit" with the persons ability. Behaviour and competence can be observed and measured for confused elderly people with considerably more reliability than measures of outcome required by other approaches, such as "welfare", "fit" or "satisfaction". Furthermore, in this approach the environmental influence is at least partially dependent upon the competence of the individual. This is particularly relevant to demented people who may have a very different experience of residential care from alert residents (Harris and Lipman, 1980).

In constructing a model of the relationship between the environment and people with senile dementia the social ecology model is, therefore, particularly appropriate. In chapter 4, this approach is modified slightly to identify a testable framework for the research questions. For the purposes of reviewing the field, however, the underlying model is taken to be that described in diagram 2.2 and use is made of Lawton's (1982) classification of the dimensions of the environment. The specific influences which have been discussed in the literature are thus categorised in terms of:

The personal system

- Competence in normal aging
- Competence in senile dementia

The environmental system:

- Supra-personal characteristics of residents and staff
- Personal relationships
- Social climate and regimes
- The physical environment

The remainder of this chapter discusses the theoretical perspectives and previous research which relates to the "personal system" of people with senile dementia. The personal system is represented here as characteristics of the individual that affect competence. The level of an individual's competence can be seen as primarily dependent on his or her physical and mental abilities and personality. The effect on these of old age in general and the condition of senile dementia in particular, are discussed. Other personal characteristics that might affect the competence of people with senile dementia are then identified.

2.2 Competence in Normal Aging

In order to set the specific competence difficulties of people with senile dementia in context it is helpful first to discuss briefly competence changes in normal aging.

2.2.1 Physical Competence

Old age is generally associated with a decline in physical competence (Carp, 1976). This reduction in competence may be due as much to the increase in ill-health in old age as to the simple passage of time (Shanas et al, 1968; Holden and Woods, 1982). Decline in physical health results in "symptoms", such as unsteadiness or pain, and "life difficulties", such as inability to get dressed or walk unaided. Physical competence is measured or assessed in terms of "life difficulties" or physical ability.

Most studies of the effects of old age include some measure of physical abilities to perform everyday tasks, such as Activities of Daily Living (ADL) (Katz et al, 1963). These are often described in terms of "dependency" measures as elderly people are perceived as becoming more dependent on their surroundings and other people as

they become older. Such changes may affect behaviour and the way people relate to their environment both in terms of actual and perceived abilities (Lawton, 1979a). Although decline in abilities to perform every day tasks is primarily associated in normal aging with a decline in physical ability, it can also be influenced by cognitive decline.

2.2.2 Cognitive Competence

Early cross sectional studies on the changes of intellect with age indicated a *progressive deterioration* (eg Wechsler, 1955). These overestimated actual decline as they reflected differences in age-cohorts' opportunities for education, nutrition, medical care, perceived relevance of the questions asked and so on, as well as any natural decline with age. Studies that included a longitudinal element (Botwinick, 1977) confirmed that the cross-sectional studies over-estimated intellectual decline. However, there was some agreement that there was decline in the age groups over 60

Horn and Donaldson's (1976) model used the concepts of fluid versus crystallised intelligence. They suggest that fluid abilities, which are involved in grasping new ideas and reasoning rapidly, are likely to decline with age. Crystallised intelligence, which reflects acquired knowledge or accumulated wisdom may well increase with age.

Memory loss is popularly thought to increase with age, together with a decrease in the ability to learn. Again, the evidence indicates that such changes are relatively limited (Holden and Woods, 1982). Memory can be divided (Woods, 1982) into:

- Sensory memory which is a pre-perceptual store of extremely short duration
There is some evidence suggesting age decrement (Botwinick, 1978)

- Primary memory which reflects immediate recall. This shows little change although older people do not perform so well if the material has to be re-arranged (Craik, 1977).

- Secondary memory where the major memory loss occurs, particularly when recall measures are used. The extent of deterioration depends upon acquisition and retrieval conditions (Woods, 1982). Aged subjects show less confidence, and perform better when any response (as opposed to "don't know") is rewarded (Leech and Witte, 1971). When learning is assessed by recognition rather than recall there appears to be less deficit with age, although the inclusion of guessing rates, which could be represented as a reflection of confidence, does indicate impairment with age (Harkins et al ,1979).

- Remote Memory which applies to material learned some time ago, rather than in a recent experimental situation. There appears to be no clear deficit in this type of memory with age (Botwinick and Storandt, 1980) but neither is there evidence for superior recall of past events (Warrington and Sanders 1971).

Cognitive difficulties will affect how the environment is interpreted and the subsequent response, whether this be an adaptation of the individual or a change in the environment. Interpretation of, and response to, the environment will also depend on the personality of the individual.

2.23 Personality

Personality traits have been conceived as forming a stable inner aspect of individuals revealed in characteristic behaviour (Allport, 1937). However these have not been shown to be consistent over time or situations. Neugarten (1964), in a review of longitudinal studies of personality, states:

Making allowances for the fallibility of measures with regard to reliability, the implication is that there is at least as much change as there is stability.

This leads to the question as to whether there is any consistency in the pattern of personality changes with age. The disengagement theory of aging proposed that as people grow older the capacity to cope with relationships is reduced and they voluntarily retreat into themselves as the world retreats from them. Cummings et al (1960) suggested that:

The individual is pictured as participating with others in his social systems in a process of mutual withdrawal rather than being deserted by others in the structure.

Havighurst (1968) tested this and contrasted it with the activity theory of aging which proposes that such withdrawal is involuntary on the individual's part, and that increased social engagement increases well-being. He found people satisfied with both high and low levels of social engagement. Gubrium (1972) discusses the proposal that these results can be seen in the context of environmental-person congruence. In this the level of satisfaction with activity levels is more dependent on whether an individual's needs are satisfied than with any absolute level of engagement.

Another approach to the study of personality in elderly people is in terms of ideal types. Reichard et al (1962) described a sample of physically healthy men in terms of five types. Three of these were well-adjusted: the "mature", "rocking chair" and "armoured". The poorly adjusted were "angry" or "self-haters". Similarly Savage et al (1977) used cluster analysis on 72 individuals and identified four groups labelled as "normal", "introverted", "perturbed" and "mature".

Development and continuity theories of aging (Victor, 1987) emphasise the importance of an individual's past life experiences in their adaptation to old age. Life is represented as a series of stages through which one has to pass, previous stages affecting adaptation at each level. These are age related though not tied to specific ages. Edwards and Wine (1963) found that many aspects of change in personality were correlated with intellectual decline and not chronological age. These changes were: dependency, need for order, conformity, friendliness, truth, cautiousness, personal grooming, chronicity, education and social relationships.

Lawton (1982) maintains that the concept of a personality trait is so ambiguous and has such a lack of clarity as to make it unsuitable for inclusion in a social ecology model. Instead he makes use of the concept of personality style, which is not represented in terms of a development from previous life patterns so much as an interaction between the environment and the person. Moos (1975) for example, suggests that there is little relationship between a person's behaviour inside a psychiatric or correctional institution and outside.

In discussing the personal characteristics of people with senile dementia however, it is important to be aware that the situation is one of abnormal aging. Thus the contribution that these theories can make to such discussion is limited. Although the aging process and the consequent changes in roles and perceptions by society and the individual may well occur, these will be dominated by the progressive nature of the condition.

2.3 Effects of Senile Dementia

In chapter 1 there was a general description of the prevalence and nature of the condition of senile dementia. The causes of the condition are not well defined and there have been reports of associations between senile dementia and such environmental issues as aluminum intake and genetic factors (Woods, 1989). Willcock (1988) and Woods (1989) discuss the current medical evidence from research into dementia. There has been some debate around possible social and psychological

causes of dementia. The symptoms of dementia have been seen as a defence against personal and inevitable death (Morgan, 1965), a hostile environment (Meacher, 1972) or life events (Amster and Krauss, 1974). Such approaches have been largely discredited (Gilhooly, 1984).

While of paramount importance in the future care of people with dementia, the causes and potential for medical treatment are not the concern of this study. However quickly medical research progresses there will still be a population of elderly people with dementia who will need to be cared for in residential institutions. The needs of such residents will depend on their physical and cognitive competence.

2.3.1 Physical Competence

There appears to be little evidence of physical decline specifically attributable to senile dementia. MacLennan (1987) examined the problems of dementia and immobility and reported that immobility among many patients was not associated with the condition itself but with neurological damage. Ferm (1974) ranked order of loss of behaviour for 11 items on a cross sectional sample of 136 patients with dementia (see table 2.1 below).

Table 2.1 Rank Order of Loss of Abilities (Ferm, 1974)

1. Hobbies
2. Participation
3. Ability to Wash
4. Ability to Dress
5. Orientation in Space
6. Recognition of Persons
7. Ability to Communicate
8. Bladder Control
9. Bowel Control
10. Movement
11. Eating

Although these include physical tasks the loss of competence appears to be due to cognitive functioning rather than physical disability. Hodge (1984) lists the

behaviour changes associated with incontinence in demented elderly people (see table 2.2).

Table 2.2 Behaviour Change in Incontinence

Inability to recognise need
Inability to find toilet
Too slow to get there in time
Inability to recognise toilet
Inability to undress appropriately
Apathy
Incontinence maintained by contingent
staff attention
Medical problems

Reduction in ability to perform activities of daily living found in people with senile dementia appears, therefore, primarily due to declining cognitive abilities or to unrelated physical illness. The emphasis must be, therefore, on cognitive competence.

2.3.2 Cognitive Competence

The overall cognitive decline resulting from senile dementia is well established (Savage et al, 1973). Indeed it is a primary element in the diagnosis of dementia. One of the first signs of dementia is often memory difficulties (Holden and Woods, 1982). There have been few studies examining the sensory memory of people with dementia. Miller (1977b) and Moscovitch (1982) found some memory impairment, although sensory systems themselves appear to be intact.

In testing for primary memory deficits by asking a subject to recall a number of digits in the correct sequence, a number of studies have found impairment in demented people, compared with normal elderly people (Savage et al, 1973; Kaszniak et al, 1979; Corkin, 1982). However, one study (Weingartner et al, 1981) found that people with senile dementia performed as well or better than normal elderly controls. Most other types of tests, such as repeating lists of words have found that there is a definite, though sometimes slight, primary memory deficit among demented subjects (Miller, 1971, Moscovitch, 1982; Corkin, 1982).

Secondary memory deficits are those which result in interference with the activities in daily life such as forgotten conversations, shopping lists and so on. There has been some debate over whether these are the result, at least in part, of primary memory impairment. Although there is some evidence that this is the case (Wilson et al, 1983), the weight of evidence is that much of the difficulty experienced by demented subjects is due to secondary memory impairment (Miller, 1973; Corkin, 1982).

In assessing remote memory the findings are conflicting. Relatives often note that the demented person appears to remember events from long ago better than recent occurrences. While Moscovitch (1982) found some support for this view Wilson et al (1981) found demented patients were impaired on all tests.

Woods and Britton (1985) conclude that there is little convergence in the findings apart from the theme that there are primary and secondary memory deficits. The secondary deficits appear dependent to a limited extent on the primary memory deficits. One of the problems with the results of the studies is that for practical reasons often it is the younger less impaired subjects who are tested so the more severely demented patients are excluded.

Memory difficulties are not the only cognitive deficits associated with dementia. Studies of information processing have indicated impairment varies considerably, particularly when the task involved a choice rather than a simple reaction (Ferris et al, 1976; Woods, 1981). The higher the information load the more the time required by demented patients increased compared to controls.

Many other cognitive related difficulties are associated with dementia. For example: communication difficulties, particularly speech disorders or aphasia, apraxia (the impairment of voluntary and purposeful movements) and agnosia (the impairment of accurate perception of objects) can all be found in demented subjects (Holden and Woods, 1982). Indeed the variety of cognitive difficulties associated with dementia

led Brody (1942) to state that there "is no trace of a specific pattern of abilities in dementia". Even now little is known in detail about the pattern of cognitive change in dementia. Britton and Woods (1985) propose that the increase in variability in cognitive abilities among people with senile dementia may be as much a symptom of the disease as the decrease in competence.

Woods and Britton (1985) also suggest that loss of adaptive ability may be one of the first signs of dementia. If true this would indicate that there would be less flexibility in the individual in responding to environmental press by changing their adaptation level. Thus the expected effect of "environmental docility" (Lawton, 1982) would be exaggerated as the area of maladaptive behaviour would be more easily reached.

In drawing together the effects of dementia, there are a number of psychological models such as: accelerated aging (Miller, 1977a), sensory deprivation (Inglis, 1962, Bower, 1967) and development reversal (Ferm, 1974). Of most interest in the context of this study is a proposal by Woods and Britton (1985) for a compensatory model. This would seek to explain how persons suffering from dementia cope with the changes in their competence, and what strategies individuals adopt in order to maintain function at some level. The control systems that are used to cope with information overload would be identified.

Woods and Britton (1985) propose that some of the variability in behaviours and abilities between demented people may be attributed to individual differences in coping under extreme pressure or stress. This clearly ties into the environmental docility hypothesis where reduced competence results in excessive environmental press at far lower levels of press, leading to maladaptive behaviour. Where possible individuals adapt the environment to their lower levels of competence - thus an ecological model of the relationship between the environment and demented elderly people would provide a useful contribution to the compensatory model proposed.

2.3.3 Personality

There has been little work in the field of personality types or personality characteristics of people with dementia. Savage et al (1977) report on a number of studies of personality in elderly people, including assessment of personality in people with senile dementia. Various tests and adjustment measures were applied but they found problems of relevance and practical applicability. For example, people with senile dementia had a high score on "neuroticism" or emotionality, using the Maudsley Personality Inventory compared to other groups. However, this could be due to three factors: changes in the brain, concern over failing abilities or a simple artefact of the scale. The scale items all required "yes" answers to establish neuroticism. People with senile dementia may simply be more likely to agree with the interviewer.

Similarly there has been little research into the effects of the pre-morbid personality in terms of subsequent effects on behaviour. Verwoerd (1981) argues that it is reasonable to expect that people who use aggressive and "high energy" defences are especially likely to react with psycho-trauma to loss of competence. Similarly, compulsive and rigid individuals are likely to react to the condition with profound anxiety. Gianotti (1975) proposed that confabulation was more adaptive than admitting failure of memory. Confabulators are characterised as ambitious, hard driving and independent, often in the higher social classes. Sinnott (1977) claimed that flexibility in the assumption of roles is the crucial adaptive quality in determining how people will respond to loss of cognitive ability.

Woods (1989) suggests that the personality of the individual with senile dementia normally reflects the pre-morbid personality. In some people loss of social control, and a subsequent tendency to do outrageous things may be associated with specific damage in the brain. Many apparent changes in personality, such as violent actions in placid and gentle people may be the result of the impossible demands that are being put upon them to survive with failing resources and abilities.

Given the difficulty of establishing reliably the effects of pre-morbid personality, the concept of personality style (Lawton, 1982) identified earlier would appear most appropriate in the context of the present study. The way in which the demented person responds to the environment, the interaction, demonstrates the personality type. The resulting behaviour is thus in part an indicator of the personality. This implies the need for a number of different outcome measures to reflect different "maladaptive behaviours".

2.4 Personal effects on competence of people with senile dementia

It has already been established that the loss of competence in people suffering from senile dementia in itself varies widely between individuals and that the abilities of individuals themselves vary over time (Woods and Britton, 1985). This section discusses the major personal influences on variations in ability or competence of an individual with senile dementia.

2.4.1 Personal Characteristics

The principal personal characteristic that is associated with dementia is age. There is a steep gradient in the prevalence of dementia with age (Henderson, 1986) and in chapter 1 the implications of differing prevalence rates with an aging population were discussed. There is also some evidence that the rate of deterioration might be slower when the onset occurs in people over 80, rather than in younger people (Holden and Woods, 1982). Thus age does appear to be a personal characteristic of importance for competence and changes in competence of someone with senile dementia.

Assessment of whether the sex of the individual affects likelihood of, or competence in, dementia is confounded by the fact that on average women live longer. The larger number of women found to be suffering from the condition (eg Gurland et al, 1980) has been entirely attributed to this greater longevity (Office of Health Economics, 1979). O'Conner et al (1989) found virtually identical levels of prevalence by sex in people over 75 (males 10.1%, females 10.5%).

However, major surveys in several countries have indicated that Alzheimers disease type dementias occur more frequently among females (Royal College of Physicians, 1981). One of the risk factors associated with multi-infarct dementia, on the other hand, is being male (Woods, 1989). As the types of symptoms and progression of the condition is dependent to a degree on the type of disorder (Woods, 1989) it is possible that changes in condition might be associated with the sex of the individual. Both the age and sex of the individual, therefore, could influence changes in dementia related symptoms.

2.4.2 Depression

Depression can be associated with dementia and affect the diagnosis of, and apparent progress of, the disease (Rabins et al, 1984). Holden and Woods (1982) state that diagnosis of dementia and/or depression can often be delayed for months or even years because of the similarity of symptoms and the possibility of both conditions occurring in the same patient.

The masquerading of depression as dementia has led to the term pseudo-dementia about which there has been some debate. Bermann and Rappaport (1984) have identified distinguishing characteristics of pseudo-dementia. One example given is that such patients tend to highlight failure whereas those with senile dementia delight in accomplishment and try to conceal failure. Rabins et al (1984) showed over a two year study that depression related dementias had better prognoses than senile dementias. By those who support this classification pseudo-dementia is portrayed as a treatable, reversible condition which senile dementia, at present, is not. Others, for example Mahendra (1985), find this distinction arbitrary. He states that depressive dementia should be considered within a category of reversible treatable or secondary dementia but that it is possible to have depression and irreversible dementia.

Given this connection between depression and dementia it is important, especially in the absence of a firm diagnosis of dementia, to allow for the possible impact of depression upon the confused elderly person. Depression might affect both the way the persons condition progresses and the way that he or she responds to the environment.

2.4.3 Life Changes and Stress

Research has shown that life events can be significant in the adjustment of non-demented elderly people (Murphy, 1983). Moreover, such life changes as the death of a spouse, are often associated with the diagnosis of, or apparent deterioration in the condition of someone with senile dementia (Woods, 1989). This may be due to the loss of someone to compensate for the demented person's disabilities rather than an actual deterioration (Holden and Woods, 1982).

However, a recent study (Kirby et al, 1988) identified a syndrome termed hysterical pseudodementia. This, it is proposed can occur with or in the absence of underlying organic pathology. The hysterical behaviour is represented as resulting from an adjustment or developmental crisis. In the two case histories presented one subject appeared to be reacting to a problem of role loss. In the other an underlying organic complaint had been amplified by inconsistent and unpredictable family contact. This had resulted in an escalating cycle of avoidance and distress cycle. A fixed schedule of visiting resulted in improved functioning in terms of both memory and judgement.

Life changes are likely to have an effect on the competence of demented elderly people because they are stress inducing. Methods of coping with stress before the onset of dementia may be reflected in an individual's behavioural response to stress. In an analysis of the influences on residents who wandered, Snyder et al (1978) identified psycho-social factors that may influence a tendency to wander. Among these were search for security, previous work roles and lifelong patterns of coping with stress. Similarly, Monsour and Robb (1982) found that wanderers had

historically engaged in higher levels of social and leisure activities, experienced more stressful life events and tended to pace and walk under stress.

It is self-evident that one of the most important "life changes" associated with residential care is the impact of the change from a life in the community to communal life in a home. A number of studies have found that the process of entry to residential care and the change in environment that results has a deleterious effect (Lieberman, 1961; Blenker, 1967). There is an increase in mortality and decline in both activity levels and psychological well being. One explanation of the high mortality rate (Markson and Cumming, 1974; Wittels and Botwinick, 1974) has been termed the "relocation effect".

Tobin and Lieberman (1976) conducted a longitudinal study of applicants to three homes for the aged. They identified factors affecting the well being of those admitted to residential care as opposed to those remaining in the community. The type of people on a waiting list and in care were more alike in terms of cognitive functioning, emotional state and self-perception than those in the community sample. It was proposed that this was due both to selection bias (the more vulnerable were more likely to enter care) and to the adverse effects of the process of entering an institution. They also identified environmental discontinuity and maintained that the larger the difference between the new and old environments the greater the possibility that the elderly person would have to adapt beyond their capacity.

Brearley (1977) points out that the admission of elderly people to residential care is normally associated with distressing events such as a crisis in caring at home or deterioration of their own mental or physical condition. Already in a low state, therefore, the new entrants will have to cope with adjusting to other residents, staff and the rules and expectations of the institution. There is a need for them to assert their own individuality and to feel they have a role to play in the new situation. They may feel angry to the point of violence. Brearley (1977) saw apathy, withdrawal and denial in this situation as a form of passive violence.

Not all the effects of moving into residential care need be negative. Focussing on alert elderly people Weihstock and Bennet (1971) found an improvement in cognitive functioning amongst new entrants. Established residents' cognition tended to decline over time. However, for people with senile dementia the process of changing from one environment to another is likely to be particularly traumatic. Goplerud (1979) found that rapid deinstitutionalization of mental hospital patients resulted in a sharp rise in mortality.

Pattie and Gilleard (1978b) assessed 45 demented clients before and immediately after admission to residential care. They were followed up six months and a year after admission and the officers-in-charge were asked to assess the clients adjustment to the home. Within a year 10 had been hospitalised, 17 poorly adjusted residents had deteriorated and 17 well adjusted residents had maintained the same level of functioning. Those who had made poor adjustments and those who died or were hospitalised started off at about the same level of functioning but the latter group showed a sharp deterioration on admission. The authors investigated whether the level of dementia had any effect on outcome, but found no relationship.

The length of time it takes residents to adjust to residential care has been the subject of various studies. Bennett (1963) estimated that it took at least two months to realise "loss of self" whereas Rodstein et al (1976) found that three-quarters of new residents had overcome any problems of adjustment within six months. Any assessment of a resident's well-being, therefore, may be affected by the process of adjustment in the first few months.

In a study concerned with the effect of the environment of residential care on the demented residents it is important to allow, as far as possible for such confounding factors as life events. The life change that is most likely to have a profound impact in this context is the process of admission and adjustment to the home. In order to

exclude effects resulting from the process of adjustment to the home, therefore, it is necessary to include only people who have been resident for a length of time.

2.5 Conclusion

The social ecology model has been identified as a useful approach for the assessment of people with senile dementia and the environment. The effects of the environment are represented in this approach as a function of both the competence of the individual and the environmental press. Although normal aging is associated to a very limited degree with loss of competence, the condition of senile dementia has a profound impact on cognitive competence. Changes in competence may be affected by personal characteristics of the individual but this study is primarily concerned with the effects of the "environmental system" of residential care.

CHAPTER 3
THEORETICAL PERSPECTIVES AND PREVIOUS RESEARCH
THE ENVIRONMENTAL SYSTEM

Introduction

The previous chapter identified the social ecology model as a useful framework in the assessment of environmental influences on behaviour. This study is concerned with the environments in residential homes for elderly people. A brief look at the role of residential care in the continuum of care, therefore, is followed by a discussion of the research into the supra-personal, personal, social and physical environmental effects of this particular milieu.

3.1 The Residential Care Service

Residential care is only one possible option in the care of elderly demented people. Case management (Challis and Davies, 1986) enables a co-ordinated approach to service provision to be adopted in the community care of severely impaired elderly people. However, in the absence of this approach, the services allocated in practice depend primarily upon the resources available and the current behaviour of the client.

People with dementia are so well spread through various services that it was possible for MacDonald et al (1982) to follow a matched set of 72 clients in four types of facility: local authority home, day centre, day hospital and hospital ward over nine months. They found that the different types of facility had no significant effect on outcome in terms of mortality or dementia. There was some indication of an improvement in dependency that was linked to day care. Pattie and Gilleard (1978a) compared three groups of 30 in psychogeriatric and psychiatric wards and a specialist home over an 18 month period. Again they found no difference resulting from location in mortality, physical disability or apathy. Communication difficulties and social disturbance deteriorated most in the psychogeriatric ward. However, when "life satisfaction" among alert elderly people was compared across two

different types of residential establishments in the US, it was found to be higher within the facility which offered fewer constraints upon behaviour (Wolk and Telleen, 1976).

A problem associated with comparisons of people over disparate types of facility is that there are few easily applied measures with which to compare the different environments in which they live. Such studies face the difficulty that a multitude of different influences and interactions are incorporated under the heading "geriatric ward" or "day care". Specifically they ignore the issues of person-environment fit. Thus an inappropriately placed person may not thrive in a geriatric ward, however positive the environment. Conflict in the home environment may have a similar effect upon a person receiving appropriate day care. Clough (1981) suggests typologies of settings which are intended to make widely varying institutions comparable on a number of dimensions. These, however are very broad and do not encompass the differences relevant when day care, for example, is compared with residential care.

This study is concerned with variations in the treatments or environments within one type of provision, local authority residential care. The social ecology approach identified four principal dimensions to the environment: supra-personal, personal, social and physical. It is necessary to identify within these dimensions the specific influences which are likely to be of importance to residents with senile dementia.

3.2 Supra-Personal Environment

Local authority "homes" for elderly people are typically forty bedded, purpose built establishments. There is an inherent contradiction in this situation; a public institution is supposed to provide a homely atmosphere and true feeling of home to people who have lived in small family units or on their own for most of their lives.

The problems of the conflict between the public and private dimensions of homes have been well researched and possible solutions proposed (Willcocks et al, 1987). However, these have been explored almost exclusively from the point of view of the alert but physically disabled resident. There is a school of thought that many attempts to make homes more homely actually negate some of the benefits of residential care (Meteyard, 1985).

3.2.1 Other Residents

One of the principal foci of debate with regard to the supra-personal environment of the demented elderly in residential care is the degree to which they should be integrated with residents who have no mental deficits. The debate over the value of separation or integration of "elderly mentally infirm" residents was galvanised by Meacher (1972) who argued strongly against separatism. He considered that isolating and labelling individuals as "confused" created roles and stereotypes so that it was easier for residents and staff to accept the self-fulfilling prophecies.

While there is a lack of any study in which the comparative benefits of specialist and non-specialist homes is explored, the debate, as mentioned in chapter 1, has largely been overtaken by events. A number of authors (Mushet, 1985; De Zoysa and Blessed, 1984) have identified the prevalence of demented elderly in "ordinary" homes, whether specialist care facilities exist in an area or not. In a study by Wilkin and Jolley (1979) officers-in-charge said that the main problem of managing the confused residents was their relationship with the lucid residents. Evans et al (1981) assessed six homes in the Manchester area, with a representative range of the "mix" of lucid and confused residents. They concluded that a mix much above 30% confused, created problems for staff and lucid residents. If the mix was 30% or below, they felt the advantages gained by the demented residents were of a more normal homelike and stimulating atmosphere.

Harris et al (1977), however, found in a study of eight homes that "confused " residents do not integrate into the life of mixed homes but tended to be excluded

from particular sitting rooms and rarely were spoken to by alert residents. Norman (1987) argues that much of the feeling against specialist homes assumes that the alternative is integration and access to facilities available in ordinary homes. She maintains that in many cases the alternative is long-stay psychiatric wards and thus even more severe segregation. Moreover, the assumption of a lower quality of life in all specialist homes was not borne out by her study of 14 specialist homes selected because they were "seeking to provide high-quality care to long-stay dementia sufferers". Similar conclusions were drawn by the Social Services Inspectorate (1985) in their study of 20 specialist facilities. The message from these studies was that good care practices were similar whether the target group was the mentally alert or confused.

The population of a home for elderly people does not consist only of long-stay residents. The provision of day and respite care means there is also a throughput of other elderly people for whom the establishment is not their home. What effect does this have on demented residents in the home?

Sinclair (1988) argues that in providing respite care the proportion of residents who are short-stay are too small to impinge very much on other residents in the home. Allen (1983) noted that short-stay residents did not have much impact upon other residents who seemed indifferent to them unless they were in direct conflict, over where to sit for example. However, when the situation was assessed from the perspective of the short-stay residents, both Kuh and Boldy (1981) and Allen (1983), reported that long-stay residents were unfriendly and rejecting.

In Home Life (Centre for Policy on Aging, 1984) short term care was seen as potentially disruptive in long-stay homes and it was suggested that wherever possible separate units should be provided. This recommendation would appear to fit well with the views of elderly people themselves. Allen (1983) found that from the recipients' point of view short-stay care appeared to be most successful when they stayed in a specialised home or unit.

The provision of day care in long-stay homes suffers from similar difficulties faced by short term care (Allen, 1986). Edwards and Sinclair (1980) found that day care was more successful when provided in separate facilities in the homes than when day care residents were integrated into the home. When day care residents mix with long-stay residents they are often regarded as intruders, particularly if they are seen to be competing for territory or staff time and attention (Allen, 1986).

A number of aspects of the supra-personal environment provided by the resident population of the homes are potential influences upon the long-stay residents. The "type" of population will reflect admission policies, such as restricted admission to people with mental infirmity. The proportion of "confused" residents has also been seen as an important influence on resident well-being. Moreover, the use of the homes to provide day and short term care may prove disruptive.

3.2.2 Staffing

The members of staff in a home for elderly people form another population, in many ways quite separate, from the resident population. Staff play a crucial role in determining the well-being of residents in the home. By definition, residents are often highly dependent upon care staff for the basic functions of life, personal care, getting fed and so on. The prevailing ethos, training and number of staff will be a major influence on residents in the homes, either directly or indirectly. In discussing the influence of the characteristics of the staff, it is necessary to establish the tasks and roles of staff in the homes.

i) Roles of Staff

There are three categories of staff in homes for elderly people whom Imber (1977) found to have significantly different roles:

- Supervisory "administering drugs, changing dressings, reading to residents, playing games with residents, organising social events and paperwork"
- Care staff "washing clothes, washing residents, dressing residents, making beds and taking residents to the toilet, sluicing"
- Domestic staff "preparing food, cleaning, tidying and washing up"

Willcocks et al (1987) found that supervisory staff had their time dominated by office administrative tasks, and care staff by keeping residents clean in one way or another. Although domestic tasks were done by all grades of staff this was the only type of task undertaken by domestic staff. In terms of proportions, 17% of all staff in homes were employed in a supervisory capacity and 50% were care staff.

One of the problems associated with assessing the quality of staff care is that there are divergent views on the role of caring staff. Lipman (1977a) advocates greater separation between staff and residents to enhance co-operation and maintenance of skills. Similarly Clough (1981) views staff as a background resource, keeping a low profile. Brearley (1977), however, identifies a split between residents and staff as having a negative effect as this can create hostility between staff who feel rejected and residents who feel vulnerable and afraid. Of course, a great deal depends on how the home is managed, its aims and objectives, and if these are working in practice. Woods and Britton (1985) suggest:

An important way of achieving the right social distance is to increase the status of residents, perhaps by acknowledging the often forgotten fact that the institution exists for their benefit! (p270)

Contact with staff does not necessarily mean beneficial contact. Fairhurst (1978) observed four types of talk between geriatric patients in hospital and staff:

- Time-out talk (an alternative to "real" duties) often taking the form of joking.
- Ceremonial talk task oriented eg "it's time to get up", used to ensure the smooth execution of tasks.
- Superlative talk consisting of unwarranted praise such as "wonderful" - often used with demented patients.
- Persuasive talk used to get patients to take unwanted medicines or participate in activities.

Lipman et al (1979) analysed whether verbal interactions with residents of homes for elderly people were supportive or instrumental. The proportion of supportive interactions between residents was high in all homes. However, the relationship between staff and residents varied between homes: the proportion of staff-resident interactions that were classified as supportive was as low as 22% in some homes and as high as 70% in others. In many homes the majority of staff-resident interactions were instrumental. Whether residents were confused or not did not affect the proportion of supportive interactions with them.

Fleishman et al (1987) found that cognitively impaired elderly people in nine units received lower quality of care than those without impairments. Staff members were less inclined to have contact with patients who were aggressive or apathetic.

Godlove et al (1980) found that staff preferred looking after physically dependent residents partly because they are easier to deal with and partly because staff felt able to be more helpful. However, Evans et al (1981) found that in homes for

elderly people staff appeared to like working with confused residents - of those who specified a group, 70% mentioned confused residents.

ii) Training

Without adequate training neither the quality nor quantity of social contact is likely to improve. Very little work has been done on the effectiveness of training. Davies and Knapp (1981) found little evidence of the effect of training on the quality of life for residents. W and B. (1985) suggest that training is only effective if the institution is structured to encourage the trained skill to be used.

Sperbeck and Whitbourne (1981), in the USA, trained staff in behaviour modification plans specific to four individuals. They suggested that staff training could effectively reduce dependency. The approach adopted by the training package was based on the assumption that underlying reinforcers for elderly people become increasingly more unique with age as people diverge on needs, interests and capacities

Senile dementia is a medical condition, which suggests that medical expertise among the staff would be an appropriate training requirement. Moreover, the use of drugs in homes for elderly people is an area of some concern (see section 3.3.1). However, nursing qualifications may be associated with a type of training that is inappropriate for homes for elderly people. The ingrained orientation of many nurses is to be over-helpful, undermining peoples' independence (Nowakowski, 1985).

Training requirements of staff in residential homes are far from straightforward. Wilkin and Jolley (1979) recommended that the provision of short training packages should include "medical and social aspects of aging, the sociology of institutions and applied psychology as well as training in physical care". There is a growing quantity of material available for training purposes (Atherton, 1986; Douglas and Payne, 1985, 1987, 1988; Phillipson and Strang, 1987). However, Greenwell (1989) suggests that

there is a lack of guidance still upon the efficacy of this training material and the degree to which it portrays elderly people generally in a positive light.

iii) Numbers and Turnover

However well trained the staff, if there are too few of them to cope with the physical requirements then the "conveyor belt" system has to be adopted simply to cope with basic needs. In a study in Manchester (Evans et al, 1981) in the two homes with the greatest number of confused residents, a sensitive and rewarding regime of personal care would have consumed one third of all staff time.

Davies and Knapp (1981) used data in the Residential Census for 82 homes for elderly people and found that the employment of care staff was positively related to resident dependency and to the provision of day care. The number of care staff employed was influenced only slightly by design features whereas the number of domestic staff was influenced by many design features and not at all by the dependency of residents.

The actual staffing level in a home will depend upon vacancy levels, sickness and turnover of staff as well as the official establishment of the homes. Knapp and Harris (1981) found that dependency characteristics had no effect on staff turnover or vacancies. The problems of recruiting and retaining suitable staff appeared to lie with the management of the homes rather than with the residents. The authors found that there were more supervisory staff vacancies where the planned staff-resident ratios were relatively high. In contrast there were more care staff vacancies where the planned staff-resident ratios were lower.

There is an underlying assumption that high turnover of staff is likely to have a negative impact on resident well-being (Burling, 1956; Handschu, 1973). However there appears to be little evidence on the impact of staff turnover or sickness on residents. One analysis of discharge rates of North Carolina nursing homes (Halbur and Fears, 1986) found high turnover was associated with favourable outcomes for

residents. They suggested that new recruits may be more prepared to accept different ways of working and use of technological innovations.

Any investigation into the effect of the environment in local authority care homes on the residents must take into consideration the type of qualifications held, the numbers and the turnover of staff. For the individual resident, however, the experience of residential care will also be affected by their "personal environment".

3.3 Personal Environment

In the social ecology framework two aspects of the environment of residential care are classified as personal: the use of drugs and personal relationships.

3.3.1 Drugs

An area of major concern is the administration of medication in homes for elderly people. Careful drug administration is of particular importance with elderly people as the risk of an adverse drug reaction is generally higher: in people aged over 80 the risk is three times that in adults aged between 30 and 40 (Melmon, 1971; Durgin, 1982). There is also the problem of multiple drug use. Adverse reactions are even more likely to occur when four or more drugs are being taken (Shaw and Opit, 1976). Studies of drug use in residential establishments have found between 21% and 37% of residents in local authority homes taking four or more drugs (Bowling and Bleathman 1982, Wade et al, 1983).

Psychotropic drugs, which act on the central nervous system and have a sedative or mood altering effect, are of particular concern in the present study as they:

...permit the control and management of personal and social problems. Such drugs may be functional for staff but dysfunctional for elderly residents. (Wade et al, 1986, p178)

The difficulties of management of demented elderly people and associated behavioural difficulties may encourage staff to adopt the use of psychotropic drugs. Wade et al (1983) found that 37% of residents in local authority homes had taken psychotropic drugs in a 24 hour period. Bowling and Bleathman (1982) found that 44% of residents in local authority homes were taking at least one psychotropic drug. These two studies also found that there appeared to be insufficient medical supervision of residents, who often had little contact with their GP. In any study of the effects of residential care on residents with senile dementia, therefore, it is important to monitor the use of psychotropic drugs.

3.3.2 Personal Relationships

The existence of a confidante has been shown to significantly affect outcomes for elderly people in the general population (Berkman and Syme, 1979). Little work appears to have been done in relation to the effect of personal relationships on demented elderly people. Retsinas and Garrity (1985) found that loners in old people's homes tended to be confused. Confusion was a significant factor in explaining the degree to which residents formed friendships. As dementia progresses the ability to form and retain friendships is severely limited (Gray and Isaacs 1979). However, it would be reasonable to suppose that support from significant others in the early stages of the disease would be an influence on the ability to cope with environmental stress.

The nature of the relationship between people with senile dementia and people who care for them is also of importance. Bergmann et al (1984) found that in the short term "good" outcomes for day hospital patients were associated with a high level of dependence upon the carers. Relationships characterised by the patient dominating the carer were associated with "poor" outcomes.

Social isolation does appear to be related to senile dementia in the community (Gilhooly, 1984). It is seen as a consequence rather than a cause of mental disorders in old age (Lowenthal, 1965). One study found that although social isolation did not

appear to affect mortality, it was found to be a major factor in deciding whether people with senile dementia entered an institution (Bergmann et al, 1978).

Once in residential care the continuation of contact with residents' past life and relationships tends to be in the form of visitors. Greene and Monahan (1982) found that the frequency with which relatives and friends visited residents in nursing homes had a significant effect on psychosocial impairment. Wilkin and Jolley (1979) found that the overall level of visiting was low, with 35% of residents of homes being rarely or never visited. They found that length of stay and the presence of mental infirmity discouraged visiting. The physical location of the home in relation to where the resident lived previously also will affect the number and frequency of visits (Norman, 1984).

For alert elderly people personal relationships are one of the most important aspects of the environment. The question of how important an influence they are on demented people remains. People with senile dementia are often reported to have difficulty remembering relatives (Woods, 1989). Those who are in residential care, away from people with whom they have long-established relationships, are likely to have even more difficulty in maintaining relationships. The degree to which residents will form new, and maintain long-standing, relationships will be dependent in part on the attitudes of staff (Woods and Britton, 1985) and the social environment of the home.

3.4 The Social Environment

The attitudes and qualifications of staff will also be a fundamental influence on the social environment, particularly the type of care practices and regime that prevail in a home (Davies and Knapp, 1981). In an institutional setting the way work is organised can have a crucial effect on outcomes among people who are being cared for. Miller (1985) compared three pairs of wards in three hospitals contrasting the effect of task oriented practices with individualised care for elderly patients. The task oriented wards had twice the level of double incontinence, a lower turnover of

patients and a higher mortality rate. However, in the field of residential care for elderly people the results of research have been less clear.

3.4.1 Caring Regimes

Much work in assessing the social environment has concentrated on the classification of the social environment of homes for elderly people in terms of caring regimes. The aim has been to define and measure aspects of care practices and policies that are assumed to have negative or beneficial effects. Goffman's (1962) theory of total institutions has been adapted to homes for elderly people by Hughes and Wilkin (1980) and summarised by Goldberg and Connelly (1982). A "total institution " is one in which:

- All aspects of daily life are conducted in the same place under the same authority
- Daily activity is carried out with large numbers of others who are treated alike and doing the same thing;
- Daily activity is routinised and fixed to a schedule which is imposed on inmates by formal rulings and a body of officials;
- The various enforced activities and routines constitute "a rational plan" designed to fulfill the official aims of the institution.

The concept was adapted by King et al (1971) to develop measures of "inmate management" based on Goffman's definition for homes for people with mentally handicaps. Institutions were classified as tending towards resident-oriented or institutionally-oriented regimes along four dimensions: rigidity of routine, block treatment, depersonalisation and social distance between staff and inmates.

A study in Cheshire (Kimbell et al, 1974) adapted this approach for use in old peoples homes. No relationship was found between overall dependency and regime but the level of mental confusion among residents was related to low social distance between staff and residents and a more structured routine. One of the problems of

such a cross-sectional study, is difficulty in establishing cause and effect. For example, the officers-in-charge who provided a more flexible routine may have been more prepared to admit and tolerate confused residents.

Pincus (1968) distinguished four dimensions of the institutional environment; public/private, structured/unstructured, resource rich/sparse and the isolated/integrated dimensions. The measurement of each was done in terms of physical plans, rules and regulations and programme and staff behaviour, providing twelve "cells" which describe the home. A fifth dimension - personalisation - referring to social distance between staff and residents was added later (Pincus and Wood, 1970).

Based as they are on the environmental totality model the approaches to assessing regime outlined above encounter a number of problems. The "regime" of a home may be inconsistent - Booth et al (1982) argue that in many homes there are multiple regimes, that homes are a confused mixture of unnecessary, unhelpful rules and sensitive practice. Moreover, the indicators chosen may not be empirically consistent internally in reflecting the desired aspect of the home. Booth (1985) used cluster analysis on data collected to reflect the regimes of homes. He identified three clusters of homes, which he defined as having positive, multiple or restrictive regimes. Full definitions of these regime types can be found in chapter 8.

Although this provided a useful way of categorising homes, the different types of home did not appear to affect the outcome for residents in terms of dependency indicators (Booth, 1986). Booth states that increased dependency was seen as a likely outcome in that "the weight of informed opinion now accepts that the process of care may in itself induce dependency (DHSS, 1979; Institute of Medicine, 1977; PSSC, 1977)". Baltes et al (1980) showed that staff in USA nursing homes typically failed to respond to independent behaviour but strongly supported dependent behaviour. Baltes et al (1983) argue that residents do not experience learned helplessness but use dependent behaviour to obtain reinforcement. Thus the

residents can be seen as active contributors to the caring regime. This contrasts with other studies (eg Bowker, 1981) in which the residents are seen very much the victims of a medical model of practice that needs "humanising".

Many of the terms used in these investigations are heavily value laden. Regimes are "positive" if they allow greater freedom. Regimes are "restrictive" if they limit choice. Residents are described as "victims" and so on. Such labelling may not be appropriate, particularly in the care of people with senile dementia. Hegeman and Tobin (1988) conducted a survey of autonomy enhancement programmes for mentally impaired elderly people in the three states in the USA. They found a number of programmes which were described as autonomy enhancing but involved the use of locked and segregated units. Several of these reported enhanced functioning of residents. The authors suggest this is due to elimination of other physical or chemical restraints which may ultimately increase functioning and authentic decision making. It may be inappropriate, therefore, to label certain practices or policies as "restrictive" or "positive" without a clear association with the outcomes for the residents.

3.4.2 Environmental "fit" and Social Climate

In the congruence model (Kahana et al, 1980) morale was predicted by measuring the "fit" between the elderly person and their environment. Congruence was measured on seven dimensions: segregation, congregation, institutional control, structure stimulation, affect and impulse control. In a study of three homes it was found that if there was too much congregate activity for the individual this would adversely affect morale. Similarly, morale was affected if the resident felt "out of step" in whatever direction as regards "impulse control". However, in the home in which individual-environmental congruence was least important, there were more options open to residents and the home had fewer "total institution" features.

The Sheltered Care Environment Scale (SCES) was developed by Moos and Lemke (1984) as part of the Multiphasic Environmental Assessment Procedure (MEAP). The

MEAP is a method of assessing residential care settings, and consists of a general rating scale, a checklist of physical and architectural features, a policy and programme information form, resident and staff information form as well as the SCES. This methodology is based in the social ecology model of aging and represents the different dimensions of the environmental system as interactive.

The SCES is designed to assess the social climate of a facility by obtaining the perceptions of all, or a proportion of the staff and residents in a facility. Seven dimensions: cohesion, conflict, independence, self-exploration, organisation, resident influence, and physical comfort, are derived from 63 items. These are described in more detail in chapters 5 and 8. The dimensions of the social climate and their interrelationships are intended to reflect the character of the institution. Different climates will reflect the characteristics of the resident population of the homes as well as the policies and practices of the care staff.

This method of assessing the social environment represents a broader approach than the assessment of caring regimes identified above. The "objective" information gathered by the policy and programme information form in the MEAP is closer in some ways to the basis of the regime measures. However, there is likely to be a close relationship between the regime and the social climate of a home. It might be possible to deduce the regime from the social climate. For example, low "independence" and low "resident influence" might reflect Booth's definition of a "restrictive" regime. However, it would be impossible in the absence of numerous value laden assumptions to deduce from the regime types such aspects of the social climate as the level of "cohesion" or "conflict".

Various researchers have used parts and combinations of the MEAP (eg Lemke and Moos, 1980, 1981) as a basis for assessing both comparison of the social climate in different facilities and comparison of facilities over time. This latter may be of particular interest when the intention is to effect change by changing the environment. A study by Ransen (1981) indicated that long term results of two

intervention programmes were dependent on whether systematic alterations had occurred from a social ecological perspective.

In examining determinants of the social climate Moos and Igra (1980) found that establishments with more socio-recreational activities and policies which encouraged resident control had high levels of "cohesion" and "independence". Less "resident influence" and "independence" were found to be associated with higher staffing levels, even after allowance had been made for type of facility.

The outcomes for residents using the social ecological approach, however, have tended to focus on other measures in MEAP such as resident functioning (Holland et al, 1981) or community integration (David et al, 1981). Indeed "engagement" or "rate of activity" have often been regarded as appropriate outcome measures in assessments of residential care settings (eg Rothwell et al, 1983; Jenkins et al, 1977). This is partly due to the very low level of activity that predominates in residential institutions for elderly people (McFadyen, 1984; Godlove et al, 1980). Social interaction is also very low. In observation studies McFadyen et al (1982) and Godlove et al (1980) found that about 12-13% of the day time was spent in social contact by residents in homes for elderly people.

3.4.3 Activities

Attempts have been made to increase activity rate or social interaction by behavioural conditioning. Mueller and Atlas (1972) increased interaction dramatically within a group of five withdrawn and uncommunicative patients using token reinforcement and conversation facilities. However, in the majority of cases the approach has been to provide additional activities.

Studies that have assessed additional activities (Felce and Jenkins, 1979; McCormack and Whitehead, 1981) have found on the whole that raised engagement levels have been temporary. Little thought appears to have been given to whether the activities were likely to be of much interest to participating residents. Tinsley et al (1985)

devised a system for classifying activities using cluster analysis on responses from 1,649 55-75 year olds living in the community. The benefit received was represented as: companionship, compensation, temporary disengagement, comfortable solitude, expressive solitude and expressive service.

In terms of the relationship between activities and people with senile dementia the intention is often to reduce sensory deprivation. However, there is some evidence that too many organised activities may confuse residents (Kimbell et al, 1974). Woods and Britton (1985) identified an increasing concern to specify the type and intention of activity or stimulation used for demented people. For example, Snyder et al (1978) observed that wandering can be reduced by satisfying the wanderers needs for self directed (if haphazard) exercise and security. Social groupwork (Carey and Hansen, 1985-6) was found to develop a sense of belonging and togetherness while focussing on maintaining social and mental function of residents with Alzheimers disease.

Berman and Rappaport (1984) recommend that activities should take into account stamina, tolerance of unfamiliar surroundings and comfort with groups of people. They suggest that structured aims and labelling can curb negative behaviour. Feier and Leight (1981) describe a communication cognition programme which emphasised activities but in a specialised context. The aim was to build on interests and enhance learning abilities that deteriorate with age. Presentation was simple but on an adult level. No formal assessment was done but anecdotal, informal evidence indicated that there appeared to be an improvement in the first three months, after which the programme needed to continue simply to sustain this level of improvement.

Nolen (1987) suggested a four step programme for meeting the activity needs of withdrawn or confused elderly residents. These consist of establishing communication using statements (rather than questions) and non-verbal means, rituals regarding time and expectations of residents, ties to the external environment and consistency

across staff. A lot of work with demented people, however, currently focuses on specific therapies.

3.4.4 Reality Orientation (RO), Reminiscence and Validation Therapy

Often activities organised for demented elderly people are intended to use the technique of reality orientation. This approach is intended to reintroduce the disorientated person to current reality (Folsom, 1968). Three major components were identified: informal or 24 hour RO, RO sessions or classes and staff attitudes to patients. Woods and Britton (1985) note that this last aspect does not appear to have been developed or investigated. However there has been a large growth of interest in 24 hour and sessional RO within the last decade. 24 hour RO involves staff reinforcing the current situation with every contact. This is in terms of time, place and identities of people around the demented person. RO sessions were intended to back up this approach rather than be conducted separately. Groups of three to six residents or patients would meet daily for about half an hour. All grades of staff would be included and discussions concerned current information using a tangible focus such as a picture or music. Holden and Woods (1982) provide a useful practical manual and guide to research in the field.

Reviews of research findings (Woods and Britton, 1985; Holden and Woods, 1982) suggest that verbal orientation is most frequently found to be improved by RO, with very little evidence of generalised behavioural change. This may be due to the fact that while RO sessions may be carried out as planned (Holden and Woods, 1982) 24 hour RO rarely, if ever, is (Hanley, 1984). Although staff are often enthusiastic about the approach their actual behaviour may not change when interacting with the residents (Hanley, 1984). Woods and Britton suggest that 24 hour RO has not been truly tested yet as it has never clearly been implemented.

Reminiscence therapy (Age Concern, 1984; Kaminsky, 1984; Coleman, 1986) has become increasingly popular over the last few years (Woods and Britton, 1985) both with alert and confused elderly people. Discussions in groups or with individual

elderly people focus on events in the past, as far as possible tying these into the individuals life experience via photographs, smells, objects and music. Woods and Britton note that for the most severely demented patients a piece of music from their youth may elicit a response where nothing else has. They also note that it potentially helps staff to see the patient as a whole person. Research evidence on its effectiveness however tends to be anecdotal. For example, Norris and Abu El Eileh (1982) describe the results in terms of increased participation and more spontaneity and enjoyment, but do not tie this into particular methods or materials.

Validation therapy (Feil, 1972; Feil, 1985; Van Ammelsvoort Jones, 1985) has been developed in the USA. Using this approach, workers try to link in to and understand the feelings being expressed by disoriented people over the age of 80. This often requires detailed knowledge of the life history of the individual concerned as, in individuals regarded as suitable for the therapy, much behaviour may be acting out unresolved past conflicts (Feil, 1985).

Assessments of specific techniques such as reality orientation or validation therapy often make use of control groups, or use before and after measures to establish whether the treatment has had the desired effect. One difficulty with this type of design is the need to allow for "externalities", that is confounding environmental factors. In particular, the training and involvement of staff required for such experiments, may result in a profound change of social climate taking place, which has little to do with the specific technique being tested. If such effects are to be allowed for an understanding of the probable influences and a reliable method of monitoring them are required.

3.5 The Physical Environment

Lawton (1983) found that studies which assessed the environment had, with few exceptions, not differentiated the social and physical aspects of the environment nor linked them in single dimensions or ratings. Keen (1989) points out that this results in an inability to describe and measure the impact of design on demented

elderly people. Many theoretical frameworks imply a deterministic relationship between the physical environment and the individuals that use it (Keen, 1989). Even where the theoretical relationship is two-way, in practice there is an assumption that the environment acts on the individual (eg Lawton, 1981). This type of approach, which is often implicit, has been termed "architectural determinism" (Hillier et al, 1987).

Keen (1989) argues that people are capable of, and do, create environments that they enjoy living in. Demented elderly people may also act on their physical environment. For example, Woods and Britton (1985) discuss the attempts that have been made to try to improve social interaction by rearrangement of seating in lounges. The normal arrangement to be found in lounges in most old peoples homes and in day rooms in hospitals is a large space in the central area and the chairs with their backs to the walls. This is about the worst arrangement possible if social interaction is to be encouraged and if the chairs are rearranged in small groups round coffee tables there is an increase in interaction (Sommer and Ross, 1958; Peterson et al, 1977). However it is very difficult to maintain such an arrangement (in both studies chairs kept finding their way back to the walls). Woods and Britton suggest this could be due to care or domestic staff convenience or to residents wishing to have something solid behind them or to facilitate their view of what is going on. If the change were due to residents or patients wishes it would prove an interesting example of demented elderly people changing the physical environmental "press" in order to maximize their "competence".

The interpretation of physical surroundings will necessarily depend on the individuals subjective feelings and competences (Keen, 1989). In the example given above, the lounges or day rooms were seen by staff as places for social interaction; by the residents they may have been seen as places for observation. The seating layouts required for each activity are very different, hence the conflict over the most appropriate arrangement. It is important therefore, in any assessment of the

physical environment to link these as closely as possible to the needs of the residents.

3.5.1 Design of homes

One of the major difficulties in designing an appropriate physical environment in which to provide residential care for elderly demented people is the variety of needs that it should fulfill. Ideally the home should combine a prosthetic function with a homely atmosphere. The difficulties encountered both by physically and mentally disabled people should be allowed for, together with the needs for privacy and territoriality. De Long (1974) argues that environmental design for elderly people should provide:

... a prosthetic environment to increase the competence of the older person, or an environment reduced in complexity and so clearly encoded that additional redundancy compensates for decreased competence. (p108)

Scottish Action on Dementia (1986) also took as a main point of principle that the physical environment should be "compensating" for disability. This emphasis upon compensation fits well into the ecological approach being adopted here, but still begs the question of what people with senile dementia as a group require from their physical environment. In establishing these requirements the issue of specialist or non-specialist provision is also raised: are the design needs of people with cognitive difficulties and those with physical disabilities compatible?

Lawton (1979) described the Weiss Institute of the Philadelphia Geriatric Centre which was designed with the needs of elderly mentally impaired people in mind. The wing comprises of a large open space surrounded by bedrooms so from the door of his or her bedroom the patient can see everything that is going on. Colour is used on the floor to provide notional corridors and the dining area is visible but separated from the rest of the space by means of a pole divider. Lawton regards

this as a very unsuitable environment for the mentally capable as they would have their "life space grossly constricted by the forced centering of most activity in the central area". Lawton's study of staff and relations' attitudes revealed a strong conviction that mixing the more alert and the more impaired produced a deleterious effect upon the better off residents.

Harris and Lipman (1980) in contrast, emphasise the advantages of integration. They feel that there are benefits to both sides when mentally alert residents assist the less able. However, they found that in communally designed homes there was in effect segregation as the confused residents tended to use one particular lounge and eat separately. These are the equivalent to the "hotel" type design identified by Norman (1984) in which there is a central dining room and communal spaces are shared by all residents.

In homes designed for group living bedrooms are arranged in groups of eight or ten and have dining and communal areas specific to the group. Lipman advocated this type of design and minimal routine staff contact in order effectively to throw residents on their own resources to cooperate producing meals and so on. If, as suggested earlier, the ratio of demented residents gets higher in homes for elderly people it is possible to foresee a number of difficulties with such an approach.

The group living design of homes was pioneered in 1969 (Hitch 1970) with the aim that residents should be encouraged to take part in purposeful daily living. The idea caught on quickly and by 1980 in a survey of 29 local authorities (Willcocks et al, 1982) 14% of homes were classified as group and 19% as semi-group. There is some evidence that the group design encourages staff to do less for residents (Simpson, 1971). An observational study also found there was a marked increase in activity among residents with dementia following the introduction of group living (Rothwell et al, 1983). However, one recent comparative longitudinal study of homes found very little effect on resident outcomes in terms of change in personal functioning over a period of two years (Booth and Phillips, 1987). The Wyvern Partnership study

(1979) and Thomas (1981) found that considerable differences emerged in the way space was used and in the life of identically designed group living homes. However, the same study found that group homes tended to be more "therapeutically" oriented than non-group homes. Norman (1984) suggests that there are advantages to both types of design and that the purpose of the building and aims be thought through carefully in the early design stage.

In 1976 Lipman and Slater suggested the possible use of high rise buildings to get around some of the problems presented by conventional home design for demented residents. These problems include long corridors with many similar doors and such restricted space that rooms appear very similar. In examining the problem of confused residents finding their way around they suggest that the number of corridor junctions with similar views in each direction gives an indication of how confusing a home is. Opportunity to meet other people on the way from one place to another may help but may prove even more confusing. Even small group units which may individually provide an easily assimilated environment might be so similar to one another that a resident may wander into the wrong unit and be unaware of the fact

The value of retained skills is illustrated by Munn (1984). She found that the experience of taking demented residents on holiday to a traditionally designed guest house suggested that the normality of the surroundings in terms of their previous life experiences encouraged them to find their way around more easily.

A major design concern which emerges from these studies is the need of residents to orientate themselves in space. A resident needs to be able to find his or her way to where they wish to go if they are to exert even minimal control over the activities of daily living.

3.5.2 Aids to Orientation

Other aspects of the physical environment than the design of the home will affect the orientation of demented residents. One early, classic study by Cameron (1941) established a link between darkness and delirium in demented subjects. The investigation was into patients who suffered from night disturbance among whom the delirium appeared more quickly and was more marked. He suggested that demented people were more dependent upon continual visual scanning in order to maintain orientation in space than non-demented people. This may be because their ability to retain an internal picture of their surroundings was low. Hodge (1984) comments that this result may also reflect a social dimension. Being alone in a darkened room or effectively isolated from other people by the darkness removes an important environmental prop.

There have been a number of experimental schemes which aim to provide specific aids to enhance residents' orientation. Hunt and Roll (1987) proposed a method of familiarising people with a building before they entered an institution with the aim of mitigating the relocation effect mentioned earlier. However, such an approach is unlikely to be very useful with demented people, who are dependent on immediate environmental cues for their orientation.

The Reality Orientation (RO) approach (Holden and Woods, 1982) to the management of people with senile dementia emphasises the use of environmental aids. They suggest the use of large clear accurate clocks, calendars, signs and pictures. People need to be taught where these are and encouraged to use them. Bright colour coding of doors and bedroom furnishings is also suggested to aid memory. However, Snyder (1978) suggests that such cues may be of minimal assistance to habitual wanderers, and Hanley (1981) showed that the introduction of signposts did not in itself effect the ability of patients to find their way around a ward. However they did seem to help when incorporated as part of a ward orientation programme.

The physical ambience of the homes, reflected by the level of light and noise (Feier and Leight, 1981) is likely to be an important influence on the demented residents ability to orientate themselves in the home. The usefulness of specific aids to orientation will depend both on the perceptions of the residents and the role of the staff.

3.5.3 Territory and Privacy

Another important aspect of the physical environment is "defensible space" or territory (Newman, 1972). In "normal" life in the community this takes the form of a house or flat and, depending on the design, some of the surrounding area. This confers status, it is a symbolic token of having a "stake in the system" (Newman, 1972) Personal space becomes territory if the person has control over that space (Keen, 1989)

The physical environment can provide or restrict the opportunity for privacy. Keen (1989) distinguishes three dimensions of physical privacy: visual, acoustic and olfactory. Although privacy and territory are very closely linked aspects of personal space, not all territory will be private on all three of Keen's dimensions. For example, the chair where a resident always sits in a lounge will be a place that they can be seen, heard and smelt! That chair, however, may form an important part of the resident's territory. Similarly, a room which residents may use to receive visitors may afford privacy while not forming part of a resident's territory. In the following discussion "personal space" is defined as space that is potentially both private and territorial.

Willcocks et al (1987) follow others (Rapoport, 1982; Lawrence, 1982) in dividing the physical environment of homes for elderly people into public and private space. In their study public space included lounges, dining rooms and circulation spaces. Private spaces consisted of bedrooms, bathrooms and WCs. The importance of personal space can be seen by the extent of its use. Stephens and Willems (1979) found that residents in two homes spent an average of *two thirds of their time in*

their own rooms. The need for adequate personal space in the design of homes led Willcocks et al (1987) to recommend that future homes provide residential flatlets rather than the small single and shared bedrooms currently provided. Moos et al (1987) found that higher levels of personal space were associated with higher "cohesion" in the social climate.

Kellaher (1986) suggests that in residential care physical disability can mean that control over personal space is restricted to cognitive control. The question arises whether the need for, or ability to establish, private space is of importance to people who have senile dementia. Lipman and Harris (1980) found that shared accommodation was disproportionately allocated to confused residents. Anecdotal reports suggest that many demented residents are happier when sharing a bedroom. However, the higher incidence of sharing bedrooms by residents with senile dementia may reflect the relatively low status of "confused" residents in non-specialist homes rather than differing needs. This latter theory is supported by the finding that confused residents suffer from being rejected by other residents, even to the point of being pushed out of favoured chairs (Lipman, 1968).

"Personalisation" of rooms, by bringing in furniture and other personal possessions, can be seen as a method of establishing a sense of territory. Although the general policy of allowing residents to bring personal possessions and furniture into homes is widespread, residents tend to bring in very few things (Norman, 1987). These are important in preserving a sense of identity, and also affect the way people are perceived by other residents and staff. Millard and Smith (1981) showed that elderly people surrounded by personal belongings were perceived in a less negative way than the same people in bare surroundings.

Nelson and Paluk (1980) tested the hypothesis that territorial needs were more important in the more severely demented, who they represented as "regressed", residents. Two groups of mildly and moderately confused elderly people were selected who all shared rooms. The effect of marking territorial boundaries by

means of yellow tape was to produce a significant improvement in "self-satisfaction" and "clinical maladjustment" in the mild group and "mental state" in the moderate group. In a control group in which yellow tape was randomly allocated there were no such changes.

Both concepts of privacy and territory are important in the care of demented elderly people. While interlinked they represent different needs in the individual: privacy reflects the need to be separate from the community in which the elderly person lives, and territory the need to control personal space. The physical environment may facilitate or discourage the establishment of privacy or territory.

3.6 Conclusion

There is a wealth of research material and theories relating both to normal aging and the environment of institutions. Little appears to have been done to relate the particular difficulties of people with senile dementia to the environment of institutions as a whole rather than to individual treatment programmes. The environmental effects may be fundamentally important influences on the outcome of such programmes (Woods and Britton, 1985). The social ecology models of Lawton and Moos provide a useful approach to examining the environment of residential facilities for elderly people and the residents who have senile dementia. Linking this and the policy questions that need to be addressed to formulate the research questions in detail is the subject of the next chapter.

CHAPTER 4

THE RESEARCH QUESTIONS

Introduction

The evidence in the preceding chapters suggests that there will be an increasing need for services for demented elderly people. The role of residential care is likely to be central for such a highly dependent client group, yet little is known about the features of residential care that will best meet the needs of confused elderly people. There is an absence both of research on which informed decisions might be based, and a clear policy dealing with, the effect of the environment of residential care as a whole on people with senile dementia.

The Wagner Review (1988) proposed that a primary requirement of all residential care was that it should be a positive experience and that it should ensure a better quality of life than the resident could enjoy in any other setting. In the Review's recommended self-assessment exercise for all homes, the quality of life of residents was to be given equal weighting with standards of accommodation and qualifications and training of staff. This raises the questions:

- How can the quality of life of demented elderly residents be measured?
- What affects the quality of life of demented elderly residents?

These are wide-ranging questions and no one research exercise can hope to answer either in full. However, it is possible to draw on existing work and on models of behaviour to formulate specific hypotheses to use as a basis for research. In this chapter the attempt is made to define and develop a coherent, testable model of the relationship between the resident and the residential care environment and specify the questions within each domain.

4.1 The "Testable" Model

In an ideal world the ultimate output, quality of life or welfare of the resident, would be measured and related to the presence or absence of specific individual

needs, and the degree to which the environment met or conflicted with these needs. Both the relationship between the environmental "fit" and welfare, and the relationship between specific environmental influences and the incidence of "fit" would be identified. From such a model it should be possible to establish that, for example, residents with certain characteristics (eg male and depressed) tend to have a high need for order and will thrive in a home with clearly defined rules and regulations. However, there are a number of difficulties in measurement and methodology that preclude an empirical investigation of such a model in the study of the environment and demented elderly people.

One major difficulty is the method of assessment of the quality of life of demented elderly people. Direct reporting of emotional state or morale is likely to be unreliable, if it is possible to achieve at all. People with dementia are dependent on immediate environmental cues. Measures of welfare determined by interview are more likely to reflect the emotional response of the elderly person to the interview than his or her underlying welfare. Moreover, reliably identifying specific environment-related needs and preferences among alert residents is problematic. Those suffering from senile dementia are even less likely to be able to respond to such abstractions.

In the previous chapter the social ecology model, developed by Lawton (1979) and Moos (1976) among others, was found to be most appropriate in assessing work to date on the relationship between people with senile dementia and the residential care environment. In this approach the relationship is represented as two way and non-deterministic. While quality of life is not addressed directly, the "ideal" environmental press is represented as that which results in positive affect and adaptive behaviour. This will depend both on the competence of the individual and on the personal, supra-personal, social and physical environment. As all of these are, to a greater or lesser degree, measurable, this is a useful starting point for the development of a model relating quality of life of demented residents to the residential care environment.

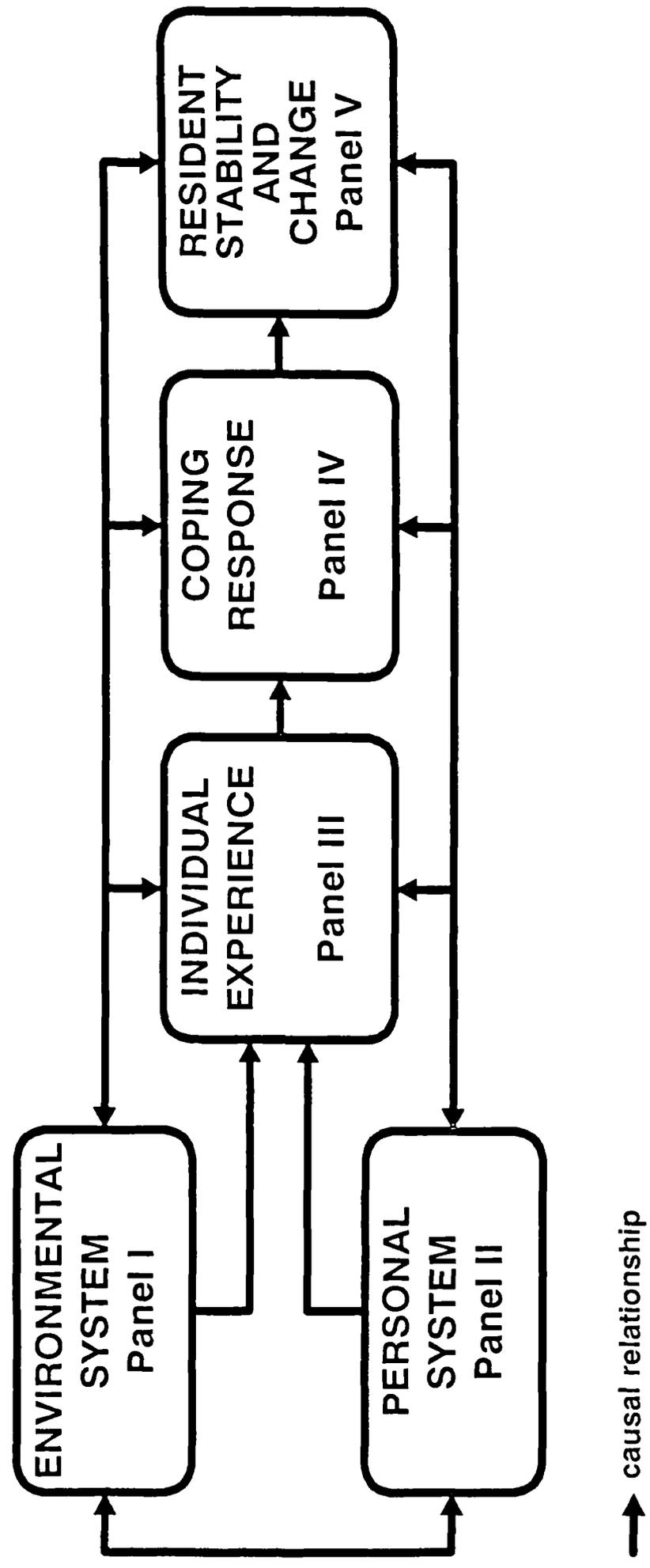
The model that has been used in this study is illustrated by Diagram 4.1, which is an adaptation of diagram 2.2 in chapter 2. The model has been adjusted to permit the inclusion of a set of testable hypotheses for demented elderly people. In this model welfare is assumed to underlie non-medical based changes in competence and behaviour.

The principal adaptation that has been made in the social ecology model for the purposes of this study is that "cognitive appraisal" in panel III in diagram 2.2 has been replaced by "individual experience". While it is not possible to measure what the experience means to the individual, it is possible to measure what happens to them. The "environmental system" in panel I is thus taken to represent the overall home level environmental influences and the "individual experience", the environmental influences specific to the resident. The "individual experience" is dependent both on the overall environmental influences and on the personal system or competences of the individual.

This effectively removes the "personal environment" from the environmental system in the social ecology model. This is now incorporated in the "individual experience" of the environment. Thus personal relationships, including visitors, are represented as the individuals' direct experience of the social environment.

The "coping response" is distinct from "resident stability and change" in that it represents the individuals' attempt to adapt either themselves, or the environment as the result of a specific environmental influence. Thus residents finding their way to where they wish to go will be "coping" with their "individual experience" of the physical environment. This individual experience will depend both on the overall design of that environment and on the competence of the individual. Difficulties experienced by residents in finding their way around may result in adaptive behaviour, such as limiting the use of the home to strictly functional areas, or maladaptive behaviour, such as apathy.

Diagram 4.1
Model of environmental effect



This model provides a useful framework for assessing the questions that should be addressed and the assumptions required in assessing the impact of each "type" of environment on demented elderly people. Before specifying these, however, it is important to be clear what is required of the measures of outcome and personal competence

4.2 Dimensions of Outcome and Effect

The directions of influence in the model are shown as circular and interactive. For any estimation to be made of the model and assessment of the hypotheses, however, there need to be assumptions regarding cause and effect. The model allows for change in the residents' behaviour to affect both their personal and their environmental system. In assessing change over a short period, however, the assumption will be that the environmental system, the individual experience of the environment and, the coping response, will, given the individual's personal system, effect change in the resident. In assessing the effect of the environment on an individual therefore, outcome measures should reflect stability or change in the individual over time.

The 'personal system' in panel II of diagram 4.1 will not, in the assessment of demented elderly people, cover such aspects as self-concept and personality. In order to make allowance for these, a number of measures of "outcome" should be included in the model. Each measure of outcome should represent an adaptive or maladaptive response. Evidence of maladaptive behaviour can be taken to indicate poor "fit" with the environment, which can be assumed to be related to a lower quality of life. The type of maladaptive response would reflect both the individual and the environment but enable some inference to be made. For example, if a restrictive regime were associated with higher levels of apathy, it would be possible to infer that demented elderly people who tended to become apathetic would not respond well to a home with this type of regime.

Types of maladaptive behaviour that are associated with dementia include apathy, social disturbance, incontinence and wandering (Gray and Isaacs, 1979). When represented as maladaptive responses to the environment, both wandering and incontinence are particular examples of socially disturbed behaviour. Apathy and socially disturbed behaviour, however, do provide likely alternative reactions to difficult or understimulating situations. While some people might withdraw, others may act in an inappropriate manner or become visibly distressed.

In addition to this it is possible that some environmental influences actively confuse residents. This may not reveal itself in disturbed behaviour but in lower levels of orientation. The many and varied cognitive difficulties that may beset a person with dementia have been described in previous chapters. "Orientation" is a general term that can refer to an individual's understanding of where they are in time or space. It can be represented as the interface between a person's cognitive capabilities or competence and the environmental demands or press. Too demanding an environment for the individual's competence may lead to confusion or disorientation. Similarly an understimulating environment may lead to deterioration in orientation. Orientation is, therefore, an appropriate basis for a measure of outcome in the model.

One further outcome relates to the aims and expectations of staff. What do members of staff in residential establishment work towards when caring for elderly demented people? The aims of policy makers of "welfare" or "quality of life" may be meaningless abstractions for staff working on a day to day basis with residents. When care staff are working with people with senile dementia, what do they respond to, or work towards? Can a measure or measures be devised that reflect these aims?

The decision was made, therefore, to incorporate in the model indicators of outcome which reflect change in behaviour and orientation over time. The indicators of behaviour were selected to reflect the tendency to withdraw or show disturbance.

An attempt was also made to devise a measure that reflected the aims of care staff.

4.3 Personal System

In determining the personal system that is testable in this type and scale of study (see chapter 5) some potentially important influences have been excluded. For example both attitudes and beliefs are hard to establish but may play a role in a demented resident's behaviour. Snyder et al (1978) found that previous life patterns were an important influence on the tendency to wander. However, Moos (1975) suggested that behaviour outside an institution had little relationship with life inside. The effects of previous life experiences may, therefore, have a limited impact on the demented residents' response to the residential care environment.

In chapter 2 difficulties in adjusting to life changes and stress have been identified as possible influences on the behaviour of demented people. In this study the major life change adjustment associated with residential care, the relocation effect, will be excluded by including only residents who have been in the home for at least six months. The majority of elderly people will have got over any problems of adjustment to residential care after this length of time (Rodstein et al, 1976). While evidence of important personal events during the period of the study will be established, stress is primarily represented as the result of poor "environmental fit".

The following "personal system" influences are all hypothesised to affect both outcomes directly and the way in which the environment will affect the demented elderly resident. These need to be "allowed" for before the main focus of the study, the effect of the environment, is examined. While these "personal system" influences, which may or may not affect outcomes, should all be investigated, it is not imperative that they be included in the model. Restrictions on the study design, however, necessitate the inclusion of two principal effects in the estimation process: depression and length of stay in the home.

4.3.1 Depression

Depression is of importance because, as was discussed in chapter 2, the diagnosis and course of dementia can be fundamentally affected by the incidence of depression (Holden and Woods, 1982; Rabins et al, 1984). It was not possible in this study to draw upon a full diagnosis of the condition or assessment of the degree to which behaviour and orientation difficulties of residents were due to depression rather than dementia. When estimating the model therefore, allowance must be made for the effects of depression in some other way. A variable that indicates the level of depression at the start of the study period should, therefore, be included in the estimation process, to allow for variations in outcome measures that are due to depression.

4.3.2 Length of Stay

The length of time the resident has been in a home is fundamental to the model because this reflects the length of time the resident has been exposed to that environment. Ideally, outcome measures should monitor all residents from before the point of entry into residential care and follow them through the relocation effect and through to, possibly, a year after entering residential care. Each resident would then have had an equal "dose" of the treatment - in this case the residential care environment

Any such design would require huge resources to assess properly the large number of homes that would need to be involved. Neither the time nor the resources necessary were available. It was therefore decided to select a sample of residents, all of whom were settled in the home, that is resident for six months, and to allow for the different level of exposure to the environment. This was to be achieved by incorporating a measure of length of stay into the model as a control variable.

4.3.3 Competence

A variety of "competences" need to be taken into account. Physical ability to perform self-care tasks and move from place to place within the home could affect

both the experience, and the subsequent effect, of the environment. Similarly, mental ability and the ability to communicate are likely to affect the way a resident interprets the environment.

Sensory impairments, such as deafness, also need to be taken into consideration. A resident who is blind, or who has a very serious sight impairment, will have a very different experience of the environment to other residents. Many of the methods used to communicate with, and assess the abilities of, people with dementia are dependent upon the person being able to see. It was decided to exclude those people with serious sight impairments from the study, therefore.

4.3.4 Personal Characteristics

In chapter 2 the personal characteristics most likely to influence responses or changes in behaviour over time were identified as a resident's age and sex. These characteristics are also likely to affect the attitude of staff and relatives to the resident. There is a tendency for men to be admitted to residential care at a younger age and a lower level of physical disability than women (Darton, 1986d). Whether this is due to a genuine lack of ability among older men to look after themselves or to others' perceptions of their abilities is debatable.

4.4 Supra-personal environment

In this study, the supra-personal environment refers to the type of home, the resident population of the home and the staff.

4.4.1 Type of Home

This investigation is restricted to local authority care. Although a growing proportion of residential facilities are in the private sector, at the time of the study the statutory sector dominated the provision of residential homes which cater for demented elderly people (Darton and Wright, 1989). However, homes from several authorities were included to reflect a variety of management philosophies in the running of the homes.

In residential care of demented elderly people the principal "type" of home which is of interest is the specialist home. The question to be addressed is whether there is any evidence that demented elderly people are better cared for in homes which specialise in caring for elderly mentally infirm people, or in non-specialist homes. The argument for specialist homes is that they tend to have higher staffing levels and better links with specialist medical resources (Norman, 1987). Those in favour of using non-specialist homes argue for the principles of normalisation: that normal expectations of behaviour coupled with examples of normal behaviour help orientate demented elderly people and reinforce normal behaviour in them (Evans et al, 1981).

It was anticipated that much of the variation between homes that was caused by differences in local authority policies and between specialist and non-specialist facilities would largely be captured by variations in specific environmental influences, such as the proportion of confused residents in the home. However, it is possible that some other element, such as higher resource levels generally afforded to specialist facilities, may have an effect on residents that is independent of other individually measured aspects of the environment. It was seen as particularly important, given the controversy over specialist provision, that there should be a substantial proportion of specialist facilities included in the sample of homes.

4.4.2 Other Residents

Evans et al (1981) suggested that in non-specialist accommodation, the proportion of elderly people who are "confused" should not exceed one third. When there is a higher proportion than this, it affects the type of regime and care received by all residents. The percentage of "confused" residents were, therefore, included in the investigation.

The stability or otherwise of the resident population may also prove an influence on demented residents. Resident turnover, and the proportion of residents who are short-stay would reflect this. This would also give an indication of the impact of

respite care policies upon the homes and the residents in them. Is there any evidence for the "disruptive" effect of short term care suggested by Home Life (1984)? Does the provision of day care for elderly people outside the home contribute to this? The studies discussed in chapter 3 found that permanent, alert, residents rejected day care clients and short-stay residents. The questions arise, therefore, whether this has any effect on the social climate of the home, on the demented residents, or on both.

The relationship between residential care facilities and the communities they serve was identified as a policy issue in chapter 1. One of the primary ways in which policies of involving the homes more in the community will affect residents of the homes is the increasing use of homes as resource centres. The use of homes to provide respite and day care may affect residents directly, or indirectly if the social climate is affected. Identifying such effects may have important consequences for what community services, if any, it is appropriate to provide in long term residential care facilities.

4.4.3 Staff Characteristics

The constant cry in homes for elderly people is for more staff, particularly care staff. But does an increased number of care staff hours per resident result in measurable effects among the residents? Darton and Knapp (1984) found that higher costs were not associated with indicators of higher quality of care. Moreover, the actual number of staff in post may not affect true staffing levels if there is a high level of sickness. Indicators are therefore required of both care staff to resident ratios and average days of sickness among care staff.

Another important influence on residents with memory difficulties may be the stability of the staff. Evidence is scarce, although one study in the USA (Halbur and Fears, 1986) relates high staff turnover to improved outcomes for residents. Does this apply in UK homes and for residents who suffer from dementia?

The ways in which staff respond to, and care for, residents are subject to a number of influences. One major influence on attitudes to care is the level and type of training of staff. The training background of care staff in homes for elderly people usually consists of nursing or social work qualifications or in-service training (Davies and Knapp, 1981). Wagner (1988) recommended increased emphasis in social work training for residential care staff. Is this the most appropriate type of training for staff working with demented elderly people? Is there any evidence generally of improved functioning of residents being associated with more qualified staff?

Staff of the home constitute one of the most expensive and influential aspects of residential care environment. Staffing issues can be directly addressed and influenced by policy. It is all the more important, therefore, that any policy decisions are taken on properly informed basis, following research. The foci of interest are actual staffing levels, turnover and training of staff. How these affect outcomes for residents is, therefore, of central interest.

4.5 The Social Environment

Diagram 4.1 demonstrates that in the model the individual experience of the environment is dependent both on the environmental system and upon the personal system, or competences. This has implications both for hypothesis formation and for measurement of the social environment.

For example, the way that rules and normal practice are interpreted may differ for demented residents considerably from the norm in the home. While the majority of residents may be allowed to choose what to wear, or to go outside freely, the abilities of a demented resident may be such, or interpreted as such, that such freedoms are impossible. Thus hypotheses relating to care practices ideally should specify the expected effects of the home regime and of the individual experience of that regime. This means information will be required about both usual practices in the homes and the way that these apply to individual residents.

When measuring the dimensions of the social environment, the emphasis, therefore, is that the measures should as closely relate to the individual experience as possible. This does not deny that the overall social environmental influences of the home will be of importance in determining outcomes, but in addition, the way this directly interacts with the resident should also be measured.

In establishing the different aspects of the social environment that need to be investigated, use has been made of the dimensions adopted in Moos and Lemke's (1984) sheltered care environment scale (see table 8.1 in chapter 8). Ideally, these should reflect the atmosphere affecting the resident as closely as possible. In a home designed for group living, does the social atmosphere vary from group to group? If so, the social atmosphere in an individual residents group may be of more importance than the overall home atmosphere.

In non-specialist homes designed for communal living it has been found that 'confused' residents sometimes form an identifiable sub-population (Harris, 1977). This group tends to eat separately and to sit in one or two lounges which "alert" residents do not use. Where these sub-populations exist, do they form such separate groups that there is an identifiably different social climate among them? If so the social climate measures used in assessing the effect of the social environment should reflect this

In describing the social climate Moos and Lemke (1984) identify three types of dimension: relationships, personal growth, and system maintenance and change. For each of these it is necessary to identify:

- The types of home-level influence that might be of specific importance to demented elderly people.
- The way in which the individual is likely to experience these influences
- The expected coping response to these influences.

4.5.1 Relationships

The degree to which residents and staff support one another, and whether the social atmosphere fosters or discourages the formation of relationships may be an important influence on a resident's well being. The measures of "conflict" and "cohesion" used in the SCES reflect the supportiveness and expressed conflict of the home or group level environment. It would be anticipated that a more cohesive and lower conflict in the social climate would have a beneficial influence on residents.

One individual experience of the relationship dimension is how well-integrated the resident is into the life of the home generally. This will depend partly on the type of home the resident is in. In the previous chapter the tendency for demented residents to form a separate population in non-specialist homes (Harris, 1977) and to be "loners" (Retsinas and Garrity, 1985) was identified. While it is not possible to distinguish whether or not this is by choice, it may be possible to identify an association between social integration of individual residents and changes in behaviour or orientation.

The positive side of a sense of being separate from the community in which a resident lives, is the right to privacy. In chapter 3 the relationship between privacy and territory was discussed as aspects of the physical environment. Many studies (Kahana, 1982; Booth, 1985; Fyvie and Gledhill, 1989) have defined the provision or allowance of privacy as an aspect of the social environment. The need for privacy is defined in these as a need to be separate from others. Pastalan (1978) described this type of privacy as reserve, associated with the need that people have to withhold certain aspects of themselves. While it is acknowledged that there are both physical and social aspects to both privacy and territory, in this study privacy is treated as primarily an aspect of the social environment and territory as an aspect of the physical environment.

While members of staff may respect the privacy of residents who are alert they may be less careful of the privacy of a demented resident because of fears of "what they are up to". Thus the normal practices in a home may be disregarded in what is seen as the resident's own interest. It is important, therefore, to identify as far as possible the degree to which the individual resident is able to experience privacy.

One of the most important influences on elderly people generally is the existence of a confidante or close relationship (Berkman and Syme, 1979). Whether this result holds for people with senile dementia, who tend to have difficulty in forming and maintaining relationships (Grays and Isaacs, 1979), is less clear.

A "coping response" to the social environment is the degree to which friendships and relationships are formed and maintained by an individual. This is not easily distinguished from the "individual experience" of having a confidante or friend. For demented elderly people even this is not easily established. The assessment of this aspect of individual environmental influence will need to be based on information about observed friendships and the regularity with which the resident receives visitors

Thus the home level "relationship" influences on a resident are hypothesised to be the level of cohesion and conflict in the social climate, the integration of confused residents into the life of the home and the level of privacy afforded generally.

These may affect the residents' behaviour both directly and through the individual experiences of social integration, ability to be private and the existence of friendships with staff and other residents. A favourable environment for demented residents may be provided by either a general supportive nature of the relationships within an institution or by individual friendships. However, Kahana (1982) found that favourable outcomes for alert residents were associated with higher levels of privacy and it is possible that in a communal setting the ability to be separate or "reserved" is more important than the existence of positive relationships.

4.5.2 Personal Growth

Personal growth is frequently not an expectation of elderly people in residential care. This is particularly the case in the care of demented elderly people. However, programmes such as reality orientation have shown there is a capacity for improved functioning in specific areas (Holden and Woods, 1982).

In the Sheltered Care Environment Scale (SCES), the personal growth dimension included how self-sufficient and independent residents were encouraged to be, and the extent to which self expression was reinforced. The independence dimension reflects the degree to which the institution or group is over-protective or actively encouraging increased functioning. If the self-exploration scale is found to be of importance, it may reflect the degree to which the staff or other residents seek out residents who tend to become apathetic.

The level of organised activities in the home may have a positive, stimulating, effect (Kushlick and Blunden, 1974) on residents or a negative, confusing, effect if they are prevented from withdrawing (Cummings et al, 1960). This will not simply depend on the level of activities or "stimulation" in the environment, it will also depend upon the level of participation of the residents themselves. Thus both the overall level of activities and the "individual experience" of these, or rate of participation in activities needs to be identified.

Another important aspect of personal growth is the level of freedom residents are allowed. A major concern, however, in the care of demented people is safety. Physical and mental dependency upon others may often be the principal reason for admission to residential care (Neill et al, 1988). In fact, too much monitoring may inhibit personal growth by restricting freedom and movement (Clough, 1981). The conflict between a home that has a policy of encouraging personal freedom among residents and concern over the safety of a resident with cognitive difficulties may be resolved either by restricting individual freedom or by taking risks. Thus a

confused resident's "individual experience" of a home may differ considerably from another resident's in the same home. It is important, therefore, to determine how restrictions on freedom and movement apply to individual residents.

One other aspect of the caring regime that can be considered under the heading of personal growth is the level of knowledge about residents' backgrounds. The previous occupations and habits of demented people may affect the way they respond to stress (Snyder et al, 1978). The greater the understanding which care staff have of the individual and his or her history, the more able they are to understand and respond effectively (Feil, 1985). Such knowledge will depend both on the home's policy on obtaining background information on residents and on the information and links with the past that exist for the individual. This aspect of personal growth, therefore, also needs to be assessed at the level of individual experience

A "coping response" that reflects the personal growth dimension is the level of engagement of the resident. The level of engagement of demented people has often been taken as an appropriate measure of outcome in studies concerned with the effect of organised, or encouragement of, activities (Felce and Jenkins, 1979; McCormack and Whitehead, 1981). While not telling the whole story, this does indeed reflect change in the way the patients or residents interact or cope with their environment. However, to measure this effectively requires a detailed observational study, which was not possible given the available resources. The assumption has therefore to be that a higher "rate" of reported activity will reflect both the individual experience of the environment and the level of engagement.

The aspects of the environment that are assumed to affect personal growth at the overall home level of the social environment are: the degree to which independence and self-exploration are fostered by the environment, the general level of stimulation, the level of freedom, and the policy of maintaining links with the residents' backgrounds. *The individual experience of the residents will be the level*

of activity that they engage in, the level of freedom they enjoy and the degree to which their links with the past have been maintained. It would be expected that the more the environment fosters personal growth the higher the levels of orientation and the lower the levels of apathy. Excess "press", however, might result in maladaptive, socially disturbed behaviour, or the residents may retreat into themselves and become more apathetic.

4.5.3 System Maintenance and Change

The dimension of system management and change reflects the importance and locus of organisation and order in the establishment. The type of question the dimension covers are: does the establishment dominate the individual residents? Do they have an effective say in how they conduct their own lives? These aspects of the environment are reflected in the sheltered care environment scale as "organisation" and "resident influence" (Moos and Lemke, 1984).

There is a tendency, perhaps because of the concept of the "total" institution (Goffman, 1961), to regard a high level of organisation as a negative feature of homes. This need not necessarily be the case in the care of demented elderly people (Ohta and Ohta, 1988). Where residents are restricted in their ability to order their own environment, it may be that a high degree of organisational clarity is a positive influence. For example, the use and implementation of care plans and reviews might reflect an organised, coherent, "planned" approach to care. To be effective, plans and reviews need to be specific to the individual's needs, however, so it is important to identify the "individual experience" of these as well as the use of care plans in the home as a whole.

A very rigid approach to organisation may result in a home less able to tolerate "challenging" behaviour and deal with it effectively, or in the encouragement of institutionalised behaviour (Tobin and Lieberman, 1976). A rigid task-centred approach to organisation could be reflected in routinisation and regimentation of care practices (Evans et al, 1981). Booth (1985) found that the more dependent

residents were usually more tightly regimented than other residents because more caring tasks were associated with them. Thus the degree to which the home as a whole operates in this way, and the way this applies to individual residents needs to be identified.

It is also desirable to establish to what extent residents have control over their lives. While it is possible to envisage a situation in which too much choice might serve to confuse a demented elderly person, it is far more likely that the encouragement of a sense of control will serve to enhance orientation. Certainly most studies of outcome measures have found a high association between locus of control and quality of life for elderly people in general (Palmore and Luikart, 1972; Kuypers, 1972; Challis, 1981).

The way a home is organised is likely to have a profound impact upon the residents who are being cared for. At the overall home level a high need for order may result in regimentation of care practices; alternatively it may result in a clearly understood social environment with well-planned individualised care practices. Similarly, the level of resident influence in the home as a whole may or may not translate into effective control for the individual resident with senile dementia. Where the balance of organisation, resident influence and control is heavily in favour of the institution a hypothesised "coping response" might be a form of institutionalised behaviour, such as reduction in performance of self care tasks. It would be anticipated, if the results for alert elderly people hold true, that in general the more control the resident can exert the more favourable the outcomes in terms of behaviour and orientation.

4.5.4 Types of Regime

The discussion above has used the framework of the Sheltered Care Environment Scale, based upon the social ecology model, which has been adapted for use in this study. Aspects of the regimes of home, such as privacy and regimentation have been represented as *specific dimensions of the social environment*. In studies of the social

environment of UK homes, Booth (1985) used policy and practice based indicators to identify three main types of regime: positive, restrictive and mixed. These categories of home brought together the dimensions of the social and care environment. The classification of homes on this basis provides a useful descriptive device and thereby might bring together important influences of the environment on residents. Such a classification could provide a useful basis for monitoring establishments, an issue of increasing importance for local authorities (see chapter 1). One aim of the study, therefore, is to see if the homes can be classified into similar categories, and whether they are associated with particular outcomes for residents.

4.6 Psychotropic Drugs

One aspect of the environment that forms part of both the personal system, and of the care practice and treatment in the homes is the extent of the use of psychotropic drugs. These are sometimes used to control abnormal behaviours and inappropriate usage has been shown in some residential homes (Wade et al, 1986). Ideally the expected effect of each drug should be incorporated in the model. A simpler measure of the number of psychotropic drugs taken can, however, provide an indicator of use, and likelihood of adverse reactions.

4.7 Physical Environment

The design of homes for elderly people was identified in chapter 1 as an important policy issue. Very little evidence appears to exist about the relationship between the physical environment and people with senile dementia. A major difficulty in describing the physical environment is that there is no systematic means of representing information in a way that allows comparisons across different buildings (Keen, 1989).

However, the physical environment is likely to be a particularly important influence in the residential care of demented elderly people. Orientation difficulties resulting from the condition mean that such residents will be particularly dependent upon external cues, and these cues will not have the long standing familiarity of those in

their own home. As with the social environment, it is necessary to identify dimensions of the physical environment which are hypothesised to have an effect on the welfare of demented elderly people. Three main areas suggested by the literature are: the ambience, availability of personal territory and complexity.

4.7.1 Ambience

The ambience in this context incorporates the level of lighting and noise in the home. A quiet atmosphere and bright surroundings will mean it is easier for a resident with possibly reduced sensory abilities to see and understand what is going on (Feier and Leight, 1981). A coping response to excessive noise or inadequate light may be to change the environment, by going to a quieter place or turning on a light. Where reduced competence or environmental restriction does not allow such coping responses the result may be social disturbance, withdrawal, or a reduced level of orientation.

4.7.2 Personal Territory

One characteristic of some homes is that all, or nearly all, residents always sit in their "own chair" (Davies and Knapp, 1981). In these "own chair" homes every resident has a place where they sit which is rarely varied, and strongly defended if threatened. One explanation is that this is some sort of territorial behaviour which dominates certain homes. This is represented in this study, therefore, as a home level influence on residents' territory. Most measures of territory, however, by the very nature of the issue, will be at the level of the individual experience.

A single room provides a clearly defined area of personal territory. For those residents who share a bedroom it may be possible to assess how clearly defined the individual area or territory is. Is the size of this area of territory important? The level to which the bedroom or bedroom area is personalised by the resident's possessions may provide an indicator of how much this is actually experienced as the resident's own space. A change of bedroom, however, may have a destructive influence by reducing the resident's sense of continuity of personal territory.

The importance of personal territory for elderly people in residential care was emphasised by Willcocks et al (1987). Insufficient sense of this may lead to defensive behaviour, or simply a sense of being a constant visitor in his or her own home. Perhaps this could result in undue anxiety or stress. Without a very detailed observational study, it is unlikely that it would be possible separately to assess the coping response to a lack of, or insufficient sense of, personal territory.

Much policy and research emphasis has been laid upon the size of bedrooms (Ministry of Health, 1973) and the provision of private space (Willcocks et al, 1987) in the design of homes for elderly people. However, there appears to be no direct evidence on the importance of these aspects of the physical environment on residents who have senile dementia.

4.7.3 Complexity

A major effect on demented residents' welfare is likely to be whether they can find their way around their own home. Can they find the WC when they need to? Can they move freely between the bedroom and the sitting area? If a demented person can find his or her way around a residential home, this can be regarded as successful coping behaviour. Primarily, the resident will be coping with the complexity of the home design, as he or she experiences it.

Residents' experience of the complexity of the home may depend primarily upon overall design. It is likely that the effect will be influenced by the design of the parts of the home that the residents actually use. In this respect one hypothesis would be that the layout of group living home designs, although more complex overall, would allow residents to restrict their use of the home to manageable limits. Thus it would be expected that residents would find it easier to find their way around group homes.

Another hypothesised effect of the design of homes is the perceived "normality" of the living arrangements. Normalisation theory (Wolfensberger, 1972) proposes that much of the behaviour of people in institutional settings is in response to a set of non-normal expectations which are reinforced by the architectural settings. Purpose built institutions often do not fit in with the surrounding neighbourhood in design or scale. Internally these institutions are unlike domestic housing arrangements where most residents would previously have lived. Thus expectations of where things are likely to be (the bedrooms upstairs for example) are constantly thwarted, leading to further confusion in a demented resident trying to find his or her way around a strange building.

There has been no attempt in the present study to incorporate a measure of "normality" into the assessment of the physical environment. However, it is of interest to use this perspective in the interpretation of the results of the investigation. Is any evidence of the positive effects of normalisation within the largely non-normal environments provided by local authority residential care?

4.7.4 Distinctiveness and Orientation Aids

While a resident's ability to find his or her way around has been represented as a "coping response" to the design of the home, it is likely that it will also be affected by other environmental influences, such as the level of lighting. It might also be expected that residents would use "landmarks" to help them find his or her way around. Do orientation aids, such as colour coding, help residents find their way around? Does the overall distinctiveness of different parts of the home reduce complexity? It would be expected that many similar corridors would be more difficult to negotiate than a series of different spaces with distinctive aspects.

In the assessment of the physical environment it is important to get as close to the resident's individual experience as possible. This is one area in which it may be possible to assess a "coping response", to estimate how well a resident can find

their way around. In many ways this is the most complete part of the proposed model in terms of a formulated set of research questions:

- What is the relationship between overall design and individual experience?
- Does overall design and individual experience affect the residents "coping" with finding his or her way around?
- Does the residents ability to find his or her way around affect changes in behaviour and/or orientation?

4.8 Conclusion

Any attempt to assess environmental impact, upon demented elderly people in particular, involves compromises and exclusions of potentially important effects. However, the model provides a useful framework for identifying hypotheses and issues in assessment of environmental influences. There are pragmatic reasons for the exclusion from the empirical study of many of the "coping responses", but the use of individual environmental effects and a variety of outcome measures may allow inferences to be drawn about these.

The model proposed has implications for the study design and type of outcome measures required. A number of dimensions of the supra-personal, social and physical environment suggested by the literature have been identified as of potential importance in influencing these outcomes. Before discussing the results of the investigation, it is necessary to describe the study design, and the limitations that this imposes upon the conclusions that can be reached.

CHAPTER 5

METHODOLOGY

Introduction

In the previous chapter a model of the relationship between the residential care environment and demented residents has been proposed. This incorporates a number of hypotheses that are interlinking and complementary. Few, if any, are mutually exclusive. No empirical study of such a broad area of investigation can hope to "prove" or "disprove" a particular model.

The purpose of this chapter is to describe the empirical method and the data gathered, and to set this in the context of what realistically can be achieved by such an investigation. A general description of the study is therefore followed by an assessment of possible threats to valid inference.

5.1 Study Design

15 homes for elderly people were selected from four local authorities: one inner and two outer London boroughs and one shire county. Appendix 1 contains all the instrumentation used in the assessment of these homes and the sample residents. A further two homes, based in the same county but known to be very different, agreed to participate in a pilot study. A description of this study can be found in Appendix 2.

Form A in Appendix 1 was used to survey all residents in each home on a specified date (4/12/84). This form was based upon that used in the PSSRU survey of residential care (Darton, 1981) and requested basic background data and information on disability levels for all residents. The intention was for ten residents suffering from confusional states to be selected on the basis of this information from each home. Two homes dropped out of the study at this stage. In one home the officer-in-charge found the time commitment required too great. In one other, a short-stay unit with a ten bedded specialist unit for mentally infirm elderly people,

only two residents were found to be suitable for inclusion in the study sample and it was decided not to include the home. Detailed descriptions of the 13 homes that remained in the study are in Appendix 3. All the instrumentation referred to in the following discussion can be found in Appendix 1.

5.1.1 Assessment of Homes

In order to assess the overall physical design of the homes the architectural floor plan of each home was obtained and amended where changes from the original design had occurred. A rating scale (form B), based on that developed by Moos and Lemke (1984) was also completed, based on observations by the rater. This included assessments of the lighting and noise levels as well as a staff functioning section. The use of colour coding and other orientation aids was also identified.

A senior member of staff (usually the officer-in-charge) was interviewed (form C) to establish the information relating to the overall home caring regime. This included general policies, such as the use of pre-admission visits and care plans, and practice issues, such as the use of set bedtimes. Information was also gathered about the number and type of activities organised for residents.

Each member of the care staff was asked to complete a form (form D) which gave information about background, qualifications and experience as well as including the questions for the Sheltered Care Environment Scale (SCES). The SCES was used to assess the social climate of the home (Moos and Lemke, 1984). This scale formed a part of the Multiphasic Environmental Assessment Procedure (MEAP) which was developed from large scale studies of sheltered care settings for elderly people in the USA. It has been extensively tested and a body of USA-based normative data is available. The basis on which staff were asked to complete this is discussed in chapter 8.

At the end of a six month period the home was visited again (time 2) and information on major events in the intervening period established, again from a

senior member of staff (form E). This form was also used to ascertain the turnover of staff and residents by examining the records kept by the home over the period.

5.1.2 Establishing the Sample

In order for residents to be included in the sample they had to satisfy the following criteria:

- Be assessed by a senior member of staff as moderately or severely confused.
- Be a permanent resident in the home.
- Have been resident in the home for six months or more.
- Have adequate sight.

Staff assessments of the mental state of residents have been shown to correlate well with medical diagnosis of cognitive defects (Vardon and Blessed, 1986). Thus the first criterion was used simply in order to select the type of resident with which the study was concerned. Residents had to be permanent to ensure as far as possible that they would still be resident, and therefore could be re-assessed, at time 2. To avoid any changes due to the relocation effect (see chapters 3 and 4), only residents who had been in the home for six months were included.

The fourth criterion was introduced because of two issues that became evident during the pilot study (see Appendix 2). Firstly, the combination of dementia and lack of sight was such that the influence of the environment may be fundamentally different to that upon sighted demented residents. There was unlikely to be a large enough sample of this group in the context of the current study to investigate this in detail. Secondly, some of the instrumentation was unsuitable. While deafness resulted in communication difficulties that could be overcome with the help of staff, blindness meant that the reading element of the assessment of mental ability could not be used.

Once all the criteria were satisfied a pool of potential sample residents was identified in each home. If this exceeded the specified maximum of ten residents

then the residents were divided into those categorised as "moderately" or "severely" confused. The resulting sample was randomly chosen from these residents but reflected the balance of categories of confusion. As a result of this procedure 104 residents were selected from the 13 homes.

5.1.3 Sample Resident Assessment

The sample residents were visited at the beginning and the end of a six month period. The six month period was selected as a period that was long enough for change to be observable, and short enough for the loss of observations to be minimized. Table 5.1 shows the distribution of the residents between the homes, the mortality and drop-out rates over this period. Sample residents dropped out of the study because they left the home on a temporary or permanent basis during the study period.

In assessing the sample residents' abilities and behaviour the Clifton Assessment Procedures for the Elderly (CAPE) were used (Pattie and Gilleard, 1979). This has been validated against diagnosis of dementia, concurrently and predictively (Pattie and Gilleard, 1975, 1976, 1978a). The CAPE consists of two sections: the Cognitive Assessment Scale (CAS, form F), which is an interview to assess mental state, and the Behaviour Rating Scale, which is a questionnaire (BRS, form G) assessing the residents' physical ability and behaviour to be completed by a senior member of staff.

There are a large number of scales for assessing the physical, mental and behavioural aspects of elderly people (Kane and Kane, 1981). The requirements of this study were that the assessment should not be too long, should cover all the desired aspects of the elderly person, and establish a suitable basis on which to measure change. The CAPE assessment provided useful sub-scales for the measurement of outcome variables (apathy, social disturbance and orientation) and included two other relevant sub-scales: physical disability and communication difficulties. While the scales are perhaps not as long as desirable, this is

compensated by the ease of application of both the CAS interview and BRS form. This property is not to be minimised as it contributes substantially to the gathering of usable and reliable data.

Table 5.1: Mortality and Drop-out Rates of Sample Residents

Home	Number of Sample Residents				Beds
	Time 1	Died	Other	Time 2	
Pondlea	10	1	*	9	30
Haddock Lodge	9	2	0	7	40
Viking Lodge	10	3	1	6	49
Goldacre	10	1	1	8	32
Airedale House	10	2	0	8	48
The Copse	8	2	0	6	60
Greendale	10	2	0	8	40
Thayler House	5	1	0	4	43
The Laurels	6	2	1	3	40
Chaucer Place	10	0	1	9	40
Westgate	5	1	1	3	40
Victoria House	7	1	0	6	40
Centrelea	4	0	2	2	43
Total	104	18	7	79	545

* One resident refused to be interviewed.

Items were added to the BRS form so that an assessment could be made of the presence of symptoms of depression and anxiety. These were based on those used by Challis and Davies (1986) who modified the work of Hamilton (1960) in their assessments of community care schemes for elderly people. Two further questions

were added relating to the level of agitation displayed by the resident and the amount that they smiled. In the pilot study the officers-in-charge identified these aspects of behaviour as the type of "output" that they used when monitoring the care of demented residents. The measure derived is described in Appendix 8.

In addition, at the beginning of the six month period a senior member of staff was interviewed (form H) to determine how the home's caring regime was applied to this particular resident. This schedule covered: background issues (such as reason for admission), items to assess ability (such as how well the resident could find his or her way around the home), questions about practice (such as the way specific behaviours were dealt with) and other related issues (such as the frequency and types of activity the resident engaged in). The intention was to identify, as closely as possible, how the social and caring regime of the home actually applied to the resident.

The immediate physical environment for each sample resident was also assessed at this point by asking the care staff where the resident went in the home during the course of a typical month. On the basis of this information and the floor plan of the home a " route diagram" was completed and scored (form I, Appendix 1). Route diagrams are described and discussed in detail in chapter 8. An assessment was also made of the bedroom of each sample resident. Again, the intention was to establish the way the physical environment of the home impinged upon the individual residents.

At the end of the six month period a senior member of staff was interviewed to determine if the resident was still in the home, and specific events that had happened to the resident, such as change of bedroom (form J). A form for each resident, which simply asked staff to note major events as they occurred, was left at the home during the six month period of the study. This could then be referred to when staff were being asked about the significant life events that had occurred during the study period.

In assessing the residents, all the interviews were carried out by the same rater and the homes were asked that the same member of staff complete the forms for the resident at time 1 and time 2 as far as possible.

5.1.4 Analysis of Data

The data was analysed using the SIR database management system (Robinson et al, 1980), SPSS-X (SPSS Inc, 1988) and LISREL (Joreskog and Sorbom, 1986) computer packages. The data base was of a hierarchical nature as there was information collected about the homes generally, for groups within the homes, the staff population of the homes, the resident population of the homes and for the sample of residents. SIR is designed to enable the retrieval of data from hierarchical data of this type. SPSS-X was used for most of the subsequent analysis of the data, including simple cross tabulations, cluster and regression analysis. LISREL was used to estimate and examine the full structural equation model (see chapter 11).

In chapter 6 there is a general description of the homes and characteristics of the residents in the context of other studies of residential care and dependency. The sample is described in the context of both this information and CAPE normative data.

The measures used to assess the social environments of the homes are described and developed in chapters 7 and 8. The validity of the proposed regime scales was assessed and it was decided to include individual items rather than devising scales to reflect different aspects of the social environment. The difficulties associated with the devised scales and the reasons for including the individual items are discussed in chapter 7. In chapter 8 cluster analysis was used to establish a link between the types of regime identified by Booth (1985) and the SCES scales.

The method by which the impact of the physical environment should be incorporated in the overall model is discussed in chapter 9. The importance of territory in the

homes is described together with a regression analysis that was used to explain the link between the homes' design and confused residents' ability to find their way around. This latter analysis was first reported in Netten (1989).

A model of the effect of the environment is estimated using regression analysis in chapter 10. The independent variables have, for the most part, been described and assessed in previous chapters. Changes in the level of apathy, socially disturbed behaviour and orientation, measured by the CAPE scales, are used as measures of outcome. Another measure, indicating changes in the level of agitation and smiling over the study period, is also used as a dependent variable. The estimated model developed is further tested using a structural equation approach in chapter 11.

Before examining in more detail the strengths and limitations of the study design it may be helpful briefly to discuss the concepts of causality and validity in the field of social science research.

5.2 Causality

Underlying the whole study is the question of what aspects of the environment cause demented people to thrive or deteriorate. The problem of determining whether, and if so, what type of, a causal relationship exists underlies most empirical work both in the natural and the social sciences. This poses in turn the question what is a causal relationship.

Cook and Campbell (1979) discuss the concept of cause in some detail and usefully draw together a number of theoretical approaches. They assert that causes have a real nature but that this can only be imperfectly grasped. There are three important criteria for inferring cause:

- Covariation between the presumed cause and effect
- The temporal precedence of the cause

- The need to use "controls" to rule out alternative interpretations of cause and effect connections.

Popper (1972) proposed that in advancing the state of knowledge it is necessary to proceed by seeking to falsify propositions rather than to confirm theoretical propositions. Thus the hypotheses that are tested in statistical analysis are "null" hypotheses; that is, that the hypothesised relationships do not exist.

Cook and Campbell discuss a quasi-experimental approach appropriate to the social sciences in which assessments in the "field" occur before and after "treatments", whether these be generated by the researcher or not. While there is a need to repeat such attempts to disprove theories of causation, such designs make replication of specific tests almost impossible.

In the context of the problem under consideration here, even this relatively controlled approach is not possible. The need, at this stage, is for exploratory research. The aim is to see if a model of the effect of the environment can be generated from an empirical investigation of demented people in residential care. If successful this could provide the basis on which to propose quasi-experimental designs to test the resulting hypotheses. It may also provide some indicators for other investigators for unanticipated environmental effects that may be occurring in quasi-experimental studies of specific treatments for demented people.

The need to be aware of the limitations of this type of study is of considerable importance. Thus the design of the study, the measures used and the analysis must be carefully assessed to establish the degree to which valid conclusions can be drawn.

5.3 Validity

The concepts of validity and invalidity refer here to the best available

approximations to the truth or falsity of a proposition. Hence all references to validity should be understood to be prefaced by "approximately" or "tentatively".

Cook and Campbell (1979) distinguish between two types of validity: internal and external. These are defined:

Internal validity refers to the approximate validity with which we infer that a relationship between two variables is causal or that the absence of a relationship implies the absence of cause. External validity refers to the approximate validity with which we infer that the presumed causal relationship can be generalized to and across alternate measures of persons, settings, and times. (p37)

They further subdivide these to include statistical conclusion validity, and construct validity. Statistical conclusion validity is an aspect of internal validity when conclusions about co-variation are made on the basis of statistical evidence. Construct validity is an aspect of external validity when conclusions are drawn about the theoretical implications of relationships. This questions whether generalisations about higher order constructs can be made from the research operation.

5.3.1 Internal Validity

Each of the hypothesised effects of the environment on demented residents, or even the overall hypothesis that there is an effect, can be represented as a putative "treatment". In establishing a relationship between this treatment and the supposed effect there are a number of threats to the validity of inferring a causal relationship. A number of factors which could affect internal validity are considered below.

i) Ambiguity

This refers to the uncertainty of whether A causes B or B causes A. Given the theoretical background to the study of environmental effects, a degree of ambiguity would appear to be inherent in a study of this kind. The way in which this is dealt with in quasi-experimental design is to use temporal precedence. If event A always precedes B then any causal path will lead from A to B. In the context of this study use was made of two time periods and the outcomes measured as change in specific measures. To a large extent environmental influences were assumed to be static and only measured at time 1; the likelihood of changes in the residents between time 1 and 2 having influenced these is very low. If there is an effect of this nature it is likely to be the result of selection.

ii) Selection

The problem of selection arises when the people who have had the "treatment" are in some fundamental way different to those who did not, so observed differences have resulted from the interaction of the treatment and selection process. This is possible in the context of the study, especially in relation to admission policies. The selection of more seriously affected people to specialist homes is part of a specific policy so any effects observed in relation to the effects of specialist provision need to be drawn with some caution. In the design of the study there were 7 non-specialist and 6 specialist homes, so if this proved to be a problem a separate analysis was possible. However, another problem related to this is that of mortality.

iii) Mortality

While the use of differences over time as outcome measures does reduce the difficulties of ambiguity, necessarily in a study of this kind there will be non-survivors, so a specific selection of survivors will occur who may not be representative of the group as a whole. For the purposes of the study death was assumed random but further analysis was used to test this assumption. This problem is discussed further in chapters 10 and 11.

iv) Maturation

Over a time period some changes may have occurred which are simply attributable to time. In the context of this study maturation would take the form of deterioration resulting from the progressive condition of senile dementia. It was for this reason that the change in each measure was used as outcome - thus effects will result in deviations from an average level of change. The six month period was short enough for any very rapid deterioration to be regarded as random.

v) History

One possible source of an invalid inference is if the observed change is the result of some event which takes place between the two observations when the event is not part of the focus of the research interest. It was for this purpose that fairly open-ended questions were asked about the intervening period both at a home and a sample resident level. For example, it was established that the officer-in-charge of one home left during the six month period. This information was used as "back up" in order to refer to in the event of outliers from the main analysis or some unexpected result. By including a relatively large number of homes systematic historical effects were assumed unlikely.

vi) Testing

One threat to the validity of deducing change is the process of testing itself. For example, perhaps people will perform better the second time having had the practice of the first test. The memory deficits associated with senile dementia are such (see chapters 1 and 2) that this can reasonably safely be ruled out, given the length of the period between the first and second assessment.

In the assessment of the environment, however, the process of including the homes in a study of this kind might have affected the homes themselves, or some of the influences the study was intended to measure. Any such effect is likely to be minimal as the process of assessment took place over a relatively short period. The time 1 assessment took place over two or three days and the follow up six months

later was usually a one day visit. Moreover the ratings and assessments were all conducted by the same rater so any such effects would be consistent and thus more likely to affect the external validity, generalising the results to comparable homes, than internal validity.

vii) Instrumentation

If the method of measuring is not applied consistently, the observed differences in a measure may be the result of this inconsistency rather than a change in the underlying variable. This might be a problem in this study of this kind, if different members of staff assessed a resident at time 1 and time 2. All that could be done in this respect was to ensure as far as possible that this was not the case, by requesting that the same staff who completed the forms at time 1 also completed these forms at time 2. The interviews with the sample residents were all conducted by the same rater at the start and end of the study period. Test-retest reliabilities were estimated on a sample of these CAS assessments which indicated that inconsistent application of the instrument did not seem to be a problem in the interview assessments (see chapter 6).

5.3.2 Statistical Conclusion Validity

To a large extent the issues related to the statistical validity of conclusions drawn have been dealt with in the chapters concerned with the statistical analysis of the results. However, it is worth going through the some of the main threats to statistical validity and to specify how these have been approached.

i) Low Statistical Power

A type I error occurs when the null hypothesis is rejected although it is true. Acceptance of the null hypothesis when it is false results in a type II error. Confidence limits refer to the probability of making a type I error: the higher the confidence limits, the lower the chance of incorrectly rejecting the null hypothesis. The probability of both errors can be made smaller by increasing the sample size.

Low statistical power can occur when the sample size is small and/or confidence limits are set at a high level. This increases the chance of making a type II error.

A difficulty in this study is defining how large the sample size should be. The sample size refers to the number of homes as well as the number of sample residents. There is, therefore, the need to record an acceptably high degree of variation in the environmental effects as well as in the outcomes for residents. The decision in the end was pragmatic and limited by the resources available. In limiting the number of residents from each home to a maximum of ten this enabled 13 homes to be investigated in some detail. Given the enormous potential for variations in the environments of homes, however, it has to be acknowledged that the statistical power of the analysis is necessarily low.

In an exploratory study of this type "missing" an environmental effect by wrongly accepting the null hypothesis is necessarily an area of concern. For all the tests, therefore, three probability levels are reported as statistically significant ($p < .1$, $p < .05$ and $p < .01$) and where the test does not prove statistically significant the actual probability levels are reported.

ii) Reliability of Measures

This refers to the amount by which random factors interfere with accurate measurement. One such random factor, the inconsistent application of the instrument, has been discussed above, as it also affects internal validity in general.

There are three main types of reliability which can be tested: inter-rater, test-retest and split-half reliability. A large proportion of the assessments in the study were made by the same researcher: the rating scale, assessments of the residents' physical environment, interviews with staff and residents. The greatest potential source of inter-rater unreliability in the present study was in the CAPE behaviour rating scale which was completed by senior members of staff in each home. However, it has been shown (Vardon and Blessed, 1986) that staff in residential

homes do provide reliable assessments of this sort, and it was considered that the actual risk of unreliability was within acceptable limits.

For pragmatic reasons, the only measure that could be tested for test-retest reliability was the CAS interview in CAPE. To assess test-retest reliability the residents in one of the homes at time 1 and in another at time 2 were re-assessed after a week. The results of this are described in chapter 6.

Split-half reliability refers to a test in which the scale is split in half and the correlations of the two halves assessed. As far as possible the scales used have been based on established scales on which such tests have already been performed. The remaining scales have all been too short to lend themselves usefully to this type of assessment.

iii) Random Heterogeneity of Respondents

People with senile dementia vary enormously in the way in which they respond to the condition (Woods and Britton, 1985), as has already been identified in earlier chapters. While it will not be possible to allow for this in full, the analysis must allow for the effect of personal factors and abilities before any investigation of environmental effects takes place. The BRS assessment instrument of the CAPE assessment covers a range of behaviours and abilities that were used to reflect personal competence. In the estimation process (see chapter 10) these influences were allowed to enter the model before the variables that form the focus of the study, the environmental influences, were assessed.

iv) Random Irrelevances

The possibility that some unanticipated variable is operating and preventing the detection of or masquerading as an effect always exists. To a degree, identifying these for other studies is one of the purposes of this investigation. Studies that assess the effectiveness of experimental interventions in an institutional context need information about the likely environmental effects which are exogenous to the

experiment but may be influential on measures of outcome. While it is never possible to rule these out, clarity about anticipated theoretical effects can help to minimize the problem.

5.3.3 Construct Validity

There is enormous potential for construct validity difficulties in a study of this type. Ensuring that the measurements reflect the underlying influences that are of interest is a major problem when such influences as "the social environment" are part of the "treatment".

i) Inadequate Pre-operational Explication of Constructs

There is a tendency, especially in exploratory work, to find an association between a measure and an outcome and decide what the measure represents after the event. In this study there has been every attempt to specify a priori what it is that measures are intended to represent. One way to minimize the problem is make use of established scales that have been extensively tested and have clear definitions of the effect they are intended to measure. This was felt to be of particular importance when addressing the outcome measures, and this a principal reason for selecting CAPE to assess the sample resident. Similarly, in assessing the social climate of the homes the SCES scales developed by Moos and Lemke (1984) were incorporated with a minimum of alteration in the method of administering the instruments.

Some techniques and scales have needed to be adapted for use in the study to tailor them more closely to the requirements of the theoretical model. For example Lipman's route diagrams (c.1983) were used to measure individual residents' experience of the building. The technique was originally intended to assess the complexity of a building for the resident population of the home as a whole (see chapter 8). Similarly the general structure and some of the scales from MEAP (Moos and Lemke, 1984) Rating Scale were employed. Adaptations resulted from problems encountered in the pilot study (see Appendix 2).

One of the problems with studies of residential care is that, for example, in examining outcomes for residents, underlying aspects of the regime, which have been derived from rules and normal practice of homes, have been assumed to apply equally to all residents. This assumption of equal effect is questionable, both in the context of the theoretical argument about environmental fit, and in the specific case of the effect on demented residents. Indeed, it has been proposed (Lipman, 1977) that the experience of demented residents may be very different to that of alert residents in a home. In an attempt to explore this area, the regime questions asked about the home as a whole were applied as far as possible to each sample resident.

However, no previously verified scales were available which incorporated this approach to the measurement of environmental effects. An attempt was therefore made, to assess the construct validity of the newly devised measures in the pilot study. Two homes, identified by a social service manager as very different in regimes and approaches to care, were assessed. Two social service officers familiar with both homes were asked to rank the homes on each of the aspects of the regime given (form J). The degree to which the rankings matched gave an idea of the construct validity of the measure. Although there was sufficient evidence in favour of attempting the regime measures in the full study, when applied to the 13 homes the results were not entirely successful. The results and difficulties are described in chapter 7.

For the most part, other measures have had to rely upon face validity and subsequent interpretation. There was an awareness of potential threats to validity of items both during and after the fieldwork. This resulted in various approaches and specific measures being excluded from the subsequent analysis. These are specified as they arise, for example in Appendix 5 indicators of the regime that had to be abandoned are identified.

ii) Mono-operational Bias

Mono-operational bias results when only one instrument is employed to assess the aspect under consideration. Wherever possible more than one approach was used to try to assess what the effect might be. In terms of outcomes, the incorporation of the questions relating to the level of agitation and amount the resident smiled were an attempt to identify a behavioural aspect of welfare that may not be apparent in the CAPE measures. Moreover, the effect of the environment was hypothesised to occur through a number of different outcome measures. The social regimes of the homes were assessed by using specific questions on practice at a home and resident level in addition to the SCES scales. The physical aspect was investigated using route diagrams, zones (see chapter 8) and overall assessments were made using the Rating Scale.

iii) Mono-method Bias

Mono-method bias occurs when, for example, all the information is obtained by postal questionnaire from the officers-in-charge. Associations may reflect more about the officers-in-charge than the underlying constructs. This was one of the primary reasons for selecting the CAPE schedule from many of methods of assessment of dementia and dependency. This incorporated assessments by staff members who have most experience of the resident, and the independent assessment of mental state by interview with the researcher.

In assessing environmental effects the SCES scale was completed by all care staff, providing a different perspective on the home to the members of senior staff who were interviewed. The Rating Scale enabled an assessment of the staff based on observation to be incorporated, in addition to the self-report questionnaires and information from records to be included. Similarly, the Rating Scale provided observational assessment of the physical environment to contrast with the more "objective" information from the route diagrams and floor plans.

iv) Interaction of Treatments

The problem of interaction of treatments occurs when it is not possible to be clear whether, for example, the effect of specialist homes is due to higher staffing ratio, careful care planning or an overall regime effect. This is an inevitable problem in environmental studies. The incorporation of as many homes as possible, and recording as much information on an individual resident level as possible, were attempts to reduce a problem that is, ultimately, unavoidable. Only future research based on the quasi-experimental approach is likely to be able to clearly distinguish effects.

5.3.4 External Validity

There are two principle areas of external validity: the validity of generalising to a target population, and the validity of generalising across a target population.

In establishing that results can be generalised to a target population it is necessary to be clear that the group that is being investigated is representative of that group. If the results are to be regarded as applicable to all demented elderly people in residential care, for example, the level and range of dementia of the sample population should represent a reasonable cross-section of the population of demented residents of homes for the elderly. The issue of external validity also brings into question whether the homes in the study are representative of homes for elderly people. Chapter 6 compares the population and sample residents to normative and national data. Neither the sample nor the homes prove to be representative of residential care nationally so it is not possible to generalise from the results of the study to the experience of residential care in the country as a whole..

Establishing whether results can be generalised across target populations requires that variations in the population have been allowed for that may affect the outcome for other people in the same circumstances. It is accepted that this study does not have this type of validity in extending the results to residents who are both demented and blind. Such factors as sex and age were, however, included in the

data collection. Similarly at a home level the question becomes whether the assessments of homes cover the full variability of the effects of homes. The answer in the context of 13 homes must necessarily be "no". For example, although there were two homes converted from previous use and 6 homes whose design enabled and encouraged group living there were no homes of the "race track" design identified by Norman (1984).

One way in which external validity can be maximized, suggested by Cook and Campbell (1979), is to ensure a heterogeneity in the sample investigated. Thus when the homes were being selected a home was included in which attempts had been made to incorporate the use of reality orientation. Homes from different authorities were included to reflect variations in policies and management. Also a disproportionate number of specialist homes were included to reflect the enormous variation in provision that goes under the title "specialist". As identified above a variety of home designs were included.

Although in the context of such a small scale study every effort has been made to maximise external validity, necessarily levels are very low. In the discussion of internal validity, another threat to external validity was identified: the possibility of a systematic effect resulting from the process of assessment. This type of study needs to be seen more as a basis for developing measures and hypotheses for future research than as a basis for testing specific hypotheses. One role of such future research may then be to assess to what extent the results apply both to, and across, other homes and demented residents.

5.4 Conclusion

The study was designed to try to minimize, as far as possible in a study of this scale, the threats that exist to valid inference of causal relationships. Given the wide nature of the investigation this necessarily has been very limited. Where possible the measures used have built on or directly applied well established and tested scales. In the following chapters the validity of measures and their

background has been identified. Where attempts have been made to devise new measures the success of this has been somewhat limited owing to the size of the study. However, such attempts do provide the basis to develop and test new approaches to the very difficult task of assessing reliably demented residents and the effect of the environment.

CHAPTER 6

DESCRIPTION OF THE HOMES, THEIR RESIDENT POPULATION AND THE SAMPLE

Introduction

It is important to have a clear picture of the homes in the study and how they and their residents fit into the overall national provision of local authority residential care. This is not simply in order to be able to address issues of external validity (see chapter 5). It also gives a context to the analysis. Necessarily the sample residents are not representative of elderly residents as a whole, as the focus of interest is a particular sub-population of the homes.

In order to facilitate comparison, the data collected at the first stage of the study (form A in Appendix 1), was based on the instrumentation used for a survey of residential facilities for elderly people carried out by the Personal Social Services Research Unit (PSSRU) in the autumn of 1981 (Darton, 1986a, 1986b, 1986c, 1986d). This was commissioned by the DHSS in order, among other objectives, to provide information about changes in characteristics of homes, resident dependency and standards of provision since 1970. To this end the data collected was based on information gathered in the 1970 residential census and an (unpublished) 1971 sample survey of private homes (Darton, 1986d).

In the survey conducted by the PSSRU information was collected about 235 local authority homes, 68 voluntary homes and 153 private homes in 12 local authorities. The local authorities were selected as a representative sample of authorities in England and Wales (Darton, 1986a). Responses were obtained for all but two of the local authority homes within the area of the participating authorities.

Although minor modifications to the instrumentation were necessary in order to allow the selection of the sample residents, the majority of the definitions and questions were retained. Throughout this chapter this data base is the source of

comparison with the national picture in 1981. When making any comparison it is important to bear in mind that the survey took place three years before the study.

In statistical analysis the term "population" has a specific definition: "the aggregate from which the sample is chosen" (Cochran, 1977, p5). In statistical terms the population to be sampled (the sampled population) is, in the present study, the population of demented residents in the study homes. The population about which information is wanted, that is the target population, is demented residents in local authority residential care. Throughout this thesis, however, the term "population" has been used to describe the people within a given category. For example: "resident population of the study homes" includes all residents in the homes, not just those with whom the study is concerned.

In this chapter the first section describes the characteristics of the homes as a group and compares them as far as possible with the national survey homes. In the second section the characteristics of the sample residents and the resident population of the homes are described, and again put in the context of the broader national picture. The final section of this chapter covers the more detailed assessments of the sample residents made using the CAPE procedure. These are compared both with the normative data available and the measures which formed the basis for selecting the sample.

6.1 The Homes

The 13 homes included in the study, described individually in Appendix 3, were located in four local authorities. The majority (8) were county council homes. Four homes were in two outer London boroughs and one home was managed by an inner London borough. The homes were selected to provide a variety of settings rather than a representative sample of residential care facilities.

6.1.1 Physical Structure and Function

The homes varied in design from a conversion of a private house constructed before 1919, to a range of new purpose-built establishments. The majority of the homes in the study were constructed relatively recently; five were built since 1980. The building stock was therefore rather younger than that found in the country as a whole in 1981 - only 31% had been built within the 10 years preceding the national survey. The number of purpose-built homes, as opposed to those which had been converted from private use, appeared to reflect the national picture. Two homes in the study were converted from private use compared with 22% in the national survey.

According to the definitions used in the PSSRU survey (Darton, 1986b), 30% of establishments were classified as group or semi-group living homes. In the study 6 of the 13 homes were group-living homes. Although among the study homes the proportion of group-living homes is higher than would be expected from the national picture, this may reflect a growing trend, rather than a disproportionate representation of this type of home. One of the homes in the study was in the process of conversion from a former purpose-built home for communal living into a group-living establishment. Plans were underway for conversion of another of the homes to enable group-living. Moreover, of the five homes built during the last four years, four were for group-living.

The study homes did not cover the range of sizes of homes in the country as a whole - a disproportionate number (11) were in the middle range size of between 31 and 50 beds. One home was larger than this and one smaller. In the national survey only 58% of homes fell into the middle sized category. Ten of the thirteen study homes had a maximum of two beds in any bedroom. This compares favourably with the homes in the national survey, where only 57% had a maximum of two beds in any bedroom. One of the study homes had a five bedded room and one four rooms with four beds. These two were converted from previous use as private housing. One purpose-built home for specialist care of mentally infirm elderly people had an

unusually high proportion of shared rooms; only 6 of the 19 rooms were single. There was provision in the design, however, to convert most, if not all, the shared rooms into single rooms at a later date.

The majority of the study homes provided day care within the home rather than in separate facilities, which reflected the national picture. Day care was provided within the home in eight of the study establishments. Similarly, 74% of the homes in the survey provided day care in this way. Day centres were attached to only 2% of the homes in the national survey in 1981, and to just two of the homes in the present study.

The area in which the homes were most unlike the national picture was in terms of function. Only 3.4% of homes nationally were specialist establishments for elderly mentally infirm people although a further 6% were classified as for both elderly people generally and elderly mentally infirm people. In order to represent this important type of provision for people with senile dementia adequately, nearly half the homes (6) in the study were designated specialist. As section 6.2 shows, this had an important impact on the type of population from which the sample was drawn.

Clearly the study homes were not representative of homes nationally in either construction or function. The study homes were, on average, more recently constructed, more likely to be designed or adapted for group-living and with a higher proportion of single rooms. The provision of day care was similar to the national picture, but there was a disproportionately high number of specialist homes included in the study to enable an assessment of this type of facility.

6.1.2 Staffing

Table 6.1 gives a breakdown of information about staffing levels and turnover. The average number of hours of staff time per resident per working week, for all grades of staff, was 21 hours; exactly the same as the number of hours of staff time per resident nationally in 1981 (Darton and Wright, 1989). In the study homes this staff-

resident ratio results in an average of 12 hours of care staff time per resident, however. It is interesting to note that the number of supervisory staff hours to each full time equivalent member of care staff (10 hours) is almost as many as care staff hours per resident (12 hours).

Table 6.1 Staffing Levels

	Mean	SD
Total Staff/Resident Ratio (hours)	21	4
Care staff/Resident Ratio (hours) (excluding supervisory)	12	3
Supervisory/Care Staff Ratio (hours)	10	8
Average no. of days sick over 6 month period	2.3	1.4
% Staff left	6.5	6.5

Note: All figures refer to staff in post, and assume a 39 hour standard working week.

Whatever the ratio of staff to residents in theory, or even in post, in practice the ratio can be a lot lower if there is a high level of sickness or turnover of staff. During the six month period care and supervisory staff had two days sick leave each on average. This ranged from an average of five days in one home to about half a day in another. The six month period of the study was during the winter, a time of the year when sickness levels would be expected to be relatively high. Discussion with officers-in-charge established that the overall level of sickness among staff did not appear to present a problem. Difficulties arose when an outbreak of influenza resulted in a lot of staff being away from work at one time, or chronic illness resulted in long term under-staffing.

Information on staff turnover was only collected for care and supervisory staff. In one home 19% of these members of staff left during the six month period. Given the

reliance on part-time staff with their other commitments, it is not surprising if the turnover of staff is high. At the beginning of the study period 317 care and supervisory staff were employed in the homes covering 214 full-time equivalent posts. 68% of the 244 care and supervisory staff who completed questionnaires were employed on a part time basis. However, on average in the homes only 6.5% of these grades of staff left, and 72% of the staff who completed questionnaires had been in post for over two years (table 6.2). Given that five of the homes were less than five years old this would argue for a relatively stable labour force.

Table 6.2 Length of Service of Care and Supervisory Staff

Length of Service in Home	No. Staff	%
Less than 6 months	19	8
6 months - 1 year	25	10
1-2 years	26	11
2-5 years	97	40
> 5 years	77	32
Total	244	100

In table 6.3 the qualifications of the surveyed staff are detailed. While the proportion of staff with social work qualifications (5%) may seem low, this is higher than the rate nationally. In 1981 just 2% of care and supervisory staff had social work qualifications, and this was a considerable increase from the 0.1% of staff in 1970 (Darton, 1983). A higher proportion of staff had a nursing qualification (13%). In 1981 the level of nursing qualifications among staff was 9.5% nationally, a drop from 13% in 1970. There did not appear to be any policy to recruit people with nursing training into specialist homes, in fact the specialist homes had a lower proportion of staff with nursing qualifications (11%) compared with the non-

specialist homes (14%). Only 2% of staff reported no relevant previous experience or training.

Table 6.3 Qualifications of Care and Supervisory Staff

Qualification	No.	Staff %
Social work qualification	13	5
Nursing qualification	31	13
In-service training	57	23
Any qualification or training	83	34
Previous experience	148	61
No qualifications or experience	5	2
Total	244	100

From this description of the staff in the study homes it would appear that there is a relatively stable workforce, principally part-time, of care and supervisory staff. The staff-resident ratios and levels of training are similar to the national picture, which is surprising given the high proportion of specialist homes in the study. It would be expected that these homes would have higher staffing levels and proportions of qualified staff because of the expectation that they would cater for more dependent residents (Darton and Knapp, 1986).

6.2 Residents

Information was collected about every resident in the study homes. This was to provide a basis for selecting the sample and a general picture of the "supra-personal" environment. The following section describes the residents as a whole and contrasts the sample residents with this population. Both groups are also compared with the population of local authority homes for the elderly in the PSSRU survey.

6.2.1 Background and Characteristics

Only permanent residents who had been in the home for more than six months were included in the sample. Table 6.4 shows the distribution of the type of stay of the resident populations in the study homes and the national survey: whether residents were permanent, short-stay or visiting for assessment. Although the proportions of residents who were not permanent were very small they were still at least double the national average. In three of the authorities in the study less than 1% of residents were short-stay. In the homes in one of the local authorities, however, over 4% of residents were in the homes on a short-stay basis. It is likely, therefore, that this authority had a specific policy of encouraging the use of residential facilities for short-term care. The proportion of short-stay residents is high overall because the majority of the homes (8) were located in this authority.

Table 6.4 Type of Stay of Residents

Type of stay (number of residents)	PSSRU Survey LA Homes (10245) %	Study Homes (520) %
Permanent	97	93
Assessment for permanent stay	1	3
Short-stay	2	4

The implication of a higher proportion of short-stay residents is an increased turnover of residents. Although the proportion of short-stay residents is higher than expected, it is still very low. However, the turnover of residents, as measured by the number who left the home during the period divided by the number of residents in the homes at the beginning of the study, was 91% on average! Only 21% of people entering the homes during the period were new admissions, however, and

only 11% of the residents died. The high resident turnover figure reflected the combined effects of holidays, short term hospitalisation and short term care.

In further analysis use was made of this method of estimating resident turnover, which reflected all comings and goings in the home, as it was these, rather than changes in permanent residents, that were hypothesised to have a disruptive effect on the homes and the residents. As later results will show, a high level of arrivals and departures among residents may have a negative impact on the regimes experienced by all residents and the behaviour of demented residents.

Table 6.5 Source of Admission of Permanent Residents by Sex

Source of admission (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(9880) %	Pop (511) %	Sample (104) %
Another residential home	12	13	10
Hospital	35	34	35
Living alone in private housing	29	24	22
Living with others in private housing	17	22	26
Sheltered housing	4	5	7
Hotel, boarding house or lodgings	2	>0	0
Other/Not known	1	1	1

Table 6.5 shows the source of admission of residents. The proportions of residents that were admitted from other homes or hospital were broadly similar across the PSSRU survey homes, the study homes and in the sample. The effect of the incidence of dementia is seen through the higher proportion who are admitted from

living with "others", usually family. The stress on relatives of caring for someone with senile dementia is well documented (Sanford, 1975; Levin et al, 1983; Argyll et al, 1985), and a frequent cause for application for admission to residential care (Neill et al, 1989).

In table 6.6 the distribution of the length of stay of the permanent residents is shown. The shorter than average length of stay in the study homes can be ascribed in part to the dominance of recently built homes.

Table 6.6 Length of Stay of Permanent Residents

Length of Stay (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(9764) %	Pop (481) %	Sample (104) %
Under 1 year	28	30	25
1-2 years	20	18	18
2-3 years	14	12	14
3-4 years	9	16	19
4-5 years	8	10	12
5-10 years	17	11	12
Over 10 years	5	3	0
Average length of stay (months)	39	29	27

None of the sample residents had been in any of the homes for more than ten years. This may also be due to the lowered life expectancy of people with senile dementia (see chapter 1). Only residents who had been in the home for six months or more were included, in order to exclude effects resulting from relocation (see

chapter 5). The net effect of this was that the average length of stay of sample residents was close to the average for all residents in the homes.

Table 6.7 shows the age distribution of residents. The proportion of very aged residents, over the age of 85, is higher in the study homes than in the national survey. But the proportion of residents over 85 in the sample was lower than in either the study homes or in the national survey. The average age of residents is approximately the same for all the groups and the proportion over the age of 75 is very similar. Although the reduced life expectancy of people with senile dementia may be responsible, it is possible that the apparent disparity simply relates to the arbitrary cut off point at the age of 85 used in the breakdown of the resident population.

Table 6.7 Age of Residents

Age (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(10227) %	Pop (520) %	Sample (104) %
Under 65	3	2	3
65-74	15	11	9
75-84	42	37	50
85 and over	41	50	38
Average age	82	84	83

In the PSSRU survey 73% of residents were female. In the present study women formed 81% of the resident population of the homes. In the sample the proportion rose even higher, to 88% of residents. Women have longer life expectancy, so the dominance of women in residential facilities for elderly people is to be expected. The higher proportions in the study home and in the sample would suggest that the

proportions were linked to the incidence of dementia. Indeed, a higher proportion of women (50%) than men (42%) were assessed as moderately or severely confused by a senior member of staff in the home.

Table 6.8 shows the frequency with which residents received visitors. The vast majority of residents in the study homes received visitors at least once each month. The proportion (70%) was higher in the study homes than in the PSSRU survey (65%). However the sample residents tended to receive visitors less often on average, with only 59% receiving them more than once each month. This is not entirely surprising as dementia often results in people failing to recognise or being abusive to close relatives. Such behaviour is likely to deter the most devoted visitor.

Table 6.8 Frequency of Visits from Friends/Relatives

Frequency of visitors (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(10205) %	Pop (516) %	Sample (104) %
At least once a month	65	70	59
At least once a year	19	21	29
Rarely/Never	16	10	13

The background and characteristics of the resident population are similar to the national picture, although the higher than expected proportion of short-stay residents results in a high level of resident turnover in the study homes. The selection criteria resulted in an uncharacteristic sample of residents with a preponderance of women.

6.2.2 Physical Competence

Physical competence in this context includes: sensory deficits, ability to perform activities of daily living, and faecal and urinary continence. The cognitive basis for such difficulties and general measures of dependency are discussed in the following sections.

No residents who were blind, or who suffered from such poor sight they were unable to read, were included in the sample. Only 6% of residents in the study homes were blind; a further 26% were judged partially sighted. These proportions were slightly higher than those found in the national survey homes (5% and 23% respectively).

In the sample only 2% of residents were classified by senior staff as deaf, and 33% as hard of hearing. In the homes as a whole 5% of residents were classified as deaf and 36% as hard of hearing; similar proportions were found to those in the PSSRU survey (5% and 30% respectively). There was no deliberate policy to exclude residents who were deaf from the sample, as it was usually possible to interview such residents with the help of staff who knew them well. The lower reported level of deafness among the sample residents may be due to under-diagnosis in the homes among the demented elderly residents.

The physical ability of residents to get around is described in table 6.9. In the PSSRU survey 17% of residents were immobile or needed staff help. In the study homes the proportion was higher (22%), although a lower proportion used aids to walk independently of staff. The sample, in contrast, appeared to be more mobile than the resident population of the homes generally, and far less likely to use aids. Alert residents generally apply for residential care as a result of physical disabilities (Neill et al, 1988) and thus are to be expected to have more physical difficulties than residents admitted as a result of cognitive associated problems.

Table 6.9 Mobility of Residents

Mobility (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(10232) %	Pop (519) %	Sample (103) %
Mobile outdoors unaided	30	21	24
Mobile indoors unaided	7	4	8
Mobile on level indoors unaided	13	18	30
Mobile on level indoors with aids	35	34	18
Mobile on level indoors with assistance	9	13	17
Mobile in wheelchair only	7	8	3
Bedfast	1	1	0

In table 6.10 the abilities of residents to perform basic personal care tasks are described. Most residents in the survey and study homes as a whole were able to feed and wash themselves without difficulty, use the WC and get in and out of bed. The proportions were generally lower in the study homes, however and only 34% could dress themselves without difficulty, compared to 52% in the PSSRU survey homes. A very small proportion of residents were able to bathe themselves.

The sample residents would be expected to be more dependent than the population from which they were drawn. Indeed they were half as likely to be able to dress themselves without difficulty and only one resident was judged able to bath herself without difficulty. Dementia did not impinge on basic tasks such as getting in and out of bed, however, and had relatively little effect upon residents' ability to feed themselves.

Table 6.10 Personal Care Capacities of Residents

Personal Care (number of residents)	PSSRU Survey LA Homes	Study Homes	
	(9954) %	Pop (419) %	Sample (104) %
Washing self			
Able with no difficulty	71	54	42
Able with some difficulty	14	23	22
Not able without assistance	16	23	36
Bathing self			
Able with no difficulty	10	6	1
Able with some difficulty	13	9	10
Not able without assistance	77	85	89
Dressing self			
Able with no difficulty	52	34	17
Able with some difficulty	22	32	32
Not able without assistance	26	35	51
Feeding self			
Able with no difficulty	86	74	70
Able with some difficulty	9	17	19
Not able without assistance	5	9	11
Using the WC			
Able with no difficulty	72	55	48
Able with some difficulty	12	18	17
Not able without assistance	17	27	35
Getting in and out of bed			
Able with no difficulty	68	56	56
Able with some difficulty	15	20	14
Not able without assistance	18	24	30

Incontinence is associated with the condition of senile dementia, so it is not surprising to find that only 38% of the sample were fully continent, compared to 55% of the residents overall. 25% of sample residents were doubly incontinent as opposed to 16% in the homes as a whole. In the national survey 59% of residents were fully continent and only 10% suffered from double incontinence.

In general the physical competence of the residents in the study homes was lower than in local authority care nationally and the sample experienced even more

difficulties. This was to be expected given the high proportion of specialist homes and the method of selecting the sample residents. It was noted earlier, however, that among demented people physical competence problems often are the result of cognitive deficits rather than physical health difficulties.

6.2.3 Mental Competence

In order to provide a clear cut-off point for the selection of sample residents the method of classifying the confusional state of residents was changed, from the three categories used in the PSSRU survey to four. As table 6.11 shows, the resident population of the study homes is not, therefore, directly comparable with the national survey on this basis. However, it is clear that the study homes have substantially higher levels of mental confusion among the residents than homes in general. This is as expected, given the proportion of specialist homes. Senior staff were also asked whether the residents had a medical diagnosis of any mental condition. Only 24% of residents and 45% of the sample had been formally diagnosed as suffering from senile dementia.

It is clear from table 6.11 that a lower proportion of residents are severely confused in the sample than would be expected if they were a true random sample from those residents who were assessed as moderately or severely confused. This may be due in part to those residents who were excluded from the study - those who were blind and those who had been resident less than six months. The primary reason, however, will have been the distribution of the residents between the homes. In those homes where the proportion of demented residents was low, all suitable residents were included in the sample. In those (predominantly specialist) establishments where the sample were selected from a number of suitable candidates, the proportions of the sample reflected the proportions of moderately and severely confused residents within the home. The "confused" residents of non-specialist homes, who were less likely to be severely demented, were thus more likely to be selected. The sample does not, therefore, accurately reflect the distribution of

severity of "confusion" that exists in the population of demented residents in the homes, that is the "sampled" population defined above.

Table 6.11 Mental State and Behaviour of Residents

	PSSRU Survey LA Homes	Study Homes	
	(10217) %	Pop (520) %	Sample (104) %
Mental State (number of residents)			
Mentally alert	44	26	0
Mildly confused or forgetful	37	23	0
Moderately confused	n/a	24	47
Severe confusion	19	57	53
Behaviour (number of residents)	(10156)	(519)	(104)
Not a nuisance	70	62	42
Minor nuisance	22	27	40
Major nuisance	8	11	17

Table 6.11 also includes a broad classification of behavioural difficulties presented by residents. Given the much higher incidence of mental confusion in the study population, the incidence of severe behavioural problems appears low. Even within the sample, only 17% of residents appear to be a major nuisance. This may say more about the tolerance of senior staff than it does about the residents' behaviour.

The items used to identify levels of depression and anxiety were originally based on items from scales devised by Hamilton (1960). This has been adopted in studies of community care (Challis and Davies, 1986) as well as in the PSSRU survey. Table

6.12 compares the levels of depression and anxiety in the study homes to those found in the PSSRU survey. The prevalence of depression and anxiety was very similar in the population of the study and PSSRU homes. There is a slightly higher level of both anxiety and depression among the sample residents than among residents in the homes as a whole. This is to be expected, given the association between dementia and depression (Rabins et al, 1984).

Table 6.12 Depression and anxiety of Residents

	PSSRU Survey LA Homes	Study Homes	
	(10185) %	Pop (514) %	Sample (104) %
Depressive/anxiety symptoms (number of residents)			
No evidence of depression	57	50	43
Sadness and gloom	28	34	37
Sadness and gloom and often weeps	10	12	13
Depression and guilt	5	5	8
No evidence of anxiety	41	35	28
Worries about minor matters	37	40	31
Often apprehensive	10	11	16
Frequently tense and irritable	12	14	25

In a study of local authority homes in Camden, Mann et al (1984) assessed depression in those residents who did not have severe dementia. 33% with no dementia were assessed as suffering from depression, as were 42% of residents with mild or moderate dementia. Darton (1986d) described the prevalence of symptoms of depression among residents in the national survey and found similar results. 32% of alert residents and 48% of residents with some confusion were recorded as having

some symptoms of depression. In the study homes the proportions were slightly higher than in the national survey: 37% of alert residents showed some symptoms of depression. By contrast, 50% of residents with mild confusion, and 55% of moderately confused residents showed symptoms of depression.

Specialist facilities care for elderly people with all types of mental infirmity and such homes accounted for nearly half of the study homes. As depression is the major mental problem, other than dementia, that is associated with elderly people (Woods and Britton, 1985), it is to be expected that there will be a high proportion of residents with depression in the study homes.

Also as expected, the cognitive competence of residents in the study homes is lower than in residents in local authority care nationally. This does not seem to result in higher levels of behavioural difficulties among residents, although there does appear to be a slightly higher prevalence of depressive symptoms.

6.2.4 General Measures of Dependency

A number of methods for assessing the dependency of residents have been developed which aim to give an overall picture of the demands of the resident rather than the specific difficulties that they require help with. Which method is most appropriate for a given application depends on the purpose for which it is to be used. In this context, the measures are needed simply to describe the resident populations and sample as a whole, and to provide a comparative picture. In the further analysis of the sample residents the CAPE assessment is used. This is described and compared with the more general dependency measures in the next section.

The information collected allows a number of different dependency measures to be estimated. Four methods of classifying the residents are shown in table 6.13. The detailed definitions of the construction of these scales can be found in Appendix 4.

Two of the four dependency scales devised by Booth (1985), the self-care and continence scales, could be estimated using the data collected in the study. The information required for constructing the remaining two scales for orientation and social integration was not collected. Residents were categorised as severely dependent on the self-care scale if they were chairbound, bedfast or needed help from staff in three or more self-care tasks. A resident was classified as independent if he or she was ambulant and able to dress, feed, wash and use the WC unaided.

Table 6.13 Dependency Classifications

	PSSRU Survey LA Homes	Study Homes	
(number of residents)	(10217) %	Pop (516) %	Sample (104) %
<u>Booth Self-Care Scale</u>			
Independent	50	32	17
Moderately dependent	29	37	40
Severely dependent	21	31	42
<u>Booth Continence Scale</u>			
Fully continent	60	55	39
Mostly continent	15	18	20
Incontinent	20	28	40
<u>DH 3-way Dependency Classification</u>			
Minimal	16	8	0
Moderate	61	61	43
Substantial	23	31	57
<u>DH 4-way Dependency Classification</u>			
Minimal	25	12	0
Limited	36	41	28
Appreciable	11	10	11
Heavy	28	38	62

This self-care classification shows the residents of the study homes more or less evenly split between independence, moderate dependency and severe dependency. As

expected, the distribution reflects a more dependent population in the study homes than in residents in the national survey, 50% of whom were categorised as independent. However, one rather dubious result of this classification is that 17% of the sample residents, who were selected as the more dependent residents in the homes, were categorised as "independent".

The reason for this apparent underestimate of the dependency of the sample residents is the narrow range of the scale, which is intended to be used in the context of the other three dependency related scales. The distribution of residents across the continence scale also gives an indication of the higher levels of dependency in the study homes and among the sample residents. However, the use of these scales does not provide the global picture needed: even with the other two scales available further analysis would be required to establish an idea of the overall level of functioning of the residents.

The three way DH classification, on the other hand, combines information relating to self-care ability, mobility, continence and mental state into a single measure. The measure was first devised for the 1970 Residential Census (DHSS, 1975). This classifies none of the sample as minimally dependent, and the majority as substantially dependent. The comparison between the two populations is less satisfactory, however. The majority of residents (61% in both cases) are classified in the middle "moderate" category. The difference between the populations only appears in the changed proportions of minimally and substantially dependent residents.

As in the three dependency category DH method, the four way classification combines mobility, self-care, continence and mental state indicators. The classification was first defined in Davies and Knapp (1978) and categorises residents as "minimally" dependent, of "limited" dependency, "appreciably" or "heavily" dependent. As in the three way classification, the main difference between the populations is a lower proportion of minimally dependent people in the study homes (12% compared to 25% in the PSSRU survey) and a higher proportion of residents

who are heavily dependent. There is, however, a larger proportion of people of limited dependency. By definition none of the sample residents fall into the minimal dependency category, and only 28% were categorised as being of limited dependency. The majority (62%) were categorised as heavily dependent. This method of defining dependency appears to give a fuller picture of the differences between the groups but the stability of the proportion of residents in the "appreciable" category of dependency suggests that the usefulness of the category is questionable.

No one method of describing the dependency of the residents appears entirely satisfactory. Predictably, all three methods show a slightly more dependent population of residents than found in homes generally, and substantially more dependent residents in the sample.

6.3 The Clifton Assessment Procedures for the Elderly (CAPE)

The CAPE method for assessing the mental and behavioural competence of elderly people has been the result of a series of research projects dating back to 1973 (Pattie and Gilleard, 1979). It consists of two sections: the cognitive assessment scale (CAS) and the behaviour rating scale (BRS). The CAS consists of a brief interview (form F, Appendix 4) which assesses orientation, mental ability and psychomotor ability. The BRS (form G, Appendix 4) was completed by a senior member of staff. This is used to assess physical disability (Pd), apathy (Ap), communication difficulties (Cd) and social disturbance (Sd). The scores of the sub-scales are added to provide a CAS score which increases with mental competence, and a BRS score which increases with behavioural difficulties.

6.3.1 Validity and Reliability

Various studies have examined the validity of CAPE (Pattie and Gilleard, 1979) by assessing the concurrent and predictive validity with other scales. These have shown that the CAS has concurrent validity with the Weschler Memory Scale (WMS). In the study reported in the manual (Pattie and Gilleard 1979), there was no evidence of any significantly different capacity between the two measures in the prediction

of the diagnostic status of elderly patients after one year. In another study, Savage et al (1973), found the CAS was a more sensitive predictor of outcome for demented elderly people, than the more detailed Weschler Adult Intelligence Scale (WAIS). The BRS has been shown to discriminate between individuals with different outcomes in groups of acute elderly psychiatric patients (Pattie and Gilleard, 1978a). It has also been shown to discriminate between death and survival amongst the elderly mentally infirm (Pattie and Gilleard, 1978b).

In the context of the study it was not possible to check the inter-rater reliability for the BRS. However, the same rater interviewed all the residents for the CAS and it was possible to check the test-retest reliability. 17 residents were interviewed again a week after the first interview. The correlation between the orientation scores, or the test-retest reliability coefficient, was .86. In the CAPE manual the test-retest reliability coefficient was .87 on a study of 38 patients over a period of three of four days. The correlation of the mental ability scores in the study was .80, compared to .89 reported for the patients in the manual. The psychomotor test proved more reliable in the study (.89) than in the hospital patients (.79).

The test-retest correlations are sufficiently high to suggest adequate stability and that changes over a six month period can be assumed to represent changes in competence of the resident rather than variations due to rater behaviour between administrations of the scale.

One threat to the validity of the CAPE assessment was the possibility that some of the residents had never been literate and would not be able to read the list of words included in the CAS test. This would result in a lower mental ability score than would be expected otherwise. The level of information held in the homes about the residents' background was such that it was unlikely that evidence of past literacy could have been established. No allowance was made, therefore, for this possible source of unreliability.

6.3.2 Comparison with Normative Data

Table 6.14 contrasts the results for the study sample with the normative data from the CAPE manual, for two groups of elderly people. The social service nursing home group were selected as the group which should be most like the sample selected for the study.

Table 6.14 Average Scores for Sub-scales of CAPE

(number of residents)	Normative Data		
	Study home Sample Residents (104)	Psychiatric Nursing home Residents (60)	Acute Psychiatric patients (organic) (60)
Cognitive Assessment Scale (CAS)	9.2 (8.4)	18.8 (10.1)	12.0 (8.6)
Information/orientation	2.1 (2.1)	5.0 (3.4)	3.1 (2.7)
Mental Ability (MAb)	4.5 (3.9)	8.3 (3.6)	6.1 (4.0)
Psychomotor (Pm)	2.6 (3.7)	5.5 (4.6)	2.8 (3.5)
Behaviour Rating Scale (BRS)	18.7 (5.3)	18.1 (6.5)	14.7 (7.1)
Physical disability (Pd)	7.3 (2.4)	6.0 (2.8)	5.1 (2.8)
Apathy (Ap)	7.1 (2.4)	6.9 (2.1)	6.3 (2.1)
Communication difficulties (Cd)	1.0 (1.1)	0.7 (1.3)	0.9 (1.1)
Social disturbance (Sd)	3.3 (2.3)	4.3 (3.1)	2.4 (2.2)

Normative data from Pattie and Gilleard (1979).
() give standard deviation of scores.

It would appear from this that the study sample are more dependent than the average psychiatric nursing home resident. The study sample have considerably

lower mental competence than the nursing home residents in general. However the behavioural difficulties are very similar. The sample were selected on the basis of being judged "moderately" or "severely" confused by senior staff. Lower average cognitive ability would therefore be expected in this group of residents because the nursing home sample would include patients with affective disorders, such as depression.

In the manual (Pattie and Gilleard, 1979) a cut-off point is discussed. Scores below 8 on the information/orientation (I/O) sub-scale have been found to be associated with a diagnosis of either dementia or acute organic brain syndrome (Pattie and Gilleard, 1975, 1976, 1978a). Only four of the sample residents had I/O scores over 7, and all of these fell in the "borderline" category of 9 and below, so it was decided to include these residents in the analysis. In borderline cases the manual recommends serial assessment to help clarify diagnostic uncertainty. Three of the four residents had lower scores at the assessment six months later which would suggest that they were cognitively impaired.

6.3.3 Sample selection and CAPE scores

Although the sample is not representative of demented residents in the homes as a whole, the comparison with the normative data available should counter any possible criticism that a particularly able sample of the demented residents of the homes had been selected (see section 6.2.3 above).

In table 6.15 the average scores of residents classified as moderately and severely confused are shown. From this it would appear that the assessment of senior staff correlates well with the CAPE scores. However the range of values in each case is very high. The highest CAS value in the group of "moderately" confused residents was 30, but the highest in the "severe" group was not much lower at 27. In both groups the lowest CAS score was the minimum zero. The BRS scores were more closely linked: the lowest score was six for the "moderate" residents and 11 for

Overall, however, there is clearly a high level of association between the judgments of staff and the CAPE assessment of the abilities of residents. Using analysis of variance the average CAS scores were significantly lower for residents who were categorised by staff as "severely" confused than the residents categorised as "moderately" confused ($p < .05$). "Severely" confused residents also had significantly more behavioural difficulties using the BRS assessment ($p < .01$). As expected, the average BRS score for the sample residents varied significantly within the broad behavioural problem categories used in the national survey ($p < .01$). The average CAS scores also varied significantly across these categories ($p < .05$), but the relationship does not appear straightforward. A higher level of cognitive ability is associated with minor problems. The lower level of mental competence associated with no behavioural difficulties probably reflects withdrawn residents: the definition of behavioural problems in the national survey instrument is that the behaviour is a "nuisance" (see Appendix 1).

6.3.4 CAPE Dependency Groups

The method by which dependency groups are derived from the CAS and BRS scores is described in the manual (Pattie and Gilleard, 1979). Overall, the average scores of the sub-scales are consistent with the classification of the sample residents as "high dependency" (D/E). There are two methods of classifying residents into dependency groups based on the CAPE scores. In table 6.16 the distribution of the residents across the more detailed dependency classification is shown. This was devised because it was found that a very large proportion of patients fell into the D and E categories. In the sample over 85% of the residents were classified as high or maximum dependency in the broader breakdown of dependency.

Only one resident was classified as suffering from low impairment. Of the 12 residents who were of "medium" dependency, 3 had a social disturbance score greater than four. This can indicate that the resident will need more care than most residents in this dependency group. In the high dependency group, the majority (27 out of 31), were classified as high dependency because of physical difficulties.

Almost half of the residents in the maximum dependency group were in the very highest category, with severe mental, mobility and continence problems. Several of these residents were, as the manual suggests, inaccessible. They did not respond to their own name, or even touch in one case.

Table 6.16 CAPE Dependency Groups

<u>Cape Group</u>	<u>No. in Sample</u>	<u>Definition</u>
A	0	No impairment
B	1	Low impairment
C	12	Medium dependency
D1	4	High Dependency - more disturbed
D2	27	High Dependency - more physically dependent
E1	0	Maximum dependency but continent and ambulant
E2	12	Maximum dependency, high physical dependency
E3	19	Maximum dependency, ambulant and disturbed
E4	29	Maximum dependency, high physical dependency, apathetic and frequently inaccessible

	104	

6.3.5 Comparison of Dependency Classifications

It is interesting to compare the CAPE classifications and scores with the dependency classifications used in the previous section. Table 6.17 shows the breakdown of the scores by the dependency groups shown in table 6.13. Analysis of variance was used to examine whether the CAS and BRS scores varied significantly between the dependency categories in each classification.

The relationship between the Booth self-care scale, which includes no assessment of mental or behavioural state, and the CAS is significant ($p < .01$). It is interesting to note that the same is not true for the DH four way classification, which does include an assessment of mental state. This may be due to the "appreciable" category which did not appear very useful in the earlier discussion. Overall, however, the variation in the CAPE scores between the dependency categories was as expected.

Table 6.17 Average CAPE scores by dependency Classifications

	CAS	BRS
<u>Booth Self-Care Scale</u>		
Independent	15.1	13.7
Moderately dependent	10.1	17.3
Severely dependent	6.0 (***)	22.2 (***)
<u>Booth Continenence Scale</u>		
Fully continent	12.3	15.7
Mostly continent	8.6	19.3
Incontinent	6.6 (***)	21.4 (***)
<u>DH 3-way Dependency Classification</u>		
Minimal	--	--
Moderate	11.2	15.9
Substantial	7.8 (**)	20.9 (***)
<u>DH 4-way Dependency Classification</u>		
Minimal	--	--
Limited	11.2	14.1
Appreciable	10.2	17.8
Heavy	8.1 (ns)	21.0 (***)
<u>Analysis of Variance (F statistic)</u>		
ns	p>.1	
*	p<.1	
**	p<.05	
***	p<.01	

When the CAPE dependency groups are compared with the other groups (see table 6.18), the majority of the sample residents are classified in equivalent or near equivalent groups in both cases.

The methods of classifying of resident dependency are not entirely consistent, however. Two people, classified as independent in Booth's self-care scale, were classified as of maximum dependency (ambulant and disturbed) in the CAPE groupings. Similarly, 10 of the people classified in the very highest dependency group in CAPE were classified as moderately dependent in the DH three way

classification. Six of the residents classified as "maximum" dependency in CAPE were categorised as being of limited dependency in the four-way classification.

Table 6.18 Comparison of Dependency Classifications

	CAPE Dependency Groups (No. of sample residents)					
	B	C	D	E2	E3	E4
<u>Booth Self-Care Scale</u>						
Independent	1	7	8	0	2	0
Moderately dependent	0	5	16	4	9	8
Severely dependent	0	0	7	8	8	21
<u>Booth Continence Scale</u>						
Fully continent	0	12	17	1	7	4
Mostly continent	1	0	5	3	6	6
Incontinent	0	0	9	8	6	19
<u>DH 3-way Dependency Classification</u>						
Minimal	0	0	0	0	0	0
Moderate	1	10	18	0	6	10
Substantial	0	2	13	12	13	19
<u>DH 4-way Dependency Classification</u>						
Minimal	0	0	0	0	0	0
Limited	1	10	12	0	4	2
Appreciable	0	0	5	0	2	4
Heavy	0	2	14	12	13	23

Cape Dependency Groups Definitions

A No impairment	E2 Maximum dependency, high physical dependency
B Low impairment	E3 Maximum dependency, ambulant and disturbed
C Medium dependency	E4 Maximum dependency, high physical dependency, apathetic and frequently inaccessible
D High Dependency	

Clearly the match between the methods will not always be consistent, the choice of approaches depends on the use to which the method is to be put. The CAPE is intended to assess patients and elderly people generally in a way that focuses on their mental and behavioural difficulties, rather than specific issues such as self-

care. In this study it is to be used to provide measures of outcome. For this purpose the individual sub-scales are of interest, rather than the overall classification system. These are described in more detail in chapter 10.

6.4 Conclusion

The homes and the residents in this study are not representative of homes and residents in the country as a whole. There is a high proportion of specialist homes, included to enable an assessment of this type of provision. Staffing levels and qualifications are similar to the national picture, however, which is surprising given the prevalence of specialist facilities in the study.

The population of the study homes overall is more dependent than residents in care generally. From this population a particular sample of very dependent residents, have been selected. The intention has been to select only those residents who have senile dementia, although this can not be certain in the absence of a medical diagnosis. Only 45% of the sample residents have had such a diagnosis made in the past. However the assessments made using CAPE are consistent with people suffering from senile dementia. The sample appears appropriate, therefore, for the purposes of the study.

In this chapter the homes and staff have been described and set in the national context. In addition a variety of means have been used, including dependency groups, to describe the resident population of the study homes as a whole. The sample has been set in the context of this "supra-personal" environment. In the following chapter the description focuses upon the social aspect of the environment.

CHAPTER 7
THE SOCIAL ENVIRONMENT OF HOMES
CARING REGIMES

Introduction

From very early on in the study of residential care of the elderly there has been a conviction among researchers, observers and practitioners alike that the social environment of homes must have a profound effect on the quality of life of the residents. From Barton's (1966) study of institutional neurosis and such interpretations as Goffman's "total institutions" (1961) can be seen the feeling amongst visitors to homes that the institutional nature of the social climates of many homes must have an impact on anyone living in them.

However, identifying the regimes or social effects of the homes has proved an elusive task. In Chapter 3 there is a discussion of some of the studies and the general lack of success in relating the measures of regime to outcomes. Booth (1985) identified four sets of problems in assessment:

...problems of selective intake; interaction effects between residents and their social environment; the many-sided nature of institutional regimes; and the difficulties of measuring outcomes.

In this chapter the second and third of these problems are addressed. These problems are closely related, especially in the assessment of the effect of the environment on demented residents. The many-sided nature of institutional regimes results in part because of the variation in the way that these regimes interact with different groups of residents. Harris and Lipman (1980) suggested that there was a distinction in the way that demented residents were treated both by staff and other residents in non-specialist homes - getting the least favoured chair, and so on. In assessing the social environment of the homes it was seen as important

therefore, not only to assess the overall regime of the homes but the "individual experience" of these regimes.

Given the difficulty of the task of assessment it was decided to take two principal approaches to the problem of measuring the social environment. These consisted of a devised set of regime measures and the Social Care Environment Scale (SCES) developed by Moos and Lemke (1984). This chapter assesses the first of these, a method based on an approach used by Booth (1985) in which officers-in-charge or senior members of staff were asked about specific management routines and care practices. The advantage of this type of approach was that for many of the questions asked about the general running of the home it was also possible to apply them directly to the individual residents, and see how that particular regime item applied to them. The disadvantage was in the lack of well-verified scales.

7.1 Methodology

The intention at the start of the study was to devise scales that would reflect the regimes of the homes via management and care practice questions. Since similar questions could be asked at the home and individual level the scales would demonstrate how the home rating, in terms of regimentation of care for example, related to the actual practice for a particular resident. This was seen as particularly important in assessing the effect of such factors on demented residents, as their behaviour is often such that "normal" practice or rules will be seen as irrelevant.

In considering the dimensions of the social environment that it was proposed to measure, account was taken both of previous studies of residential care and of the specific needs of people with senile dementia. For example, Booth (1985) identified "integration into the community" as an aspect of the social environment. In this study, maintaining links with demented elderly residents' backgrounds was considered the most important aspect of such links. Links with the background of residents can provide cues for the residents and guides to appropriate responses from staff (Feil, 1985). In chapter 4 the theoretical basis of the dimensions of the social environment

that it was proposed to identify are described. Moos and Lemke (1985) have identified three main types of dimension of the social environment: relationships, personal growth and system maintenance and change. The dimensions that it was proposed to identify by means of an assessment of management routines and care practices were:

Relationships

- Integration: the degree to which the residents are integrated into the life of the home.
- Privacy: the degree to which residents are able to be separate from the community or "reserved" (Pastalan, 1978).

Personal Growth

- Stimulation: the degree to which residents are kept active and participating.
- Freedom: the degree to which residents are free to use the facilities of the home and leave the home
- Background: the degree to which staff in the home had information on the residents' life history and links that were maintained with the past.

System Maintenance and Change

- Planned care: the degree to which care plans or policies were thought through and discussed.
- Regimentation: the degree to which care tasks take place at the convenience of staff rather than the individual needs/desires of residents.
- Control: the degree to which residents had control over their lives

In Appendix 5 are shown the questions it was intended to use to assess each dimension. The individual items or questions included in the scales were selected on the basis of questions used in previous research where it was possible to identify

them (King et al 1971, Evans et al, 1981, Booth, 1985). The scales themselves had the disadvantage of being short in several cases. In addition to this, some items, arguably, could be appropriately included in more than one scale. For example, does freedom to use the grounds of the home reflect freedom, control, or both? In fact in one case the question appeared so pertinent to two scales that for the initial purpose of establishing whether any of the scales were to be used it was included on both. The item that identified whether personal histories were established was included as an indicator of both "planned care" and "background" which reflected continuity with the past.

It had been intended at the outset of the study that the scales should not be definitive, but would be used rather as an initial basis for further development. For example, one possibility envisaged was the combination of "freedom", "privacy" and "control" as a measure of "autonomy". By using such statistical analyses as confirmatory factor analysis and/or a full LISREL model the scales could be adapted and modified as appeared appropriate. In practice the matrix that resulted from including all the hypothesised variables proved not to be positive definite, probably resulting from a high level of collinearity in the data set. As the following discussion will show the variables proved an unsuitable basis for deriving scales, so this approach was not pursued further.

In computing the originally hypothesised scales, the items were converted into bivariate variables from the questionnaire codes, to give item each equal weighting. This assumption was made in the absence of any theoretical reasons for any item assuming particular importance. Once the assessments were made for each home and sample resident, the scales were examined for evidence of validity and reliability.

7.2 Validity and Reliability

Lack of any real evidence of reliability or validity was, in fact, the major difficulty with the proposed measures of regime. The scales were devised to have face validity in that the questions appeared to relate to the dimension of regime or practice it

was intended to assess. Moreover, one of the purposes of the pilot study, described in Appendix 2, was to demonstrate a degree of construct validity, that is identifying that a scale can clearly differentiate between different groups (Hamilton, 1974). At the pilot stage the results for the most part appeared encouraging and the method was applied in the main study. It was at this point that more serious doubts were raised with regard to the usefulness of these scales.

A number of questions proved to be unreliable indicators of the items they were intended to establish. In some cases this was because problems identified at the pilot stage were not satisfactorily resolved in the full scale study. For example, in the pilot study the level of control that even alert residents had over their financial affairs was found to be so limited in all the homes that the item did not pick up any variation. It was decided, therefore, in the full study to concentrate upon the use made of pocket money. It was unclear from responses to this item, however, whether residents were simply given money to hold or whether they could, in fact, exert any financial control. In some cases it appeared that, although residents held money, they were never given the opportunity to spend it. The element of "control", which was the purpose of the item, was not satisfactorily established. There were also difficulties with definitions and inappropriate prompts for several items. The specific questions and the problems raised are detailed in Appendix 5.

Certain items occurred extremely rarely or never. Their inclusion in any scale diminishes its reliability or has no effect at all (Hamilton, 1974). The variables concerned are identified in Appendix 5. The invariance, while diminishing the usefulness of the item from the point of view of constructing a scale, is of interest in its own right and these items are discussed further in section 7.2.

It is a desired property of scales that they should cover the range of the variables it is hoped to assess (Hamilton, 1974). These scales, therefore, should include a number of items that identify the different ways that the underlying construct (such

as "privacy") would be expected to be reflected in the policies and practices of the homes. This looks extremely dubious once all the items identified as having the problems described above are omitted. Indeed, in the case of "regimentation" for sample residents the scale is reduced to one question.

It was originally hypothesised that the sample residents may in fact experience a different regime to the one described by the officer-in-charge for the home overall. However, some relationship between the regime of the home and the experience of the individual would be expected so the correlation between the scales for residents and home overall should give an indication of concurrent validity. Table 7.1 shows the correlations between the devised scales. There is no evidence that the indicators of integration, freedom and regimentation are identifying the same aspect of the environment. Although the correlations between most of the scales for are significant using a one-tail test ($p < .05$) the associations are low. With more confidence in the individual items in the scales this might have been taken as evidence of the type of resident identified in the sample experiencing a different environment to that described for the homes as a whole. In the absence of this confidence, there is little evidence that the scales are measuring the same variables. The exception is the measures of "stimulation" which are discussed in section 7.2.2.

By the time these issues had all been examined, confidence in the reliability and validity of most of the scales themselves was considerably diminished. It had been anticipated that residents with senile dementia might be allowed less freedom, privacy and control than was the norm in the homes (see chapter 4). It would still be expected, however, that the less restrictive a home was generally, the more freedom and control would be allowed demented residents, in comparison with similar residents in more restrictive homes. In practice, the correlation between the home scale for freedom and the individual resident scale was very low (.02).

Where no reliability problems have been raised in the field, the policy and practice items for the sample residents do give useful indications of individual residents'

experience of the homes caring regimes. These were incorporated, therefore, into the analysis of the effects of the environment on the demented residents (see chapter 10).

Table 7.1 Correlations between Regime measures

Home Regime Scale	Correlation with Resident Scale
Integration	-.03 ns
Privacy	.22 **
Stimulation	.67 ***
Freedom	.02 ns
Background	.28 ***
Planned Care	.10 ns
Regimentation	.27 ***
Control	.22 **

Significance levels for one tail test assuming a positive relationship:

ns p > .1
 * p < .1
 ** p < .05
 *** p < .01

The low level of correlation between the scales at the individual and home level is of interest in itself. One way to investigate this further is to examine the individual items and how the responses of senior staff in general terms about the home relate to the perceived individual practice with this particular client group.

7.3 Results

The original hypothesised dimensions are used as a framework in which to discuss the responses to the items at the individual resident level and to contrast these, where appropriate, with responses given for the home as a whole. In discussing the results it is of interest to compare the findings with those of other studies of

residential care for elderly people. Booth's study (1985) in particular provides a number of common points for comparison.

7.3.1 Relationships

In using management and care practices to assess relationships in the home, the measures should reflect how well demented residents as a whole and individual sample residents are integrated into the home community. There is also a need to assess the positive side of being separate from that community, reflected in the degree of privacy allowed.

i) Integration

The measurement of the degree of integration of residents into the home community proved difficult to establish in practice. It was anticipated that in some homes the more confused residents might be rejected by other residents and segregated by staff. The "individual experience" of such an atmosphere would be isolation and lack of friendships within the home. However, in practice the items relating to the segregation of the more confused residents proved inapplicable in group-living homes and hard to establish in specialist homes. The situations were so different that the items did not reflect those variations in the underlying dimension it had been hoped to capture. With hindsight it would appear that the SCES scale of cohesion was the type of variable envisaged. It is of interest, however, to examine the individual items across comparable homes

In only one of the seven non-specialist homes, five of which were designed for communal living, was there a lounge used primarily by confused residents. In only two of these homes did most of the demented residents eat separately to the alert residents. However, when asked about the attitude of the alert residents to the confused, alert residents were reported as "accepting" in none of the homes. In two of the homes they appeared to tolerate the confused residents but in four they were rejecting and in one openly antagonistic.

Wilkin (1986), in discussing the results of previous research (Evans et al, 1981), suggested that the attitude of alert residents to demented residents in non-specialist homes is dependent, in part, upon the proportion of residents who are confused. The study home in which alert residents were openly antagonistic had only 5% of residents moderately or severely confused. Of the two "tolerant" homes, one had approximately 5% demented residents and the other 41%. In the remaining non-specialist homes 20% of residents were assessed as moderately or severely confused. There appeared to be no relationship, therefore, in this study, between the attitudes of the alert residents and the proportion of residents who were demented.

On an individual resident level, staff were asked whether each sample resident had a special friend among the other residents, or a special relationship with any member of staff. 36% of the sample had a particular resident or couple of other residents with whom they associated on a regular basis. Respondents were often doubtful, however, about the quality of this relationship. If the relationship was of significance to the residents it would be expected that the death or departure of the friend would have a noticeable impact upon them. In the six cases where this occurred during the six month period of the study, staff reported no obvious reactions to the absence of the friend.

Friendships with staff were reported less frequently, 27% of the sample residents were reported as having a "special" relationship with a member of staff. It was more often reported that the resident "got on" with everybody. Again there was some doubt about what form the "special" relationships with staff took. In some homes there was an automatic assumption that, if the resident had a key worker, they had a special relationship with that member of staff. In such cases it was established as far as possible whether this relationship did seem to mean something to the resident concerned.

Although not a specific hypothesis, the converse was also considered and it was asked whether the sample residents had particular enemies among the other residents or the staff. A poor relationship with one or more of the other residents was reported in only 15 cases. Bad relationships with members of staff appeared to occur even less frequently. Only 6% of residents were reported to be actively antagonistic to one or more particular members of staff.

ii) Privacy

In six of the homes there were facilities for receiving visitors in private. Bedrooms were used in all the other homes. 61% of residents had single rooms and only 9% shared with more than one other resident. Only in five cases did residents share a bedroom in a home that did not have specific facilities to allow them to receive visitors in private. Opportunities for privacy in this respect, therefore, were widespread. However other aspects of privacy were less well catered for.

Booth found that only about a quarter of homes for elderly people had facilities for allowing residents to lock their rooms. Even where there were facilities, few residents were allowed to hold keys. In the present study, only one of the homes, Chaucer Place, had any lockable bedrooms. In this home four of the ten sample residents were allowed to lock their rooms. It is interesting to note that the only home that catered for this level of privacy was a specialist home and that, in the context of Booth's finding, a relatively high proportion of the sample residents were able to lock their doors.

In Booth's study 25% of homes provided residents with a lockable drawer or cupboard. An equivalent number (3) of the study homes allowed the majority of residents a locker of some sort. However, only 19 of the sample residents overall were actually allowed such a facility.

Using information collected from senior staff it proved difficult to establish in practice the relationship dimensions of the social environment. This was primarily

due to the difficulty of identifying items that applied usefully across homes. Once items that were found to be unreliable were excluded, the scale which was intended to reflect the social integration of the sample residents reduced to three items: friendships with other residents, friendships with staff and participation in communal activities. It was decided, therefore, to include in further analysis one dummy variable that identified whether the sample resident had any friendships among staff or residents. The extent of, and individual experience of, activities were considered as personal growth dimensions.

In constructing the short scale to reflect "privacy", it was decided to include an aspect of the physical environment: that of whether residents had single bedrooms. This is also considered an indicator of territory for the residents (see chapter 9). It is appropriate, therefore, to consider the effects, if any, of such an item separately on the residents. When put in the context of other results it may then be possible to identify if this should appropriately be included in an indicator of privacy for demented residents. The remaining two items cannot be regarded as a scale, so, in the context of the low number of residents who were able to lock their rooms, it was decided just to include the item that recorded whether a resident had a locker or lockable drawer in further analysis.

7.3.2 Personal Growth

The level of stimulation the residents receive is hypothesised to be among the care practices that will encourage personal growth. Both communal activities provided by the home, and individual "rates" of activity, will give an indication of the level of stimulation. The degree of freedom that residents are allowed is also represented as an important element of personal growth. Continuity with the past is hypothesised to provide a pre-requisite to personal growth for people with the specific difficulties resulting from senile dementia.

i) Stimulation

In Appendix 5 tables A5.2 and A5.3 show the reported rates of activities organised at a home level and experienced at an individual level. In the homes as a whole, the most frequently organised types of activity are group therapy, clubs, and live entertainment by staff. There was a good deal of variation between the level of activities in homes; from one home that had 48 activities each month (including a daily group therapy session) to a home that had less than one activity each month. It was interesting to note that the high correlation between organised activities and the proportion of confused residents in the home found in the Cheshire study (Kimbell et al, 1974), was also found in these 13 homes. There was a correlation coefficient of .63 between the proportion confused and the monthly rate of activity. This was reflected to some extent in the difference between specialist and non-specialist homes. Specialist homes had a higher rate of organised activity (19.1 per month) compared to non-specialist (11.3 per month) but the difference was not statistically significant ($p=.30$).

Table 7.2 shows that, as would be expected, when the activities organised and participated in are translated into monthly "rates" there is a high level of correlation between the amount the home organizes and the amount the resident experiences. The individual rate of activity excluded reading and watching television that were reported most frequently as there was often doubt that the resident was registering the television or reading material. Table 7.2 shows a summary of the number of residents who participate and the average monthly frequency by type of activity.

Residents in specialist homes tended to do more things more frequently. The average monthly rate of activity among sample residents was 11.8 in non-specialist homes and 17.2 in specialist homes ($p<.1$). There were more clubs in non-specialist homes, and more group therapy in specialist homes. On average the 15 sample residents who attended group therapy in specialist homes participated 20.9 times per month. The seven residents in non-specialist homes attended group therapy 7.8 times each month

($p < .05$). Home clubs were attended by 18 residents in all, approximately once each week. The seven residents in specialist homes who attended home clubs did so only once each month on average.

Table 7.2 Activity Rates

	Participating Residents	
	Number of Residents (104)	Average Monthly Rate (14.6*)
<u>Group based activities</u>		
Home outings	81	0.3
Church service in home	45	2.0
Music and movement/dance	33	3.4
Day outings	30	1.2
Other PE	32	4.4
Group therapy	22	16.8
Home clubs	18	3.5
Church	12	1.6
Outside clubs	6	5.4
<u>Individual activities</u>		
Hairdressing	94	1.7
Watching TV	80	24.9
Reading	41	22.8
Sewing/knitting	18	11.4
Playing cards/games	18	3.4
Craftwork	10	3.0
Jigsaws	6	2.8
House plants	5	2.6
Gardening	2	2.0

* Average rate of participation in any activity excluding watching TV and reading.

Church services in the home were more frequently attended by a higher proportion of residents in non-specialist homes. The average frequency with which the 27 sample residents in non-specialist homes attended was 2.5 times per month compared with 1.2 occasions per month among the 18 sample residents who attended in specialist homes ($p < .01$).

The activity which was most regular for most residents was hairdressing. This occurred fortnightly, on average, for 94 of the residents. This usually involved a professional hairdresser visiting the home and took place in a room designed for the purpose. It was included as an activity, rather than a personal care task, therefore, because it involved physical and personal contact in a social rather than a personal care setting.

Physical activity was catered for by most homes. In specialist homes this tended to take the form of music and movement or dance. In non-specialist homes physical activity was usually described as "PE".

There was a generally low level of individual activity among the sample residents. As mentioned earlier, "reading" and "watching TV" were rather dubious categories. Only 18 residents sewed or knitted on a regular basis, 10 did any craftwork and just two residents did any gardening.

Unlike other areas of investigation into the assessment of how home policies translated into practice for individual residents, it was felt that the assessment of the monthly rate of stimulation or activity was reasonably successful. While no substitute for an observational study, the measures did appear to be identifying variations between the homes in the levels of activity and involvement. The measures had both face and concurrent validity in the degree to which they validated each other. It was decided, therefore, to include them in further analysis.

ii) Freedom

Only one home (Viking Lodge) reported that residents were not allowed in their rooms for any part of the day. However, in practice, none of the sample residents in this home were restricted at all in their use of their bedroom. In fact one resident rarely left it. This is an example where the irrelevance of the home policies to this type of resident results in more rather than less freedom. In the other homes, however, where, officially, no restrictions on the use of bedrooms

prevailed, five of the sample residents were not allowed to use their bedroom during the day. This reflected the more general case, that the concerns of care staff about demented residents' behaviour resulted in more, rather than less, restrictions. Similarly, only three residents in the whole sample were restricted from using any of the communal areas in the homes. The one home that reported that there were restrictions on use of communal space, imposed no restrictions on two of the three sample residents in the home.

All homes reported that residents were normally allowed free access to the grounds. This reflected Booth's finding that 94% of homes allowed free use of the grounds. However, only 27% of the sample were allowed outside unaccompanied in practice. Although all the homes had gardens, only 4 of the 13 homes had an outside area that was enclosed and secure. The lack of a secure area may result in unnecessary restrictions on "confused" residents because of staff concerns that they might "wander off" and get lost.

General restrictions on leaving the home unsupervised were confined to five of the homes, all specialist. In practice, however, few of the sample residents were allowed to leave the home freely. Of the six residents who did leave the home unsupervised, four were from homes that specifically did not allow residents to leave the home unaccompanied. This provides another example of how the normal rules are often found inapplicable to some demented residents.

It is clear from these items that information collected about home rules and practices have little relevance in practice to the experience of residents who have senile dementia. The level of freedom allowed these residents will depend primarily on perceptions about the residents' competence. How competent residents are perceived to be will depend both on residents' abilities and on the approach of the home.

iii) Background

Retention of the same GP was included as evidence of continuity of health care and a link with the past. In fact whether or not residents keep their own GP tends to reflect the type of home - specialist or non-specialist. In all of the six specialist homes less than 25% of residents were estimated to have retained their own GP. Home policy was reflected in the individual experience of the demented residents: of the sample residents in homes where most residents changed their GP, only 10% still had the same GP. In homes where about 50% or more were estimated to have kept their GP, 58% of the sample had done so. This may go some way to account for the fact that "background" was one of the variables which showed a correlation between the scales for the home and the sample residents (see table 7.1).

Personal possessions acquired over a lifetime form another link with the past, and staff were asked whether residents were allowed to bring in items of furniture. In eight of the homes they were allowed to bring in any items that could be fitted in. This restriction that meant very little furniture brought in by residents was actually in evidence due to spatial limitation (see chapter 9 for further discussion).

The only links with background that could be measured on an individual level were in terms of personal relationships. The majority of residents (64%) had visitors at least once each month. Very few went out with relatives or friends - only 11% went out with relatives at least once a month. Holidays and weekends away were even more rare - only 3% of the residents ever went away.

From this assessment there appeared no reason to reject the method adopted to assess the level of stimulation the home environment provided, and the individual experienced. The indicators of freedom, on the other hand, did not vary sufficiently, for the most part, to form an adequate scale. Only an indicator of whether the individual resident was able to use the grounds of the home appeared to vary sufficiently to use in further analysis. The indicators of "background" also did not appear to provide a useful basis for a scale. Information that did exist

about the residents' background was sketchy and frequently did not appear to be widely available in the homes for staff to use in interpreting behaviour. The most important link with the residents' personal history are their visitors. Frequency of visiting provides the most concrete way of measuring the links that the resident still has, both with their past and with the community outside the home.

7.3.3 System Maintenance and Change

A residential community necessarily requires a level of control and regulation to maintain the running of the home and to introduce and implement changes in the system. This can have both a positive and negative effect. On the positive side planned care can provide a degree of monitoring and response to changes in individual residents' needs that would be impossible in the community. On the negative side caring for a large number of people with disabilities can lead to regimentation of care practices and a lack of response to individual needs. An important element is the level of control the resident is allowed over his or her own life. This may require fine judgement given the nature of the disabilities associated with senile dementia.

i) Planned Care

In eleven of the homes residents normally had a pre-admission visit. In the other two this was rare in practice, however desirable in theory. Of the sample residents, for whom there was information, three quarters had a pre-admission visit. In seven cases the resident had been in the home for so long that this information was not available.

Only for ten of the sample residents was there no care plan, policy or general idea to guide care staff. But four of these residents were in a home that claimed to have a formal care plan for all residents! 16 residents in all had formal plans and 40 a specific policy. Frequently the latter appeared to have grown up from a pragmatic assessment by care staff of the approach that worked best, rather than any coherent policy with expressed aims.

ii) Regimentation

The regimentation scale was an attempt to measure the degree to which the personal care tasks, in particular, were geared to the convenience of staff rather than the individual residents. On this basis "block toileting", that is regular toileting all residents who need this at the same time rather than individual timetables, was an appropriate question at home level but not on an individual resident level. On an individual level toileting may be geared to the staff or residents' convenience but an observation approach would be needed to determine this reliably. In eight of the homes block toileting was reported. Overall, 85% of the sample residents who were incontinent were toiletted regularly.

In Booth's study 28% of the homes reported that "getting up" policy depended on the type of resident. In this study ten homes reported that set getting up times and bathing times being determined by staff were the norm. In practice, all of the sample residents were got up and bathed at times determined by staff. No-one had the choice over who would bathe them either, although attempts were made to use key workers whenever possible.

Only one home reported that all or most residents were taken to bed by a certain time. A third of the sample residents in the homes where bedtimes were not normally set by staff, however, were put to bed at times set by staff. In Booth's study 61% of the homes reported that whether a resident had a set bedtime depended upon the ability of the resident. It would seem from this investigation that the ability that was of prime importance among demented residents, was their facility at finding their way around the home. Using a measure described in Chapter 9, those residents who had a set bedtime scored significantly lower ($p < .01$) on their ability to find their way around (2.4), compared with those who went to bed when they chose (6.2).

In table 7.1 it appeared that the "regimentation" scales were significantly correlated ($p < .01$). However, in effect, the lack of variation in three of the four items of the individual scale meant that the one item correlated to the composite home scale was whether the residents were put to bed at times set by staff. As a measure of concurrent validity this leaves a lot to be desired!

iii) Control

One of the items chosen to reflect the degree of control residents had over their lives was the existence of a residents' committee. Only one home had a committee although two others reported having tried this in the past. Many restrictions which are frequently associated with institutional life affect aspects of daily living that it is taken for granted the individual will have control over when living in his or her own home. Choice over when or what to eat, for example, or freedom to use the telephone; to choose when and whom to ring. Only two of the homes allowed a regular choice of menu. Eleven of the homes had a pay telephone available for residents, but none had extensions in the residents' bedrooms. It was noticeable that while care may have been taken to install a telephone at such a height that it could be used by a person in a wheelchair, the telephones were often located in very public places, restricting the possibility of having a private conversation.

In all the homes residents were allowed to choose new clothes as a general rule. This was true in 92% of Booth's homes. However, in practice, 29% of the sample residents had new clothes chosen for them. In terms of choosing what to wear each day only in one, specialist, home was it not the normal practice for residents to choose. 35% of the residents in the homes where resident choice was the norm, however, were not able to choose in practice.

The measurement of the system maintenance and change dimensions encountered many of the difficulties experienced in identifying the other dimensions of the social environment: unreliability of items, invariance and a subsequent lack of sufficient items to constitute a scale. It was decided, therefore, to include in the

further analysis an indicator of the existence of a care plan or policy for sample residents as an indicator of the positive face of high organisation, planning. The only variable that appeared to reflect differences in individual personal care practices was whether the resident went to bed at a time set by staff. Choice of daily clothing was also included in the further analysis as an indicator of the amount of control the resident was allowed over the activities of daily living.

7.4 Conclusion

Although the management and care practice items are of interest in themselves in describing the homes the main purpose in making the assessment in the context of the study was to establish measures of influences that affect the welfare of the demented residents. The hypothesised composite variables of integration, privacy, freedom, background, planned care, regimentation and control, encountered too many difficulties in their application to be used reliably. Rather than using the hypothesised regime scales at an individual level or devising new scales, the most useful way forward would seem to be to include the more reliable individual items in an exploratory analysis. If any proved to be included on this basis then direction of influence may permit the formulation of hypotheses with regard to both the direct influence of these and underlying aspects of regime.

The indicators of stimulation were the exception to this rule. Generally the practical application of these appeared to work and a monthly reported rate of activity will give some indication of the home atmosphere - it is often hard to avoid "entertainment by staff" even if the resident should wish to do so! The "individual experience" of monthly involvement in activities will also give an indication of the level of stimulation which accrues directly to the resident.

CHAPTER 8
THE SOCIAL ENVIRONMENT
SOCIAL CLIMATE AND REGIME CLASSIFICATION

Introduction

In the preceding chapter one method of assessing the social environment of the homes was discussed. In this chapter the second method employed is described and developed. This was the Social Care Environment Scale (SCES) developed by Moos et al (1979).

The SCES forms a part of the Multiphasic Environmental Assessment Procedure (MEAP) developed by Moos and Lemke (1984). This is a set of instruments designed to measure various aspects of the environment of sheltered care settings: the physical and architectural resources, policy and programme resources, resident and staff resources as well as the social climate resources assessed by the SCES. This has been developed over a number of years and normative data exists for a wide range of facilities in the USA (Moos and Lemke, 1984). The SCES is divided into seven sub-scales which are intended to reflect different dimensions of the social climate. These relate to relationships, personal growth and system maintenance and change. The sub-scales are described in table 8.1.

This chapter describes the use of the SCES in assessing the social climate of the homes and the results are compared to US normative data. One of the hypotheses underlying the study is that a demented resident's experience of the social climate might be different to that of an alert resident. A method of assessing the variations of social climate within the homes is described. The SCES sub-scales also are used to provide a classification of regimes.

Table 8.1 Sheltered Care Environment Scale (SCES)

Sub-scale Descriptions and Item Examples

<u>Relationship Dimensions</u>	
1. <u>Cohesion</u>	- measures how helpful and supportive staff members are towards residents and how involved and supportive residents are with each other. (Do residents get a lot of individual attention?)
2. <u>Conflict</u>	- measures the extent to which residents express anger and are critical of each other and of the facility. (Do residents ever start arguments?)
<u>Personal Growth Dimensions</u>	
3. <u>Independence</u>	- assesses how self-sufficient residents are encouraged to be in their personal affairs and how much responsibility and self-direction they are encouraged to exercise. (Do residents sometimes take charge of activities?)
4. <u>Self-Exploration</u>	- measures the extent to which the residents are encouraged to express their feelings and concerns openly. (Are personal problems openly talked about?)
<u>System Maintenance and Change Dimensions</u>	
5. <u>Organisation</u>	- assesses how important order and organisation are in the facility, the extent to which residents know what to expect in their day-to-day routine, and the clarity of rules and procedures. (Are activities for residents carefully planned?)
6. <u>Resident Influence</u>	- measures the extent to which the residents can influence the rules and policies of the facility and the degree to which the staff direct the residents through regulations (Are suggestions made by the residents acted upon?)
7. <u>Physical Comfort</u>	- taps the extent to which comfort, privacy, pleasant decor and sensory satisfaction are provided by the physical environment. (Can residents have privacy whenever they want?)

(c) Moos and Lemke (1984)

8.1 Methodology

The SCES can be assessed by staff, residents, or both, for any given facility. There is provision for the assessment to reflect the "ideal" institution, the "expected" or the actual experience. Each sub-scale is scored as a percentage of responses to nine

bivariate items. The staff questionnaire (form D in Appendix 1) lists the individual items.

For the purposes of the present study the scale was used to measure the staff assessment of the current social climate in the home. In order to minimise variation that might result from the different perspective that domestic staff would have on the home, only care and supervisory staff were included. To provide a full picture of the social climate of the home as it affects the residents, the SCES assessment should also be completed by the residents. Given that the focus of the study is demented residents, this causes a number of difficulties.

If demented residents were to complete the questionnaire, there would be problems of reliability. The memory failings associated with senile dementia are such that the validity of responses would be questionable. The questionnaire itself is quite long (63 questions) and many residents would be unlikely to complete it. If the views of alert residents were sought, there might be no suitable respondents in specialist homes. Moreover, the model predicts that, because of differences in "competences", the social climate experienced by demented residents might be very different from that experienced by alert residents.

8.1.1 Estimating Variations in Social Climate

In assessing variations in social climate within the homes, use was made of results of investigations into the validity and reliability of the SCES. An investigation into the effect of individual characteristics of staff on the assessments that they made found that such characteristics as sex and age added at most 4% to the variance of individual SCES scores (Lemke and Moos, 1987). In addition, split half reliabilities, using US data, had indicated that only five staff assessments were needed for a home (Moos and Lemke 1984). It was decided, therefore, that not all the staff were required to make an assessment of the social climate of the home as a whole. Some staff could consider specific groups of residents and thus provide a picture of the variation of social climate within the homes.

In the group-living homes each member of staff was asked to consider either a group from which sample residents had been selected, or the whole home, in considering their replies. The assignment was not random unless there was a specific request to make it so. Ordinarily, to obtain the most informed assessments possible, the members of staff most familiar with a selected group were asked to assess that group.

At the pilot stage two homes were assessed, one designed for group-living and one run on a communal basis. The officer-in-charge of the group home was asked to assess the resulting sub-scale scores. As part of this assessment, she was asked to judge whether the average of the group scores, or the scores based on assessments of the home as a whole, more accurately reflected the social climate of the home. The average of the group scores was considered less successful in identifying the overall social climate than the scores of the assessors who were considering the whole home.

Where homes were not organised on a group basis an attempt was made to see if there was an identifiable sub-population of demented residents amongst whom there was a different social climate. Some staff were asked to consider the demented residents of the home when replying to the questionnaire. Two of the communal homes were specialist so the division was inappropriate, and one officer-in-charge maintained that it was not possible to divide up the residents in that way and to ask staff to do so was unrealistic. In the latter home, the officer-in-charge considered there was no sub-population because the demented residents were well integrated and relatively few in number.

In order to try to reflect the variations of social climate that might exist within homes, therefore, staff members were asked to consider the home as a whole, or a specific group in the home or demented residents as a group in the home. Appendix 6 shows the distribution of responses of the care staff, by home and group of

residents, where appropriate. Only in one case did the number of staff responding fall below five. This was due to trade union objections to the exercise and was for the "whole home" category for Victoria House.

8.2 Validity and Reliability

The reliability and validity of the scales have been examined in some depth for facilities in the USA. The sub-scales were examined for internal consistency and stability and were considered to have scored generally very well although tests over a year indicated that the scales were sensitive to changes over time (Moos and Lemke, 1984, 1987). This finding was supported in the present study by the discovery of a "stressed" home. The scores on several of the sub-scales for this home (Viking Lodge) were significantly different to the other homes in the study (see diagram 8.2) and the officer-in-charge left during the following six months. This result is discussed further in section 8.4.1.

With the extensive background in validity and reliability testing in the USA context, the principal question remaining is whether the results hold for UK homes. One drawback to using scales that have been designed in the USA, is that the way of expressing the questions might be awkward for English respondents and that there may be a differences in interpretation of some questions. In an early stage of development of the scales Moos (1972) compared 36 UK psychiatric wards with previous research on similar facilities in the USA. He found that the psychometric characteristics of the scales were virtually identical for patients and staff in both countries.

No obvious problems were raised in the present study,. At the pilot stage, the officer-in-charge of the group-living home was familiar with both homes, having stayed in the other for a period. She considered that the scales when assessed on the basis of the whole home provided an accurate picture of the social climate of the two homes.

Table 8.2 shows the average scores for each sub-scale for those staff who were assessing "the home as a whole" in the study, compared to the USA normative data. The method used to try to assess variations of social climate within the homes resulted in relatively few assessments of any one home or group of residents. Scope for any assessment of internal consistency or convergent validity was therefore limited. However, the sub-scales for the UK study homes had higher standard deviations than the normative data, which might indicate lower internal consistency.

In assessing discriminant validity, whether the sub-scales appear to be measuring different aspects of the social climate, table A6.2 in Appendix 6 shows the sub-scale partial correlations for both the USA normative sample and the study homes. In the USA the correlations were greater than .5 in four cases and averaged .26. In the study homes six correlations exceeded .5 and the average partial correlation was .29. "Self-exploration" appeared to be more highly correlated with other scales in the study sample than in the normative data. However, in the study homes there were lower associations between physical comfort and the other sub-scales. The interpretation put on the USA results was that the average correlations between the sub-scales were moderate and indicated that the SCES dimensions tapped separate, but interrelated, aspects of the social climate of the facility. This would also appear to apply to the study home results. However, there is certainly scope for future analysis of the appropriateness of the dimensions identified to the social climates that prevail in UK homes.

Although it is never possible to be completely confident of the validity and reliability of this type of scale the SCES offers another dimension to the assessment of the environment. The method used to assess the scale collects information from a number of members of care and supervisory staff. In the absence of this assessment the only source of information, other than some limited direct observation and interviews with sample residents, was from senior members of staff only. In some cases this resulted in a single perspective on the home. The SCES scales,

therefore, provided a more widely based assessment, although this was still confined to the care and supervisory staff.

8.3 Results

8.3.1 USA Normative Data

In comparing the results with the USA normative data, the first task that needed to be addressed was to identify the type of American facility which would provide the most appropriate comparison with UK homes for the elderly. The normative data was based on a number of different types of facility. Of these, the nursing homes (127 facilities) and residential care establishments (55 facilities) appeared to be most closely related to homes for elderly people in this country. These have therefore and been used as a basis for comparison with the study data in table 8.2.

UK homes are smaller on average than both nursing and residential establishments in the USA and the residents of the study homes were both older and more likely to be female on average. Resident dependency was established in MEAP on the basis of a percentage score of functional abilities. For all those tasks for which it was possible, nine out of 11, a score was assessed for the study homes. This was 61%, compared to 38% for nursing homes and 77% on average for residential facilities. It seemed, therefore, that the abilities of the residents in the study homes lay somewhere between the two types of facility.

Ideally, in comparing the social climate of the study homes as a whole with that of American facilities, Hotellings T should be used to test the difference between the multivariate means. However, in the absence of the variance-covariance matrix for the American facilities, this was not possible. It was possible, however, to compare the individual sub-scales.

The social climate in the UK study homes appeared to lie closer to the nursing homes, although even here there were significant differences in the average sub-scale scores. Table 8.2 shows that the average scores for the study homes were

higher on "conflict" and "resident influence", and lower on "cohesion", "independence" and "organisation" than the nursing homes. These differences were all found to be statistically significant using the t test ($p < .05$).

Table 8.2 SCES Data Comparison with US homes

(n = No. of facilities)	USA					
	Study Homes (13)	Residential Care (55)	Nursing Homes (127)			
<u>Facility Characteristics</u>						
Size (average no. of residents)	40	74	107			
No. of staff per 100 residents	51*	42	71			
% female staff	96	76	88			
% staff employed > 1 year	82	68	54			
<u>Resident Characteristics</u>						
Average age	84	78	78			
% women	81	66	67			
% residents > 1 year	66	70	60			
<u>SCES Scales</u>						
(N = No. of staff)	Study Homes (121)		US Res Care (366)		US N.Homes (2042)	
	Mean	SD	Mean	SD	Mean	SD
Cohesion	52	28	75	14	69	11
Conflict	76	17	49	20	64	12
Independence	26	20	55	15	53	9
Self-exploration	65	22	60	15	63	10
Organisation	53	26	73	14	60	12
Resident influence	71	21	60	16	60	9
Physical comfort	67	13	80	12	67	12

* This includes all full time staff as there was no clear definition in MEAP manual (Moos & Lemke, 1984)

The average score for "self-exploration" in the study homes was closer to the nursing homes average although the difference was still statistically significant ($t=1.94$, $p<.1$). The scores for "physical comfort" however, were identical. A similar pattern emerged in the comparison between USA residential care facilities and the study homes. These were significant ($p<.05$) for all the SCES sub-scales.

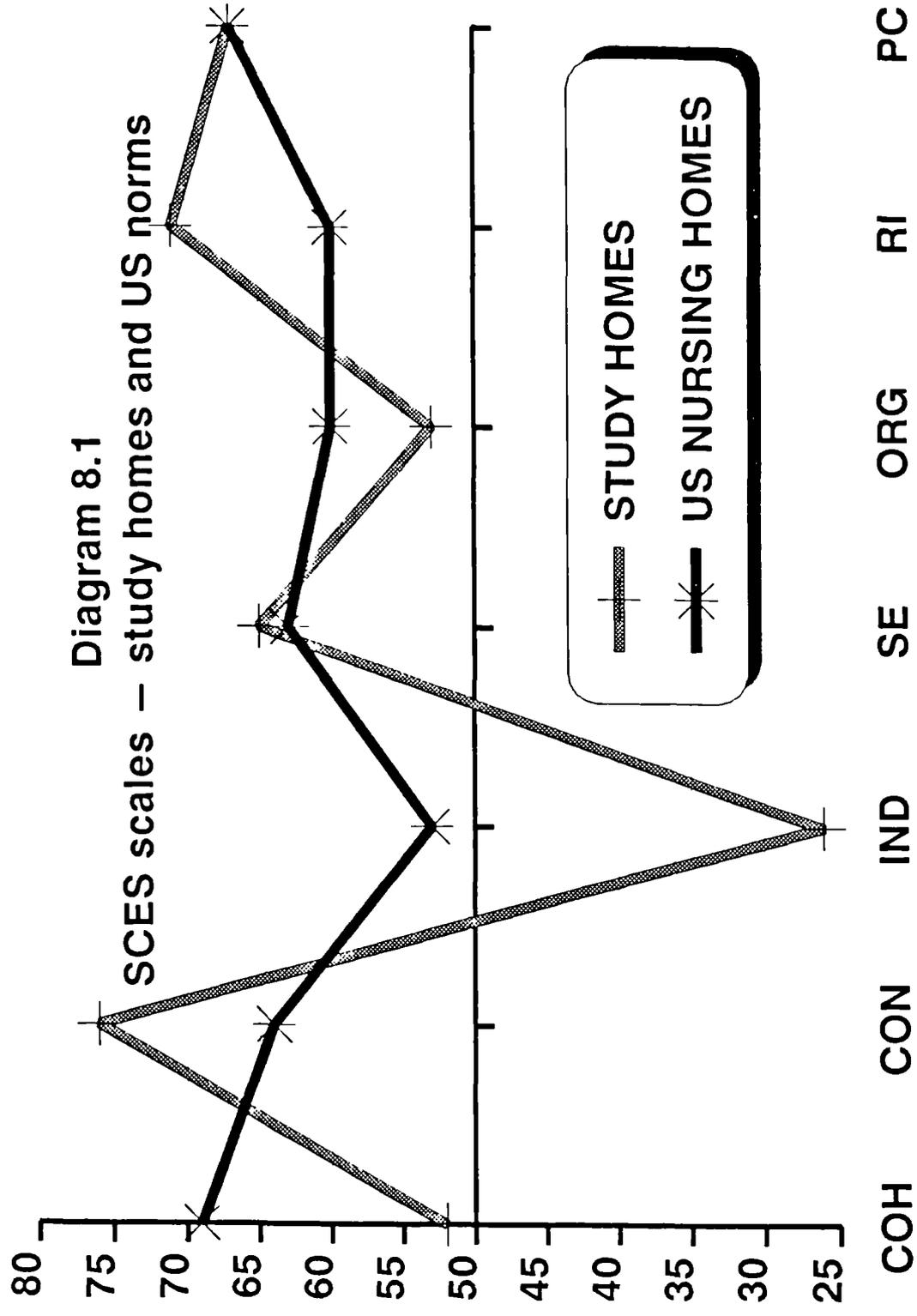
Moos and Lemke (1984) use the home "profile" to enable comparison between facilities and different assessments, such as the staff and resident view of the same facility. In addition to a direct comparison of the values of the sub-scales, this diagrammatic method (see diagram 8.1) allows a comparison of the relationships of the sub-scales.

It is interesting to note the very different profiles of the USA nursing homes and the UK study homes in diagram 8.1. It may be that the lower levels of organisation and higher levels of resident influence result in residents feeling freer to express their emotions and this results in higher conflict in the study homes. What appears of more concern, however, is the lower level of "independence", especially given the fact that, in the nursing homes at least, a more dependent population is concerned. This may partly reflect the staffing situation: in the nursing homes where the residents are more dependent there is a far higher staff to resident ratio. In the residential homes, where there is a lower staff to resident ratio, the functional abilities of the residents are much higher. It may also reflect the characteristics of the residents themselves: the average age of residents in the study homes was higher and there was a higher proportion of women than in the American facilities.

8.3.2 Variations in Social Climate within Homes

Booth (1985) drew attention to the multiplicity of regimes and variation between policy and practice that exists within homes. It was hoped to reflect how this variation would directly impact upon sample residents by asking staff to consider different groups of residents within the homes. The type of group that was identified depended on the type of home: whether specialist or non-specialist and whether designed for group or communal living.

Diagram 8.1
 SCES scales – study homes and US norms



i) Social Climate for Demented sub-populations

For the four homes where it was appropriate (non-specialist and communal) a group of staff were asked to consider particularly the confused residents when replying. Given the difficulties they posed, the aim was to see if the social climate was different to that which prevailed generally in the homes. There was no support for this theory. When the residents for all four homes were grouped into "confused" and "home as a whole" there was no significant difference on any of the scales (see table 8 3).

The homes were examined separately and again there appeared to be no evidence for a consistently different social climate for confused residents in non-specialised homes. It would appear, therefore, that the social climate of the home as a whole is a more appropriate measure to use as this was the method for which the instrument was designed. Although the confused residents might form a different sub-population in some homes and individual care practices might reflect this there was no evidence that this extended to a different social climate.

Table 8 3 SCES score for demented sub-population

(n)	Whole Home (32)	Demented Residents (35)
Cohesion	35.8	34.0
Conflict	71.0	77.3
Independence	17.5	16.2
Self-exploration	54.9	57.1
Organisation	51.0	47.1
Resident Influence	62.8	64.8
Physical Comfort	61.7	63.7

Four homes were included.

n refers to the number of staff questionnaires completed.

ii) Social climate in group homes

In order to assess the variation of the social climate within group homes, staff were asked to consider either a specific group or "the home as a whole" in replying to the questionnaire. The group assessments were more easily defined than the demented sub-population in communal homes, both in physical and organisational terms.

At the pilot stage the officer-in-charge of the group-living home considered that the scales did reflect differences in the character of the groups in her home. There were also some examples in the full study of homes where the social climate of the group did appear different, in some respects, to the home as a whole. For example, in Viking Lodge one group had a statistically significant ($p < .1$) higher level of "conflict" (90.7) compared to the other group assessed (63.0). This group appeared to affect the whole home as the "conflict" score for the home was 85.2. The level of "self-exploration" was also significantly higher in the group with the high level of "conflict" ($p < .1$). In one other home (the Laurels) the level of "conflict" also varied significantly. It appeared that in this home there was more conflict in the home as a whole (75.6) than in the individual groups measured (68.0 and 46.8). To establish whether this was due to the influence of a group not included in the study, or perhaps to some conflict between groups would need further investigation.

Generally, however, there did not appear to be much variation within group-living homes between groups in the study homes. There appeared to be very little work, or emphasis upon, forming a sense of group identity. Moreover, in several of the group-living homes staff were not allocated to a specific group but rotated between groups. This was in order to be "fair" to the staff, so no-one was constantly allocated to the group that generated the highest work-load. In such homes the emphasis would appear to be upon the needs of staff rather than those of the residents. Such practice and the absence of any policy of developing the groups

within the homes suggest that it is unlikely that the "family group" atmosphere intended (Korte, 1966) is likely to develop.

The evidence suggested that the SCES sub-scales were identifying variations in the social climate in group homes, where they occurred. Further work would be needed, however, to confirm this. For the purposes of the study, it was considered that when a resident came from a group, the SCES sub-scales of that group would be the most appropriate to include in further exploratory analysis.

While the internal variation in social climate appeared limited, the variation between homes, however was significant for all dimensions except "conflict" and "physical comfort". This did seem worth exploring in more detail and is discussed further in section 8.4.

8.4 Classification of Homes by Regime Type

The SCES scales provide useful indicators of individual aspects of the social climate and the "profiles" provide a method to compare types of facility. There is a need, however, for a more general description of the homes which can be used to classify them by regime type or social climate "profile". This should provide both a descriptive device and a tool in further analysis.

In describing types of regime it is useful to refer to three principal types of regime which have been identified: positive, mixed and restrictive (Booth, 1985). These were described as:

Positive: homes which tend to allow residents to do or decide things for themselves, leaving them a greater area of freedom of action and individual choice.

Mixed: homes with multiple regimes, opportunities for freedom and

choice in some areas and not others and those whose approach consistently fall between the other two groups.

Restrictive. homes that tend to adopt a narrow or restrictive view of residents' capabilities, limiting freedom of action and denying opportunities for deciding things for themselves.

If this basis for describing the regimes is to be used in a classification using the SCES sub-scales, the most important sub-scales to be clearly defined are those of independence and resident influence. With the exception of physical comfort, all the dimensions of the social climate were used to determine the clusters, however, as the sub-scales are interdependent and reflect other important aspects of the social climate

8 4.1 Methodology and Resulting Classification

Cluster analysis was used as a purely exploratory technique in identifying whether the SCES sub-scales based on assessments of the "home as a whole", could be used to determine the types of regime in the homes.

The clusters in table 8 4 were derived by a hierarchical, unweighted, pair-group method which used the squared Euclidean distance as a measure of average distance. Other methods were used to assess the stability of the groupings. In Appendix 6 the groupings which resulted using a non-hierarchical technique to estimate a pre-selected number of cluster centres, based on the values of the cluster variables. Ward's method and "City Block" also resulted in similar clusters.

Table 8.4 Cluster Analysis of Homes

The table identifies the grouping of the homes at each of the six stages of the cluster analysis.

1					
Viking Lodge Goldacre Airedale House The Copse Greendale Thayler House The Laurels Victoria House Centrelea	2				
	Pondlea Haddock Lodge Chaucer Place Westgate				
1	2	3			
Goldacre Airedale House The Copse Greendale Thayler House The Laurels Victoria House Centrelea	Pondlea Haddock Lodge Chaucer Place Westgate	Viking Lodge			
1	2	3	4		
Goldacre Airedale House The Copse Greendale Thayler House The Laurels Victoria House Centrelea	Pondlea Haddock Lodge Westgate	Viking Lodge	Chaucer Place		
1	2	3	4	5	
Goldacre The Copse Greendale Thayler House The Laurels Victoria House Centrelea	Pondlea Haddock Lodge Westgate	Viking Lodge	Chaucer Place	Airedale House	
1	2	3	4	5	6
Goldacre Thayler House	Pondlea Haddock Lodge Westgate	Viking Lodge	Chaucer Place	Airedale House	The Copse Greendale The Laurels Victoria House Centrelea

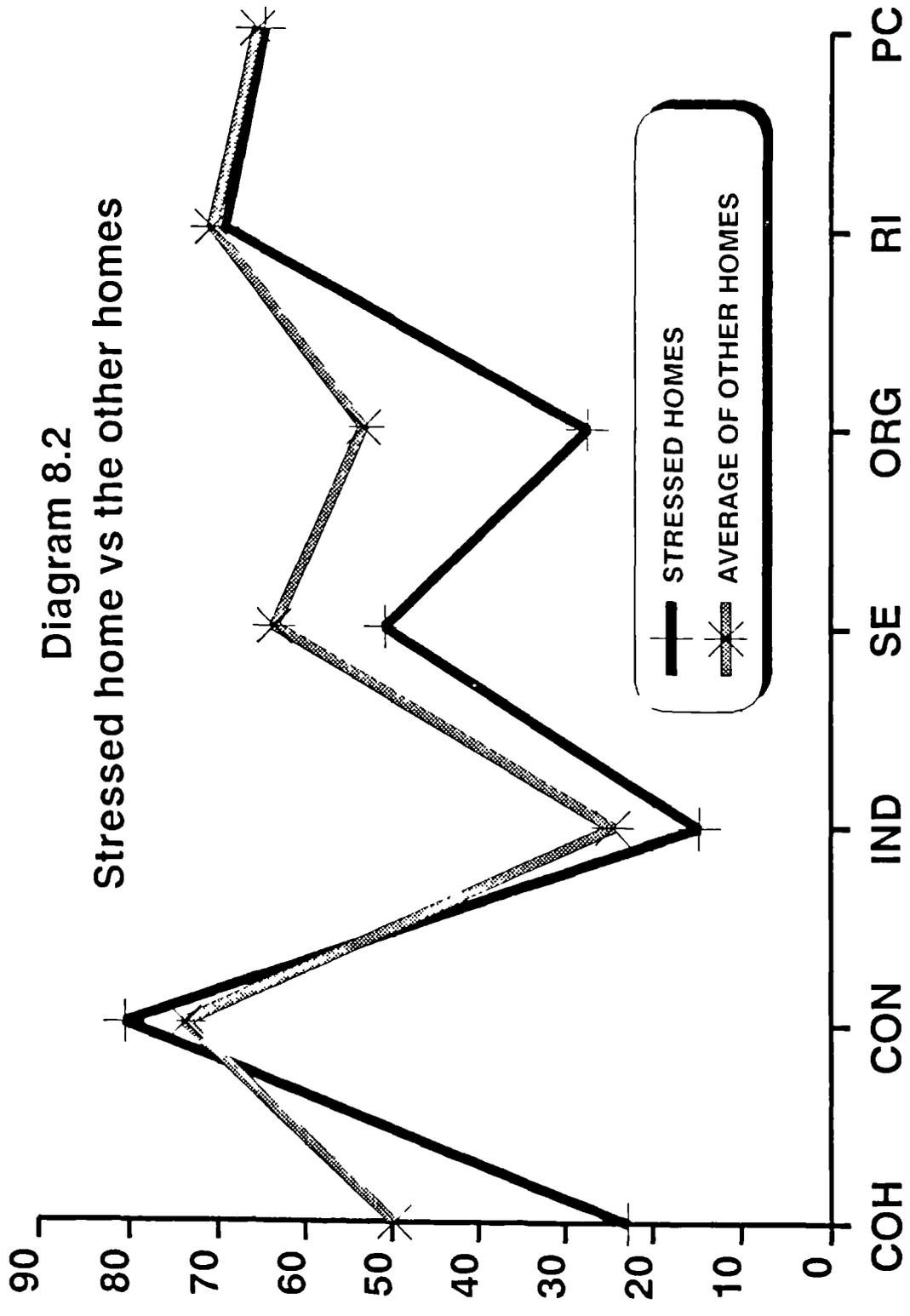
The clusters were examined when there were two to six clusters inclusive, to see if a pattern could be distinguished. The grouping of the homes at each stage is detailed in table 8.4. The initial division into two clusters appeared to divide the homes with positive regimes from 'the rest'. Subsequent clusters, however, did not quickly identify "restrictive" regimes. Initially, specific homes were identified as, in a sense, "outliers".

Viking Lodge formed a separate group once three clusters were identified. Diagram 8 2 shows the difference between the SCES "profile" of this home and the "profile" given by the average scores of the other homes. The Officer-in-Charge left this home during the six months following the assessment.

It was decided, therefore, that Viking Lodge was "stressed" at the time of the assessment. "Cohesion", "organisation", "self-exploration" and "independence" were significantly lower ($p < 0.05$) in this stressed home. Conflict was also higher than in the other homes although the difference was not statistically significant ($p = .11$). If there is a higher level of conflict in this home it may reflect a problem in one group (see section 8.3 2).

The separation of Chaucer Place, once four clusters were identified, into a separate group reflects a difference in the way this positive regime was generated. This home had a very devolved structure using key workers in the decision making process. Thus "organisation" was very much lower than in the other "positive" homes, where the personality of the officer-in-charge appeared to be working to motivate other staff in generating the positive, professional regimes. Although this is obviously of interest, it was felt that the type of regime, higher independence, resident influence, cohesion and so on, should be the principal divide, rather than how this was achieved.

Diagram 8.2
Stressed home vs the other homes



Once there were five clusters, one cluster consisted of Airedale House, which did not appear to have any "special" circumstances. This home was grouped with Goldacre when a non-hierarchical technique was used to derive six clusters (see Appendix 6). Using a hierarchical unweighted pair-group method, Goldacre was grouped with Thayler House at this stage (see table 8.4). In defining regime "types", the homes of Goldacre, Airedale House and Thayler House were grouped together, because the average scores for the sub-scales of independence and resident influence appeared to reflect the "restrictive" type of regime.

Chaucer Place was classified as "positive" with Pondlea, Haddock House and Westgate. The remaining homes were defined as "mixed". It was decided that the "stressed" home was most appropriately included in this "mixed" group as the special circumstances reflected in the measures of social climate best fitted the description of "multiple" regimes.

8.4.2 Description of Regime Groupings

In diagram 8.3 the homes are plotted by the SCES measures of "independence" and "resident influence". The "positive" homes are a well defined group in that both "independence" and "resident influence" scores are higher than for the other homes. Similarly, both dimensions have lower scores in the "restrictive" homes. The "mixed" homes do not form a clear separate group but occupy a broad middle range of scores.

Diagram 8.3
Home regime types by resident influence and independence

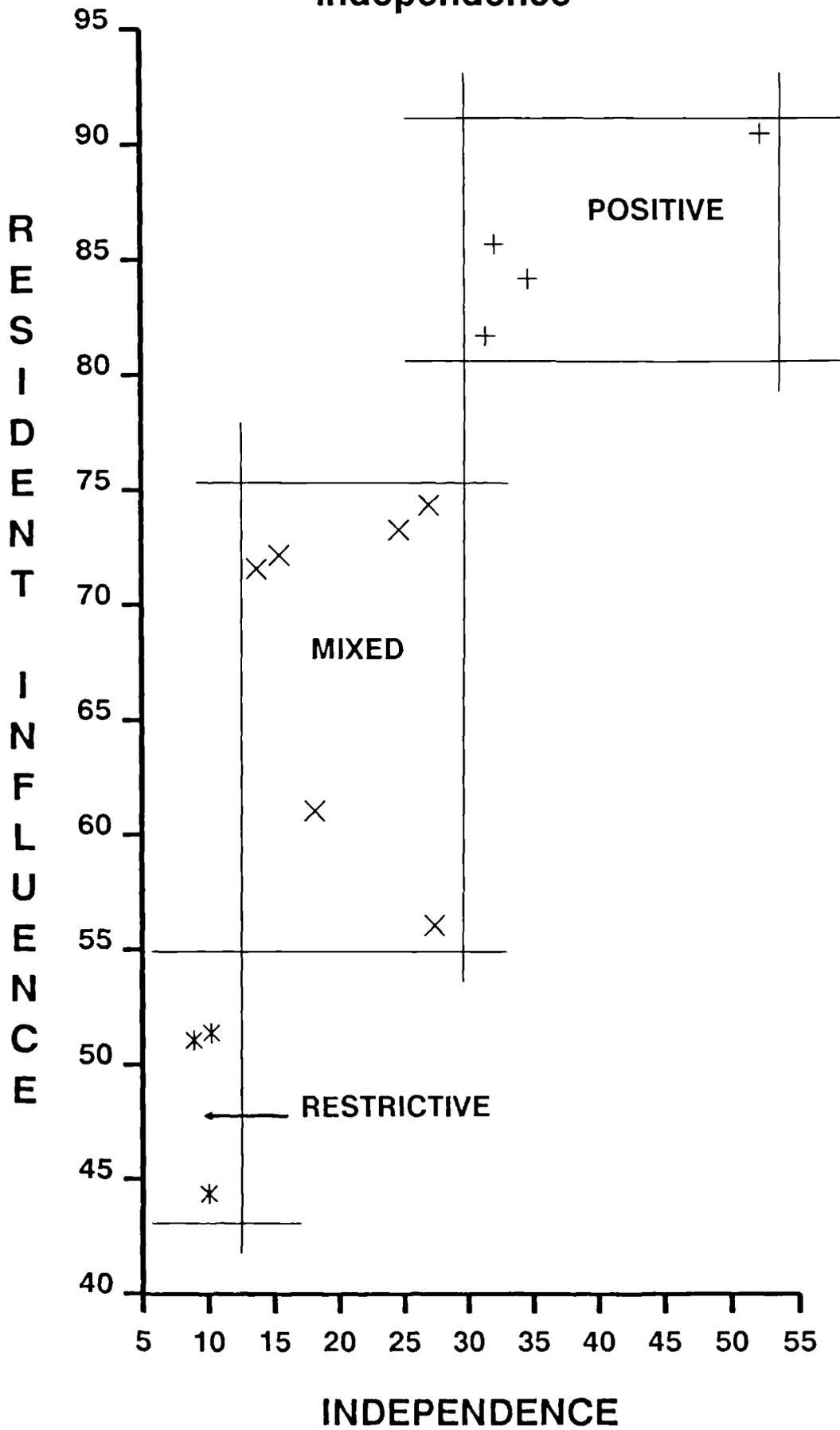


Table 8.5 identifies the average and range of scores in each type of regime. The home classifications vary significantly on all the scales with the exception of "physical comfort" and "conflict".

Table 8.5 Distinguishing Regime Types

	Positive		Mixed		Restrictive	
	Max (Mean)	Min	Max (Mean)	Min	Max (Mean)	Min
Cohesion *** (51.6)	81.7 (75.4)	55.6	48.9 (37.7)	18.5	51.1 (32.9)	20.6
Conflict NS (75.8)	87.3 (77.6)	71.4	85.2 (75.7)	67.8	75.5 (72.6)	68.9
Independence *** (25.5)	51.6 (38.4)	31.0	27.2 (21.3)	13.6	10.2 (9.9)	8.9
Organisation *** (52.5)	71.4 (65.0)	46.0	58.9 (44.1)	18.5	51.1 (44.7)	38.4
Self-explor. *** (64.8)	86.1 (80.6)	60.3	58.3 (55.4)	51.1	56.5 (52.7)	44.4
Res influence *** (70.9)	90.5 (85.9)	81.7	74.4 (68.2)	56.1	51.4 (48.8)	44.4
Phys. comfort NS (66.7)	74.6 (68.0)	55.6	69.1 (64.9)	53.7	76.9 (66.7)	53.3

Figures in brackets refer to average scores

Significance levels refer to analysis of variance (F statistic) of scales between regime types

NS p> .1
* p< .1
** p< .05
*** p< .01

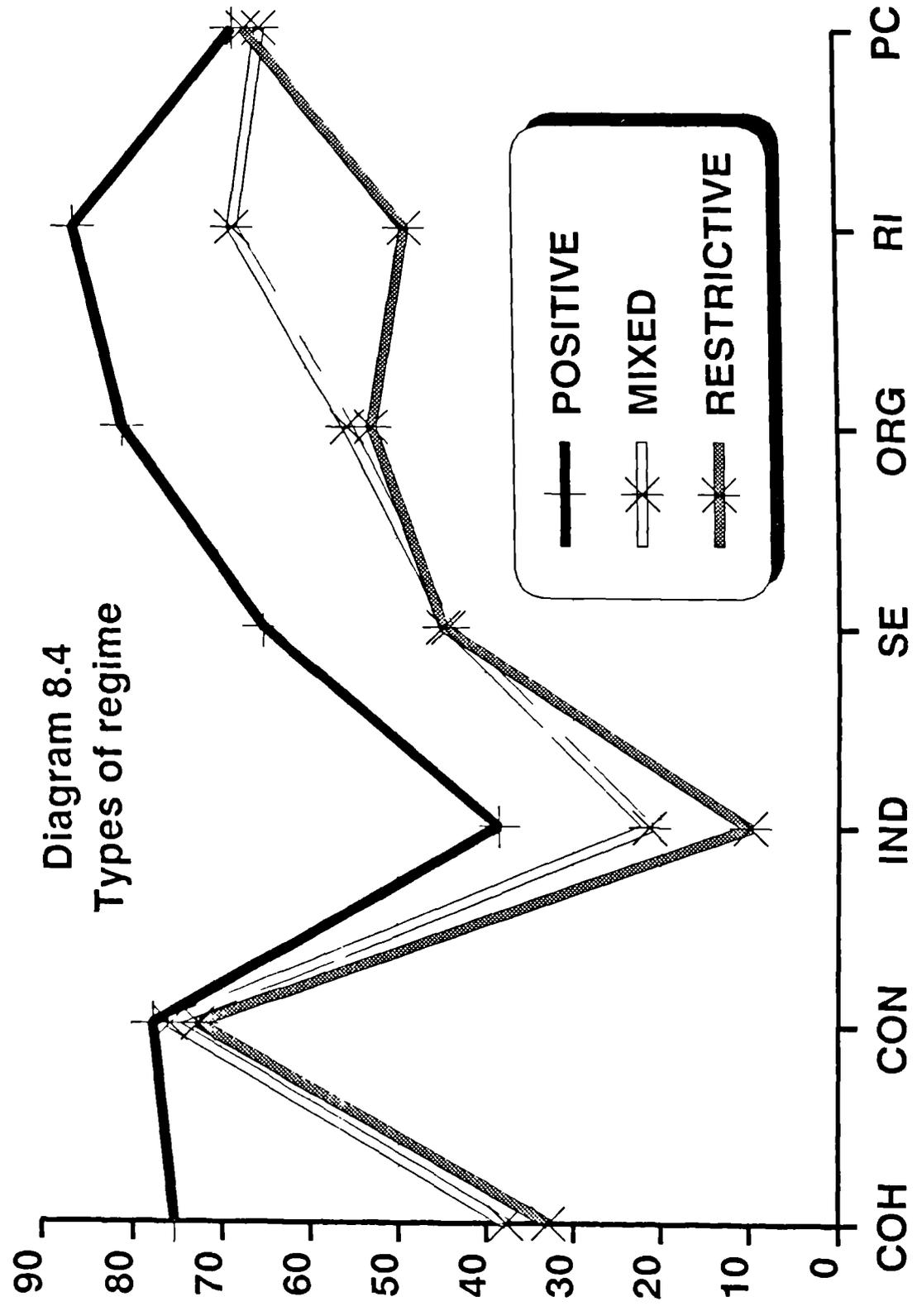
Diagram 8.4 shows that the "profile" of the homes with "positive" regimes is clearly different to that of the other types of home. The positive regimes were easily defined using the cluster analysis and have significantly higher "resident influence" and "independence" scores, which were identified at the outset as being important if the groupings were to reflect the type of regimes proposed by Booth.

"Cohesion" is much higher in the homes classified as "positive", and at a similar level to "conflict". Both the levels and the profile of the SCES sub-scales are closer to the USA profile of nursing homes (Diagram 8.1). "Independence" is lower in the "positive" homes, however, and "resident Influence" higher, than in the American facilities

The homes which had "restrictive" regimes were not so clearly defined in terms of the cluster analysis, and their "profile" in diagram 8.4 is less easily distinguished from the homes which were classified as having "mixed" regimes. They are well separated, however, from the other homes on the critical dimensions of "independence" and "resident influence".

The advantage of these scales over Booth's method of defining the types of regime is that it would appear that these are replicable. Obviously further work would need to be done over a larger sample of homes to establish both normative levels and measures of concurrent validity but this provides at least a starting point for developing a usable measure. For example, if the results of the study were validated by further research then one way of defining regimes of homes would be that a home scoring over 30 for independence and over 80 for resident influence could be defined as having a positive regime. If a home scored less than 12 on independence it would be regarded as having a restrictive regime.

Diagram 8.4
Types of regime



8.4.3 Determinants of type of Regime

It is necessary to be cautious in drawing any conclusions from aspects of the homes which appear associated with the type of regime, as most of the data collected are cross-sectional. With such data there is often a lack of clarity about the direction of cause and effect. However, it is of interest to note that both positive and restrictive homes are significantly associated with a higher proportion of confused residents. The average percentage of residents assessed as moderately or severely confused in the "mixed" homes was 18%. This compared with 67% of residents in the "restrictive" homes and 48% in the "positive" homes. This finding reflects the distribution of the specialist homes. Only one of the six specialist homes fell into the "mixed" category. Two of the specialist homes were classified as restrictive and the remaining three as positive.

Other differences between homes with different types of regime were restricted to the "positive" homes. For example, the proportion of staff who had received in-service training was higher in these homes (34%) than in the others (21%) although this difference is not statistically significant ($p=.15$).

Another association that has important policy implications, if it is confirmed in further studies, is the link between short-stay care and homes with positive regimes. Both the percentage of short-stay residents in the homes and the turnover of residents are negatively associated with positive regimes. The average proportion of short-stay residents in "positive" homes is 1.3% compared to 4.4% in the remaining homes ($p<.1$). Short-stay residents by definition will be admitted and depart the home more frequently than permanent residents. It was not altogether surprising, therefore, that there was a turnover of nearly 100% over a six month period in the homes that were not categorised as "positive". The turnover of residents in the homes with "positive" regimes was still high (74%), but the difference was statistically significant ($p<.1$).

It is probable that the lower level of turnover of residents in homes with "positive regimes reflects the proportion of short-stay residents. If there is a causal connection it is most likely that the resentment expressed by permanent residents of short-term admissions noted by other researchers (Kuh and Boldy, 1981, Allen, 1983) is reflected in the social climate of the homes. If the provision of short-term care by long-term care institutions prevents the formation of positive regimes this calls seriously into question whether using homes for elderly people to provide respite care is appropriate.

This presumes, however, that provision of these "positive" regimes is an aim of residential care. A relationship with outcomes for the residents is required if these regimes are to be as desirable as the classification "positive" would imply.

8 5 Conclusion

Two methods of addressing the problem of measuring the impact of the social environment were adopted. Both in describing the social climate of homes as a whole and in forming a method by which the homes can be classified, the SCES scales have been successful. The classification was based on Booth's (1984) types of regime and one of the most important distinguishing dimensions was the "independence" sub-scale. It is interesting to note that the average score for "independence", in the homes with a "positive" regime, was still lower than the average for both nursing homes and residential care facilities in the USA.

The SCES approach did not distinguish any different "social climate" for the demented elderly residents as a group in non-specialist homes. The degree to which these residents formed an identifiable group varied between homes, which casts some doubt on the methodology. The SCES scores for the demented sub-population of the homes may reflect variations the degree to which the staff perceive the demented residents as a group, as well as variations in perceptions of the social climate. The SCES scores obtained from staff asked to consider demented residents only in the home might not, therefore, be valid.

However, in homes designed for group-living each group was clearly identifiable by staff. At the pilot stage the officer-in-charge consulted considered that differences in the social climate between the groups were accurately reflected by the scales. Absence of statistically significant variation between most groups within homes might well reflect genuine lack of variation between these groups. The possible reasons for this have been discussed earlier (see section 8.3.2). Where variations do exist, however, they are likely to have a more direct impact on residents than the social climate of the home as a whole. For example, if there is a high level of conflict in a resident's group, it is this, rather than the level of conflict in the home as a whole, which will have the most effect on him or her.

In further analysis, therefore, it was decided to incorporate: variables indicating the overall regime type (positive, restrictive or mixed), the SCES scores for the home as a whole in homes designed for communal living and the SCES scores for the resident's group in homes for group living. These indicators, together with the measures of individual care practice identified in the previous chapter, provide a useful basis for the assessment of the impact of the social environment on demented elderly residents.

CHAPTER 9

THE PHYSICAL ENVIRONMENT

Introduction

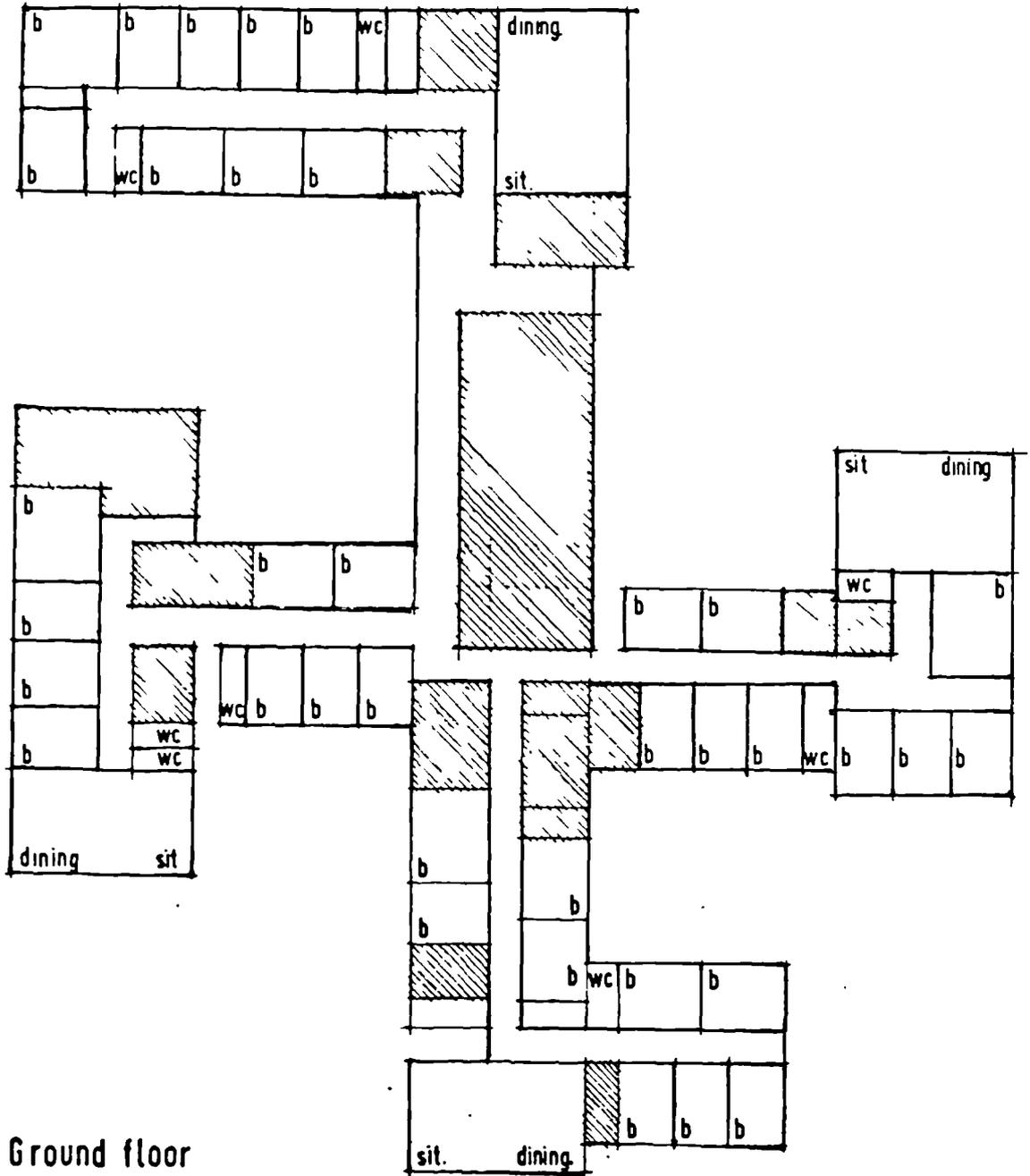
Three principal dimensions of the physical environment which it was proposed to investigate were identified in chapter 4: the ambience, the extent of personal territory and the complexity of the environment. After a brief description of the types of design of homes included in the study, the present chapter discusses the results of the investigations into their ambience and of personal territory available to the residents. The main focus, however, is upon the experienced complexity. This is primarily because an attempt was made to measure for sample residents both a "coping response", the residents ability to find their way around and the residents' "individual experience" of the complexity of the environment.

9.1 Types of Design

The homes included in the study varied widely in age, design, purpose for which they were built, and so on. However, the main difference in the usage of the buildings was whether they were organised for group or communal living.

The definition of a group-living home for the purposes of the study was one in which the primary activities of daily living, eating, and sleeping were confined to a definable area for a particular group of residents. The residents themselves were not confined but did not need to leave the area. Typically such a home would be of dispersed design with two or four dining and sitting rooms. Bedrooms would be in close proximity to these with WCs and bathrooms nearby. Unless the resident was leaving the building there would be no need for them ever to visit the rest of the home. Diagram 9.1 shows an example of a floor plan of a group home.

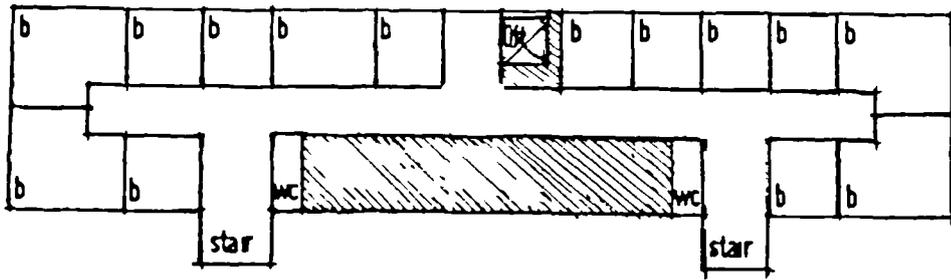
Diagram 9.1 Group living design



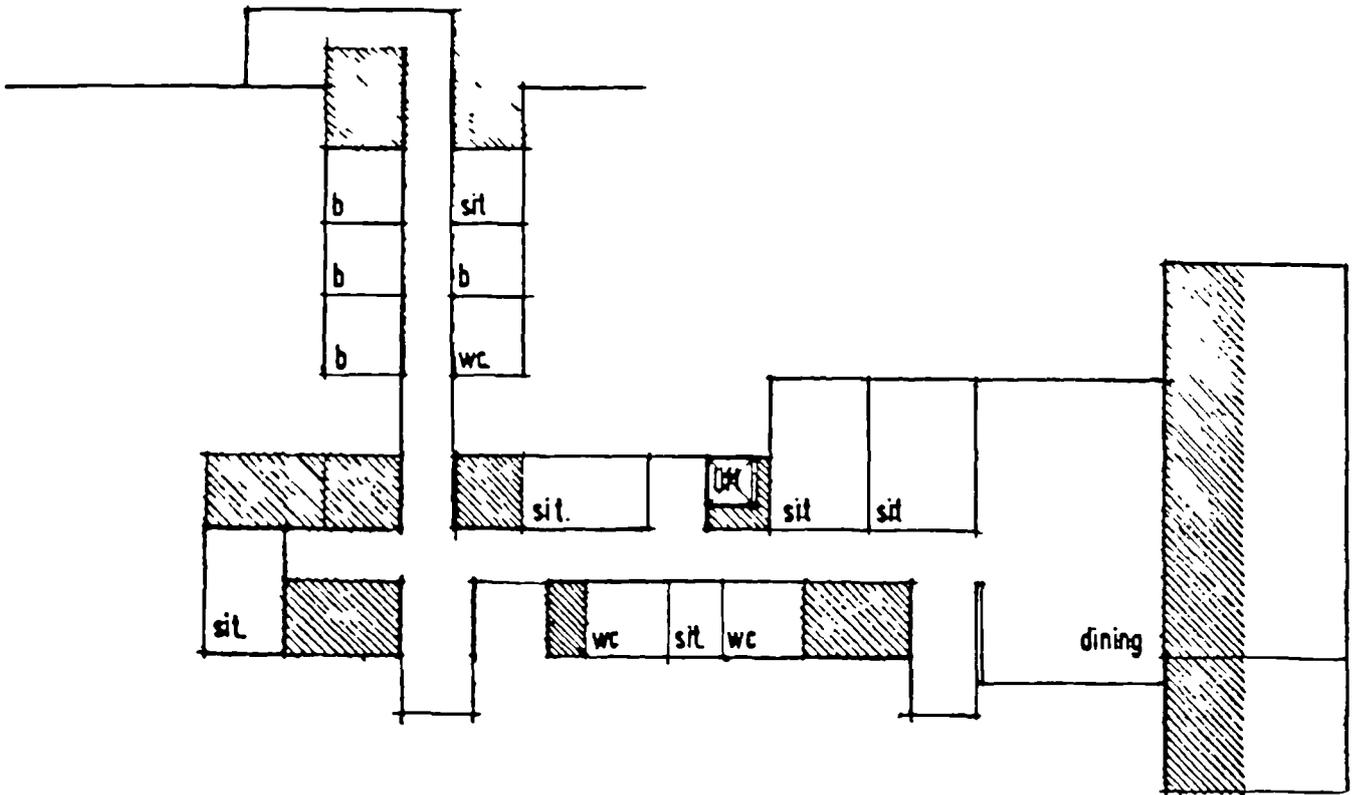
Ground floor

Zones	Bedroom.	6.
	Sitting.	4.
	Corridor	9.
	TOTAL	19.

Diagram 9.2 Communal living design



First floor.



Ground floor.

Zones	Bedroom	2.
	Sitting	6.
	Corridor	3.
	TOTAL.	11.

Communal homes on the other hand were characterised by a single dining area where all residents ate. There were usually several sitting areas, but the larger areas tended to be concentrated in one area of the home, away from the bedrooms. The purpose-built homes frequently had long corridors. Diagram 9.2 gives an example of a floor plan of this type of home.

Two of the communal homes were converted from older residential properties. These could be represented as more "normal", or more like private housing, at least on arrival at the home. However, later additions and the scale of the buildings did mean that they had quite confusing layouts. For a visitor to the home, it was generally found easiest to navigate around the traditional, communal purpose built homes

There were 6 group-living homes and 7 run on communal lines. Of the group-living homes all but one had been built for that purpose. The exception had been converted from a home originally intended for communal use. Of the five specialist homes for the mentally infirm, four were group-living homes.

9.2 Ambience

A four point scale from Moos' Rating Scale (Moos and Lemke, 1984) was used to rate the light and noise levels in the bedrooms, sitting areas, dining areas and corridors (see form B, Appendix 1). The scores were added to give two indicators: "light" and "quiet".

The "light" scores ranged from 3 in the darkest to 9 in the brightest homes. The darkest home on this basis was one of the older buildings that had been converted for use as a local authority home. In general, however, the homes designed for group-living were darker. On average these scored 5.3, while the communal homes had a statistically significantly higher score of 7.0 ($p < .1$).

The higher the score on the indicator "quiet", the quieter the home. The scores, which ranged from 6 to 10, did not appear to be related to any particular design feature in the homes. Higher noise levels resulted from entertainments in the home, the television, and shouting by some residents.

9.3 Personal Territory

Although the concept of personal territory primarily relates to the physical environment, there is also an important social dimension. Restrictions on use or constant "invasion" by staff or other residents will undermine any sense of ownership or personal space that a room can offer. Necessarily there will be some overlap, therefore, between the regime concepts discussed in chapter 7 and the notion of personal territory

It was originally proposed that by the use of various indicators of the physical environment, combined with the intended indicators of "privacy" and "freedom", which were discussed in chapter 7, it would be possible to derive an indicator of "personal territory" for each resident. However, without an indicator of a direct "coping response" to validate such an approach, the combining of such disparate measures appeared, at the very least, dubious

It was decided, therefore, to identify those aspects of the physical environment which it was hypothesised would most closely link to personal territory to provide a description of the territorial space. Where appropriate these measures, together with the relevant indicators of the social environment, would be included individually in the analysis of outcomes. Any association established between these and changes in behaviour might enable the generation of hypotheses for future research.

9.3.1 Territorial Area

The only area in a residential facility, that "belongs" to residents is their bedroom. If residents have a single room then this area is clearly defined. This was the case for 61% of the sample residents.

Where the residents shared bedrooms an attempt was made to assess how clearly defined was the part of the room that "belonged" to the resident. Judgements of the arrangement of the furniture and any personal territorial markers were used to make this assessment, rather than observation of behaviour. A four point scale was used (see form I, Appendix 1). While there appeared to be no observable division at all for only two residents, none of the residents had part of the room very clearly defined as his or her own. In the majority of cases (59%) there was little observable separation of area.

The size of residents' personal territory varied considerably. On average each resident had a bedroom area of 8.95 square metres but the areas ranged from 2.00 to 11.00 square metres. Single rooms were larger on the whole (9.62 square metres) and those residents who had little in the way of identifiable territory "markers" had smaller areas of personal space (7.58 square metres). In 1973, the revised Local Authority Building Note No. 2, recommended that single bedrooms should have a minimum area of 10 square metres and double rooms 15.5 square metres. While the average bedroom area by room type is very close to these recommendations, many of the sample residents have very much smaller areas of "personal space".

The degree was very limited to which residents, or their relatives, appeared to make the room their own by bringing in possessions and furniture. The rooms which were clearly a separate, personal area in the home were the exception rather than the rule. Only five residents in the sample had really personalised their bedroom to any great degree. A further third of the sample residents had personalised the room to some degree. In seven cases there was virtually no evidence of habitation other than standard home-provided furniture and bedding. The majority (56%) had only "personalised" their rooms a little, with one or two ornaments or pictures.

9.3.2 Territorial Invasion

Two of the indicators of the physical environment included in the study were taken to represent the institution undermining the residents' sense of territory. These were observation windows and change of bedroom. Only in one (new) home were observation windows the norm. These took the form of frosted glass panels from the bedrooms on to the corridor. Although it was not possible to see clearly through these, they gave at least the illusion of an invasion of privacy.

7% of sample residents, who remained in the home at the end of a six month period, had changed their bedroom during the six month period of the study. The reasons for the change of room were varied: deterioration of residents' behaviour, or deterioration of behaviour in the person with whom they shared, movements of residents into "better" rooms and so on. However admirable the motive, the result may well be a reduction in continuity of a sense of personal territory for that resident.

9.3.3 "Own" Chairs as Territory

It was hypothesised that the tendency in some homes for all, or nearly all residents to have one chair they always sat in, and which only they used (Davies and Knapp, 1981), was a form of territorial behaviour. In eight of the study homes nearly all the residents sat in just the one chair. Of the sample residents approximately half (47%) always sat in one particular place. As would be expected, this was heavily influenced by the home culture. 71% of the 58 sample residents in the "own chair" homes always sat in the same place. Only 18% did so of the 45 residents in the remaining homes.

It is interesting to examine this in relation to other indicators of personal territory. Table 9.1 shows the association between homes with the "own chair" culture and other territorial indicators. There does appear to be some evidence that the "own chair culture" reflects a low sense of personal territory. The average bedroom area for the sample residents in these homes was significantly lower ($p < .01$). Where

residents shared rooms, the divide between areas was less well defined on average in the homes with an "own chair" culture. The proportion of bedrooms that were single in the homes as a whole was less although this was not statistically significant ($p=.26$).

Table 9.1 Indicators of personal territory

	Type of home		p
	"Own chair"	Other	
Average bedroom area (n = 104 residents)	8.33	9.76	***
% of those in shared rooms where there was little or no division (n = 41 residents)	80%	38%	***
% of bedrooms that are single (n = 12 homes)	52%	70%	n/s

Analysis of variance (F statistic)

ns p > .1
 * p < .1
 ** p < .05
 *** p < .01

One possible underlying reason for these relationships is the age of the homes. Once established, the "own chair" culture, as with the tendency to have all the chairs around the edge of a sitting room, is difficult to change, even if the attempt is made. It is possible that staff used to positively encourage residents to regard one chair as their own in the older homes, even if they no longer do so. Homes built before 1971 have significantly ($p<.01$) smaller bedroom areas (7.2 square metres) than homes built since (9.5 square metres). In all of the homes built before 1970 the "own" chair culture dominated. However, of the nine homes built since 1970, four had the "own" chair culture. In these homes the bedroom area were

smaller (9.2 square metres on average) than those where the culture did not persist (9.8 square metres) but this was not significant ($p=.14$).

Without a larger sample of homes and a more detailed study of territorial behaviour it is impossible to deduce much from these associations. It is of interest, however, that some of the more recently opened homes have this culture and that there does seem to be an association between this culture and the amount of personal space.

9.4 Complexity

The study sought to investigate the complexity of the physical environment through an assessment of the design of the home. Particular emphasis was put upon the individual's experience of the design of the home and relating this to the ability to find his or her way around. The results of this analysis were first reported in Netten (1989). The following also includes an investigation into the effects of aids to orientation.

9.4.1 Assessing the Home Design

In order to make an assessment of the complexity of the buildings Lipman's (c.1983) schematic route diagram concept was employed. Lipman defines this as representing:

... the links between functional areas in a building when considered from the perspective of specific users who navigate themselves between such areas. (p2)

Those areas not normally used by the residents are excluded from the schematic diagram representing the home. The route diagram for staff members of a home would, therefore, be quite different to that for residents. From an architectural point of view these diagrams are a representation of the complexity of the circulation layouts of the homes.

The "functional areas" for the residents of a home for the elderly are: bedroom areas, sitting areas, dining areas and WCs. The route diagram for a home consists of paths linking each of these zones and identifying the points where decisions have to be made. A decision point occurs whenever a zone is encountered or there is a junction of corridors. These can be "simple"(A), that is two way decisions such that it is possible only to stay or to continue, or "elaborate"(B), usually three way decisions.

Lipman (c.1983) conducted a study of eight homes in which the schematic route diagram for each was specified. These were ranked on a subjective assessment of their complexity made by a number of independent observers. From this two measures of complexity were specified, one based on zones and the other upon the number of decision points per resident weighted for complexity of decision.

- the total number of zones in the home (including corridors)
- $(A + 2B)/\text{number of residents}$

This implies that the more dispersed homes designed for group-living are more complex and thus possibly unsuitable for the mentally infirm resident.

The approach was adapted for use in the present study by individualising the routes and incorporating some of the reservations that Lipman himself had expressed about the system. There were two main amendments:

- The diagrams used were specific to an individual and the use he or she made of the home. If residents in a group home never left their group then that was all that was included on their route diagram.
- In addition to Lipmans decisions "exits" from the route were included. A wrong decision at such a point would mean the resident being out of their usual section of the home or out of the building itself and thus more likely to become lost.

The route diagram for a resident in bedroom b1, in the example of a group home is shown in Diagram 9.3. Although the overall layout of the home is complex, the route diagram is relatively straight-forward because the resident in the normal course of events does not leave his or her group. The definition of "in the normal course of events" for the study excluded those parts of the home the resident did not go to during a typical month.

For a resident in bedroom b1, in the example of a communal home, the route diagram is shown in diagram 9.4. The resident has to get to the one dining area in the home from an upstairs bedroom, so the route is necessarily long and complex compared with that of the group home resident.

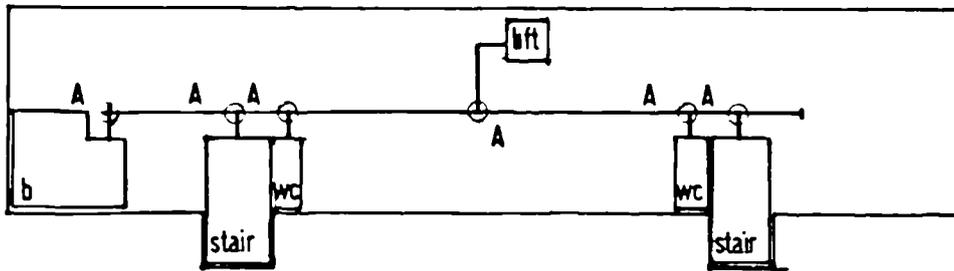
Each route diagram was scored and using these and the floor plans it was possible to ascertain the length of the route, average number of doors per corridor on the route, number of complex and simple decision points encountered and number of exits from the route. The total number of zones in the home as a whole was also recorded. These are shown on diagrams 9.1 and 9.2. Corridors and sitting areas count individually as zones. Blocks of bedrooms separated by other facilities are counted as bedroom zones.

9.4.2 Distinctiveness and Orientation Aids

In addition to the routes and zones, a note was kept of the use in the home as a whole of colour coding and large signs to indicate bedrooms and WCs. An attempt was made to assess the distinctiveness, both of aspects of the facility overall (form B, Appendix 1), and of sample residents' bedrooms and bedroom door (form I, Appendix 1). However, "distinctiveness" of various parts of the home proved an elusive concept to rate consistently. The "halo" effect of the attractiveness of the facility tended to dominate ratings.

Diagram 9.4

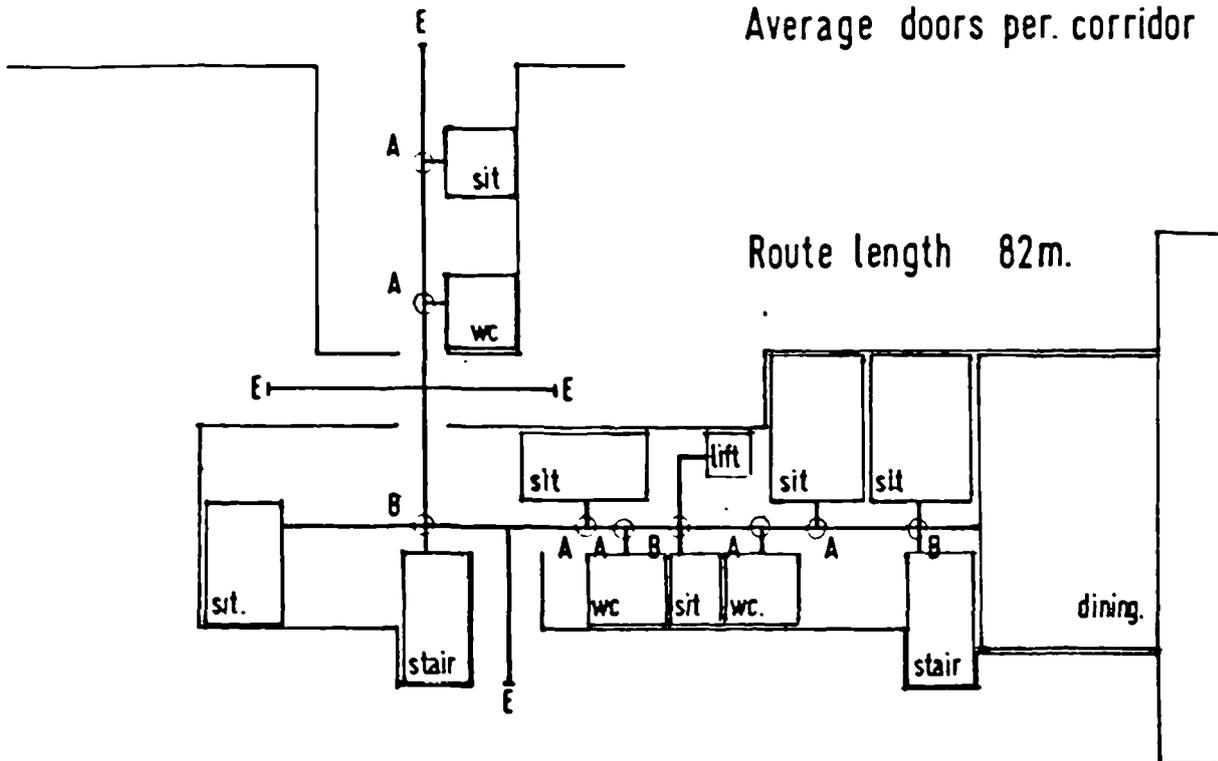
Route for resident in communal home



First floor.

Route diagram score.

Simple A decisions	12
Complex B decisions	3
Exits from route	4
Average doors per corridor	



Route length 82m.

Ground floor.

The use of colour coding as an orientation aid appeared at times to be of dubious benefit. For example, in one specialist home brightly coloured rugs and bedspreads were used as a method of "colour coding" bedrooms. There appeared to be no attempt to assist the resident to use these as such and the overall effect was of a home with virtually identical bedrooms. This was because the scope for personalisation of the bedrooms was even further restricted than in homes for elderly people generally. In other homes the use of colour coding was often restricted by regulations or practice among those responsible for the decor at local authority level. Generally, the main type of orientation aid used was clear labelling of doors, particularly WCs. In six of the homes the doors to WCs were clearly defined by colour, labelling or both. In only one home, however, were lounge areas defined clearly in this way.

Individual bedroom doors, and bedrooms upon entry were rated by directly comparing them with neighbouring rooms. The question to be addressed was simply, could this room/door be easily confused with those around, rather than the global assessment of distinctiveness of design. The majority (76%) of bedroom doors had little to distinguish them from surrounding doors. In 27% of cases the bedroom was clearly different on entry, but for 12% of the sample the room appeared virtually identical to other bedrooms in the home. Although the remaining residents had rooms that could not be classified as identical, they were not distinct and could be confused with other bedrooms.

Any assessment of the value of orientation aids and/or distinctive design features would need a more "controlled" type of research design than that undertaken here. It did not prove possible to impose a retrospective classification of the homes' or residents' use of labelling or colour. However, there was reason to believe that the coding of the bedrooms and bedroom doors was reasonably consistent since it was undertaken by the same researcher.

9.4.3 Assessing Residents Ability to find their way around

The "coping responses" hypothesised in the model (see chapter 4) can be represented as "intermediate" outcomes. These are outcomes which are often the expressed aim of an intervention, the link with such "final outcomes" as welfare being assumed. One such "intermediate outcome" is the level of engagement which has been used as an outcome measure in a number of studies (Rothwell et al, 1983, Jenkins et al, 1977) High engagement is assumed to be linked with a high quality of life in such studies. In assessing the physical environment an important "intermediate outcome" for demented residents is taken to be an ability to navigate themselves independently around the home and find the places where they wish to go. Inability to navigate the home successfully is hypothesised to affect adversely the welfare of residents by enforcing dependence upon others.

A major difficulty is determining a useful measure of this hypothesised "coping response" to the design of the home. If asked, residents may frequently not even know that they are in a home for elderly people. In practice, however, the same residents may be able to find their way to their bedrooms without difficulty. Observation of behaviour can lead to erroneous conclusions over a short period: is a person lost, wandering or simply taking the long way round?

A measure was devised by which it was hoped to overcome some of these difficulties. Staff who are dealing with residents on a daily basis know whether individuals could be relied on to find their own way to the WC, needed reminding or always were taken by staff.

As part of a questionnaire relating to each resident therefore, the Officer-in-Charge or a senior staff member was asked if that resident could find his or her way unaided (scoring 2), needed some directing (scoring 1) or had to be taken the whole way (scoring 0) between a few key places in the home.

These places were:

- from the resident's usual sitting area to *his or her bedroom*,
- from the resident's usual sitting area to the dining area
- from the resident's usual sitting area to the WC, and
- from the resident's bedroom to the WC.

The scores were added to provide a measure ("Find") that ranged from eight to zero, the higher the score the more able a resident to find their way around.

9.5 Validity and Reliability

Many of the measures used in assessing physical designs were based on observation. No independent assessment was feasible and the ratings are necessarily dependent on the judgement and knowledge of staff. Every effort was made at the time, therefore, to be aware of possible confounding influences. Where these were noted they have been reported above

9.5.1 Route Diagrams

As discussed above, Lipman attempted a validation of the route diagram technique by getting independent assessments of the complexity of building layouts. However, the use of the diagrams has been amended and residents perceptions may not match those of visitors to the home. Indeed, this is implicit in the model as individual experience is dependent upon both the environment and the individuals level of competence (see chapter 4). Necessarily, therefore the current exercise can only be exploratory, relying on face validity at this stage. Further investigations will be needed to establish the validity of this approach to the assessment of the design of residential facilities

9.5.2 The "Find" Measure

Ideally, there should be an observational study to provide an independent assessment of residents' ability to find their way around which would enable an assessment to be made of the validity and reliability of the measure. Given the time

and resource implications such an approach was not feasible. In its absence every effort has been made in the initial design of the measure to make it as valid and reliable as possible:

- The judgements of Officers-in-Charge have been shown to be reliable in other areas concerning residents behaviour (Vardon and Blessed, 1986).
- Interviews were conducted by the same interviewer in all cases to ensure consistency of definitions.
- The measure has face validity in that it specifies those areas most residents will have to use in the course of a day.
- The three level coding of ability for each question follows the form successfully employed by the CAPE Behaviour Rating Scale (Pattie and Gilleard, 1979).

It would be expected that a measure of ability to find one's way around would correlate positively with an established measure of orientation. A measure of concurrent validity, therefore, is the correlation between the CAPE measure of orientation and the "Find" measure. This was .46 which is acceptable given the emphasis on cognitive aspects of orientation in time and personal information in the CAPE measure: the "Find" measure assesses the behavioural aspects of spatial orientation. Table 9.2 shows the average orientation (I/O) scores for residents by their different levels of ability to find their way around, as assessed by the "Find" score. The mental ability (Mab) and psycho-motor (Pm) scores in CAPE were also positively associated with the "Find" measure ($r=.39$ and $r=.30$ respectively).

There was a minor problem with missing values when a respondent wasn't sure (when a commode in the bedroom was used, for example) whether he or she would be able to find their way from the bedroom to the WC. In these cases the score was adjusted to reflect the value that would have been obtained if the response was consistent with the other items in the scale.

Table 9.2 Residents' Ability to Find their Way Around

	Find Score	Average Orientation Score (I/O)	No. of Residents	% of Residents
Low	0-3	0.96	28	27
Moderate	4-7	1.84	38	37
Good	8	3.29	38	37
All Cases	4.97	2.14	104	101

Whatever the evidence in favour of the "Find" measure as a new device, it is necessarily unproven. The following discussion assumes that it gives a reasonably consistent indication of the abilities of the residents relative to one another to find their way around their environment.

9.6 Effects of Home Design on Residents

Three main types of influence are likely to affect confused elderly residents ability to find their way around a residential home:

- Personal degree of intellectual impairment, drugs taken and so on.
- Social features such as type of regime
- Physical layout of the home for example

These should not be regarded as independent. Each may affect the other - the degree of "fit" of a resident with the regime will determine what effect that regime is going to have on the resident (Lawton, 1973). The principal concern of this chapter is with the "fit" between the personal characteristics of the resident and the physical environment.

9.6.1 Personal System

The degree to which demented people can find their way around anywhere is fundamentally linked to their overall level of orientation. As reported above, this measure was closely correlated to the "Find" measure. The other personal characteristics that were included in the exploratory analysis were the mental and physical ability of the demented resident and the number of psychotropic drugs taken. A subsequent analysis that also incorporated the use of the CAPE psychomotor score is reported briefly in Appendix 7.

9.6.2 Social Effects

The assumption in the model is that there will be an interaction between the physical and social environment and the characteristics of the residents. To identify, however hesitantly, cause and effect necessitates breaking into this circuit and making assumptions about the rest of the influences. The interest here is to look at the effect of the physical environment given the dependency characteristics of the individuals. If social effects are included in this kind of analysis they can in some cases exclude the very effects with which the analysis is concerned.

For example, in communal homes the levels of "cohesion" and "conflict" as measured by the SCES scales are related to the average number of doors per corridor (the correlation coefficients are $-.61$ and $-.50$ respectively). These dimensions of regime are also related to the number of exits on a route. More exits on a route are associated with higher "cohesion" ($r=.59$) and less "conflict" ($r=-.41$).

The levels of cohesion and conflict in a home could well be affected by the layout of a home. Residents' use of homes could be affected by the levels of cohesion and conflict in the social environment. While of interest in the interpretation of the analysis of the relationship between the physical environment and the ability of residents to find their way around, the inclusion of such influences excludes the physical characteristics in which the main interest lies. In this analysis, therefore, social effects have been excluded.

9.6.3 Design Effects

The method of assessing the individual experience of the home, via route diagrams, has been described above. This identified for each resident: the number of simple and complex decision points, the number of exits on the route, average number of doors in the corridors on the route and the total length of the route. The overall design was incorporated by including the number of zones in the home as a whole and a dummy variable which indicated whether the home was designed for group living. The number of storeys in the building and the lighting level were also included as potentially important influences on a resident's ability to find his or her way around.

9.6.4 Orientation Aids

Once the relationship between the "Find" measure and the personal design indicators had been explored, there was a brief investigation into whether the use of orientation aids, such as colour coding appeared to influence the effect of the design on a resident's ability to find his or her way around.

As discussed above, the method of assessing the distinctiveness of design was not felt to be successful. However, an indicator of the distinctiveness of the individual resident's bedroom doors and bedrooms on entry, together with dummy variables indicating the use of orientation aids for WCs and lounges were included in a subsequent analysis. These variables were forced into the equations established in the first stage of the analysis.

9.7 Results

Multiple regression analysis was used to analyse the relationship between the physical environment and the residents' ability to find their way around. Initially the residents CAPE I/O score was entered into the equation to reflect the fact that, for demented residents, degree of dementia, reflected by their general level of orientation, is a fundamental influence on spatial orientation in the home. Variables

measuring personal and home design characteristics were then allowed to enter the equation using stepwise regression procedure (see chapter 10). Variables that resulted in an increase in the F statistic such that $p < .1$ were allowed to enter the equation. Aids to orientation were entered into the equation subsequently to examine whether they affected the impact of the home design on residents.

The initial analysis, shown in Appendix 7, considered all the cases together. When the sample as a whole was analysed, the level of orientation accounted for 20% of the variation in the "Find" measure. Orientation, mental ability, physical disability, number of zones, complex decisions, exits from the route and level of light in the home accounted for 51% of the variation.

Although the variable indicating whether or not the home was based upon a group design was not included in the equation the signs of the coefficients led one to suppose that this might be an important factor. Positive coefficients for zones suggested that there might be a correlation between a higher number of zones and enhanced spatial orientation abilities among confused residents. This could be an indication that the more dispersed design of group homes were proving a positive influence in the management of confused elderly people. It was decided, therefore, to analyse the residents in group homes and communal homes separately to see if a clearer pattern emerged.

The decision to analyse the data by design type of home is supported by the Chow test (Chow, 1983). This tests whether estimating the equations separately significantly increases the explanatory power of the analysis. The resulting F statistic was 3.15 which was significant ($p < .05$) indicating that the variables included and the directions of influence depend on the type of home - group or communal.

When the 51 residents of group homes were analysed as above it was found that 25% of the variation in the resident's capacity to find his or her way around was

explained by his or her level of orientation. For the 53 residents of the communally designed homes only 15% of the variation was explained. In other words residents living in a group home would experience their level of orientation as a more important factor in finding their way around than residents living in a communally designed home. The reason for this becomes clearer when the variables in the different equations resulting from the separate analyses are examined. These are shown in tables 9.3 and 9.4.

9.7.1 Communal Homes

Table 9.3 Communal Homes

Variable	Coefficient	t value
Orientation	0.1	0.5 n/s
Physical disability	-0.7	-5.9 ***
Drugs	-0.9	-2.8 ***
Zones	0.4	3.2 ***
Exits	-0.3	-3.2 ***
A decisions	0.2	2.3 **
Doors per corridor	-0.1	-1.7 *
Constant	-7.2	-2.8 ***

Dependent variable= Find

$R^2 = .65$

Adjusted $R^2 = .60$

n = 53

n/s not significant

* $p < .10$

** $p < .05$

*** $p < .01$

i) Personal Characteristics

The personal factor that dominates the ability of residents to navigate successfully communal homes is their level of physical disability. This aspect of the residents had a highly significant coefficient while orientation and mental ability levels did not appear to be significant. The "Find" measure was based on whether staff had to take someone to their destination. Obviously if they need help with walking they have to be escorted there. This either results in the staff perceiving them as unable

to find their way or, because they never have to think about where they are going, actual inability to find their way. In either case the resident becomes undesirably dependent on staff.

In communally designed homes the more psychotropic drugs a resident received the less likely he or she was to be able to find their way around. This is not reflected in the group homes. It is possible that this is because more of the group homes are specialist and would have, perhaps, more in-house expert knowledge and better links with the psychogeriatric services (Arie and Jolley, 1982). Such drugs could thus be expected to be more appropriately prescribed and administered.

ii) Design Characteristics

The design characteristics that appeared to assist residents most were simple decision points and a larger number of zones in the home as a whole. These characteristics were associated with homes that were converted from older establishments

The more doors there were in a corridor on average (a feature that generally indicated longer corridors) the more confusing the communal home for its residents. If measures of social environment were allowed to enter the equation a higher level of conflict in communal homes appears to result in an increase in the ability of residents to avoid getting lost. A more likely interpretation of is that the long corridors adversely affect a residents navigational skills and this kind of layout (shown in diagram 9 2) affects the social climate of the home.

In the communal homes the more exit points on the route, the more likely a resident was to get lost. However, this does not apply in group-living homes and may reflect the fact that the greater flexibility of designs for group-living enables residents to set their own boundaries. Having made the judgement themselves they may be more likely to remember it, or repeat it. In communal homes the central

dining area may mean residents are "forced" into areas of the home that they find confusing.

iii) Orientation Aids

Inclusion of indicators of aids to orientation did not result in improved explanatory power of the equation; R^2 rose from .65 to .67 which was not statistically significant ($F=1.0$, $p=.39$). Moreover, none of the coefficients were significantly greater than zero. However, the coefficient of the number of doors per corridor did cease to be significantly greater than zero and the adjusted R^2 did not fall. This may indicate collinearity among the independent variables which would increase the standard errors and could result in t values ceasing to be significant. Indeed the distinctiveness of bedrooms upon entry was negatively correlated ($r=-.62$) with the number of doors per corridor. Similarly, the clear labelling of bedroom doors was associated with fewer doors per corridor ($r=-.25$). Clear labelling of WCs was positively associated with number of doors per corridor ($r=.56$). If the aids were acting as a mitigating effect upon the length of the corridor then they would be expected to have a positive coefficient. The only evidence of such a positive relationship was the coefficient for the indicator of clear labelling of the resident's bedroom door ($b=1.54$, $t=0.90$, $p=.37$).

9.7.2 Group-living homes

i) Personal Characteristics

In group-living homes both mental and physical characteristics of residents are important influences on their ability to find their way. Physical disability is an important variable, but as the distances between the zones are so much less than in communal homes, fewer residents are likely to be assisted by staff for physical reasons. Thus orientation and mental ability remain significant factors in group-living homes.

ii) Design Characteristics

As in communal homes decision points appeared to assist residents in moving from one area to another. In group-living homes, however, it was the more complex decisions that were significant. The contrast with communal homes was also reflected in the direction of influence of the average number of doors per corridor. In group-living homes residents were better able to cope with more doors per corridor.

Table 9.4 Group-living Homes

Variable	Coefficient	t value
Orientation	0.3	1.9 *
Mental Ability	0.2	2.2 **
Physical disability	-0.4	-3.2 ***
Light	2.1	3.3 ***
B decisions	1.6	3.4 ***
Length of route	-0.02	-2.4 **
Doors per corridor	0.3	1.8 *
Constant	-6.3	-1.5 n/s

Dependent variable= Find

$R^2 = 0.65$ Adjusted $R^2 = 0.59$ $n = 51$

n/s $p > .1$
 * $p < .1$
 ** $p < .05$
 *** $p < .01$

One interesting relationship is the importance of the lighting level in group-living homes. It is not surprising that additional light has a positive effect on residents abilities. The level of light tended to be lower in the homes designed for group-living than in communal homes, possibly due to the frequency of internal corridors heavily dependent on artificial lighting. Staff might simply be forgetting to switch lights on. Defunct bulbs that have not been replaced may also make such areas very dark even in the middle of the day. Either could create unnecessary confusion for the residents.

Residents who had longer routes in the group homes experienced more difficulty, and this probably reflects the residents who wander. Such residents will roam the whole building with little idea of where they are at all, let alone which part of the home

iii) Orientation Aids

The inclusion of indicators of orientation aids did not improve the explanatory power of the equation; the R^2 rose from .650 to .653, which was not statistically significant ($F=0.08$, $p= .99$). The adjusted R^2 dropped to .55 from .59. It was interesting to note that, as for communal homes, the coefficient for the number of doors per corridor ceased to be significant. None of coefficients of the indicators of orientation aids approached statistical significance, however.

9.7.3 Discussion

Although the influence of social factors is not under discussion here it is interesting to note that no significant relationship was found between the degree to which "independence" or "self-exploration" (measured by the SCES scales) was fostered by the regime and residents' ability to move successfully around the homes.

There is insufficient evidence to draw any conclusions about the effectiveness or otherwise of orientation aids such as colour coding and labelling. However, they have a role to play in assisting residents to deal with difficult or confusing designs and further research of a more controlled nature is needed.

Links do appear to have been established with the physical design however. Two particular issues have emerged from the analysis: the contrast between the effects of designs for communal or group-living and a concept that gives coherence to these apparently contradictory results; "meaningful" decisions.

i) Communal vs Group-living Designs

One question that inevitably arises in a discussion of the physical environment of homes for demented elderly people, is what type of design is the most favourable in the more effective management of spatial orientation. An equation was estimated to explain variation in the spatial orientation capacity of residents in which the only environmental factor included was a dummy variable for group-living designs ($b=0.43$, $t=0.81$, $p=.42$). Although the coefficient was not statistically significant this might be because of the greater degree of impairment of residents in the specialist homes which were predominantly designed for group-living. The CAPE measure of orientation included to adjust for this could be insufficiently sensitive in this context.

The issue is not, therefore, clear-cut, but there would appear to be a case in favour of the current trend towards group-living designs:

- The level of control residents have over their "routes" is enhanced in group designs as shown by the reduced influence of physical disability and the negative impact of the "exits" from the routes in communal homes.

- The homes were ranked by estimating the average predicted "Find" score (using the equations in tables 9.3 and 9.4) for residents if physical and mental disability were held constant. This resulted in all the group-living homes predicting a higher average "Find" measure than the communal homes. Moreover, the two homes that had been converted from private housing appeared the least confusing of all the communal homes. That is, those least like the traditional communal design appear to have the most favourable effect. The "best" group home on this basis is shown in diagram 9.1 and the "worst" communal design in diagram 9.2.

ii) "Meaningful" Decisions

One question that arises from the above analysis concerns the dependence of directions of influence on the overall type of design. Why is it that longer

corridors are an aid in group designs and a disadvantage in communal designs? Why are simple decisions important in communal homes and complex decisions in group homes? Is there a common theme that can link these apparently disparate results?

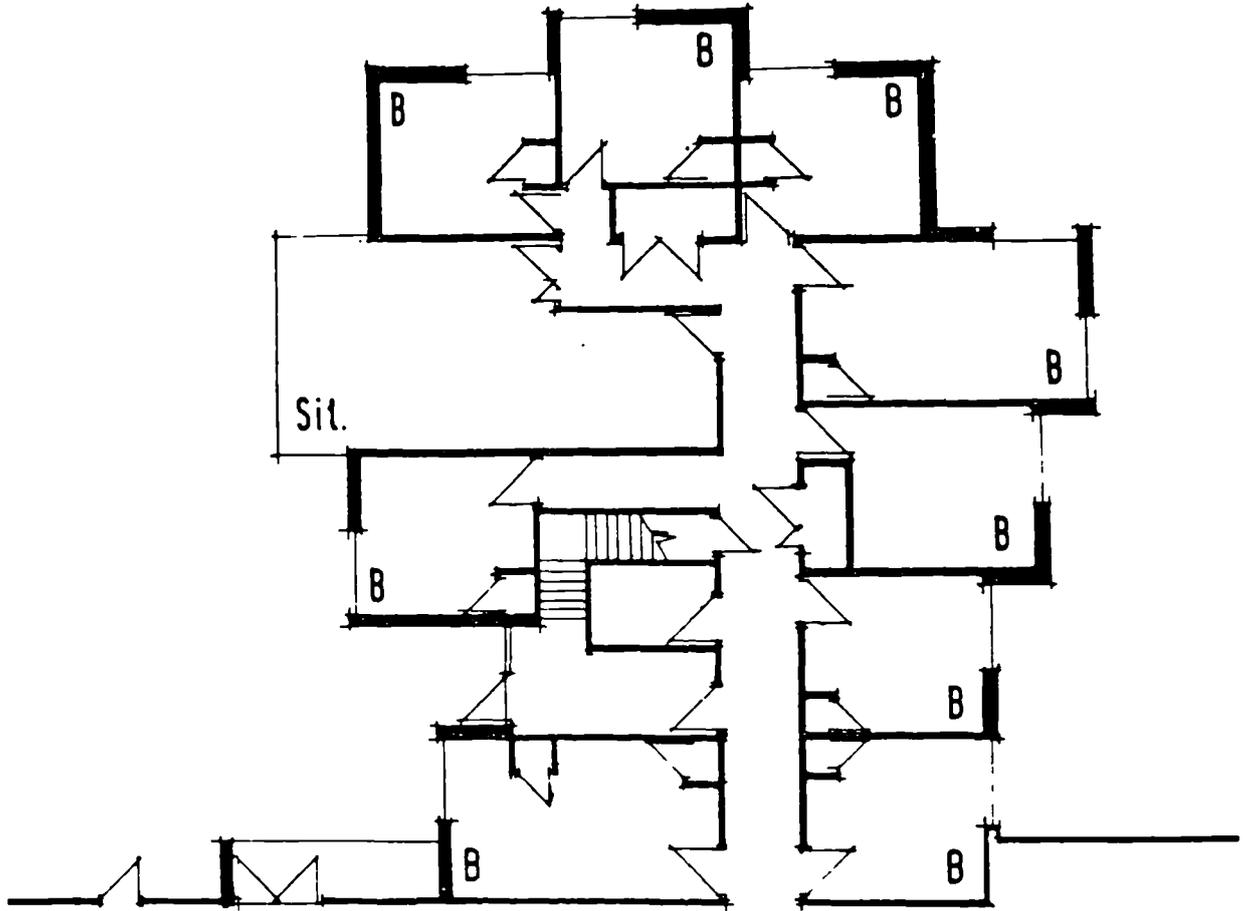
One possible link is the concept of "meaningful" decisions or "landmarks". In a communal home, such as that shown in diagram 9.2, simple decisions tend to occur when a sitting area or other "zone" is encountered. Places that are actually used by residents are likely to mean something to them: at such a point they have to think about where they are going. If a corridor is too long they may forget where they are going by the time the next decision point is reached.

The positive effect of elaborate decisions in group homes also supports this concept of using the decision points as landmarks. Given the usual design features of homes for the elderly these elaborate decisions tend to occur where bedrooms or doors to communal areas are positioned on junctions, or when dining and seating facilities are in the same area. Again these are places that are used very frequently, and are therefore more memorable to the residents.

Using this framework an unhelpful design would result when there are a lot of "meaningless" decisions. In communal homes this would occur when there were few identifiable "zones" and long corridors with lots of doors. In group homes this might occur when there were many short corridors within the group sections forming a "maze" effect. Diagram 9.5 illustrates a single group where there are a number of corridor junctions, few of which are likely to have any particular meaning to the residents.

Thus "meaningful" decisions as landmarks would anticipate the results achieved: a negative effect from doors per corridor in communal homes, a positive effect in group homes. Simple decisions in communal homes provide aids where there are long corridors. In group homes the more complex decisions are more distinctive.

Diagram 9.5
The "maze" effect



If such an interpretation is confirmed by future research this could have useful implications for both the design of facilities for people with senile dementia and for the use of existing buildings.

9.8 Conclusion

The analysis is essentially exploratory in approach so the conclusions drawn should be treated with some care. The "coping response" measure, of a resident's ability to find their way around a home, is newly devised and therefore not authenticated. Although the 13 homes provided a good variety of design features they could not be said to be fully comprehensive in covering all types of design. Moreover, the nature of stepwise analysis is such that variables which should be included are sometimes omitted because of their co-variation with other variables. The nature of the route diagrams are such that certain measures are highly correlated. For example, length of route and number of simple decisions upon that route ($r=.87$). However, both of these variables were included in the resulting equations so this has not proved a problem. The danger is, in this situation, that one of the variables has entered as a proxy for another. The possibility always remains, moreover, that important variables have been omitted from the analysis entirely.

However, with those reservations in mind, the analysis provides a useful starting point for further work. The "Find" measure, if authenticated, could prove a useful tool for assessing the impact of the physical environment on demented elderly people. Individual route diagrams may also form the basis of an approach to providing a picture of the residents experience of their environment. This initial investigation of the relationship between these methods would appear to support the current trend towards group-living in homes for the elderly. On this basis the most important aids to people finding their way around would appear to be the level of ambient lighting and "meaningful decisions".

The hypothesis that underlies the above analysis is that the ability of residents to move around the home without getting lost represents a "coping response" rather

than a final outcome measure of the effect of the design on residents. This response will, in itself, affect behaviour and perhaps orientation more generally. This should be included, therefore, in the analysis of the final model.

In addition to the physical effects of the homes' design reflected in the "coping response" of ability to navigate the homes, some aspects of the physical environment may directly impact upon residents' behaviour. The possible effects of the ambience and personal territory have been discussed above. These are incorporated in further analysis by a set of individual measures intended to reflect these aspects of the environment. In the examination of the concept of personal territory there is some evidence to support the hypothesis that the "own chair" culture is a response by the home to limited personal territory for residents. The concepts are elusive to measure and no firm conclusions can be drawn. However, it is of interest to see if the "own chair" culture has an impact on residents change in behaviour and orientation.

CHAPTER 10

THE MODEL: THE EXPLORATORY ANALYSIS

Introduction

From the analysis to date a complex picture has emerged of the relationship between residents and the physical and social environment of homes for the elderly. The question to be addressed here is whether a model of these relationships can be formulated which aids our understanding of the effects on demented residents of the environment of homes for elderly people.

To recap, the hypothesised model is one in which changes in competence and behaviour are a function of personal and environmental influences. This is not a straightforward relationship, and for the purpose of exploring the data to identify environmental effects, simplification of the underlying model is required. For example, "coping responses" are hypothesised to intervene between many aspects of the environment and behavioural change. These can be represented by the relationship between specified "environmental" variables and the measures of outcome.

In this chapter therefore, a simple linear relationship is assumed between a selected few "dependent" variables and the "independent" personal and environmental influences. At this stage these relationships are assumed to be independent of each other. This enables an exploratory approach to identify which of the influences appear to have an effect on each outcome. This should be seen as an hypothesis forming process rather than any proof of causal effects. Some of the assumptions that needed to be made at this stage were later relaxed (see chapter 11).

In chapter 5 some of the difficulties and drawbacks of this type of study were discussed. One of the major difficulties in any exploratory analysis is that by pure chance there may be associations between variables which could be interpreted as causal relationships by the ever hopeful researcher. Balanced against this "Type I error" is the "Type II error" in which evidence of causal relationships is overlooked

or ignored. This could be because the data do not reflect the relationship or because an incorrect theoretical interpretation is made. The Type II problem can only be approached by a cautious interpretation of results and the acknowledgements of the limitations of this type of study.

In order to minimise the "Type I error" problems, however, use can be made of statistical techniques identifying clearly the assumptions that are needed. The techniques cannot be used in isolation: statistical relationships are not necessarily causal relationships and theoretical interpretation is an essential component of statistical analysis. The design of the study and the methodological issues involved are discussed in chapter 5. In the following chapter the statistical method to be employed is first discussed, identifying underlying assumptions and possible pitfalls. This is followed by a theoretical discussion of the variables to be included in the analysis. An assessment is made of the statistical validity of the exercise before the results are described and interpreted.

10.1 Methodology

Multiple regression analysis was used to examine the relationship between the personal competence, the environment and changes in the behaviour and orientation of the demented residents of homes for elderly people. Descriptions of regression analysis are available elsewhere (eg Maddala, 1986). To set the possible threats to statistical validity into context, however, the assumptions made when ordinary least squares regression analysis is used can be summarised as:

- the expected value of the residual or disturbance term is zero.
- the error term is normally distributed with a fixed variance
- the error term is independent of the values of the independent variables.

These assumptions would be violated if an important variable were excluded from the model. The coefficients are assumed constant so the relationship between the independent and dependent variables does not vary over time or between people.

Under these assumptions the method of least squares gives estimators of the coefficients that are unbiased and have minimum variance among the class of linear unbiased estimators (Maddala, 1986).

In the current study a few variables were entered directly into the equation using ordinary least squares and the remaining variables were included using stepwise analysis. The stepwise-regression procedure uses a combination of forward and backward selection procedures to decide which variable to include and which variable to eliminate. These use the partial correlation coefficients to determine the variables to include or exclude as long as the F value associated with each variable is above or below a specified value (Maddala, 1986). This requires the specification of two F values. In this analysis the F value which determines the addition of variables was set at $p=.1$ and the F value which determines the variables to be deleted was set at $p=.15$.

A major problem in the use of stepwise regression is that inevitably mis-specified models must have occurred during the analysis. Thus chance associations may be included without any underlying causal effect. It is important, therefore, to be aware that this is very much an exploratory approach used to help identify which of the variables hypothesised to affect demented residents appear to have an influence on the chosen outcome measures. It is not a method of confirming specific hypotheses.

10.1.2 Multicollinearity

Multicollinearity occurs where an independent variable represents a near linear combination of one or more other independent variables. The underlying assumption of this model is that the environment and the residents are mutually interactive. Inevitably, therefore, multicollinearity is likely to arise. Moreover, there are a limited number of homes in the study and some variables such as level of lighting will be the same for all residents in each home. This will also lead to a degree of co-variation in the independent variables.

The difficulty is that a large number of independent variables (54) have potential theoretical reasons for being included in such a model with only 78 observations. The multicollinear nature of the data set together with the low number of degrees of freedom, were the whole model to be tested as simple linear regression, would make the problem of identifying the important influences virtually impossible. The method chosen was intended to minimize the problems of mis-specification while allowing an exploratory approach to the analysis.

10.1.3 Method of Estimation

A small number of variables were entered into the equation initially on theoretical grounds. The remaining variables were allowed to enter using stepwise analysis on two sets. The first set included "personal system" variables indicating abilities or competence and descriptive factors such as sex. This was in order to allow for these influences before examining the effect of the environmental effects, both direct and indirect (eg the ability of residents to find their way around the homes).

A major difficulty that is likely to occur in a data set of this sort analysed in this way is that the implicit multicollinearity of the data set will affect which variables are included as part of the stepwise procedure. The correlation matrix was assessed and high correlations noted where they existed. The examination of the correlation matrix revealed that the problem did not seem to be excessive. Less than 4% of the correlations between any two of the independent variables were greater than .5. Variables were identified which had high partial correlations with more than one other variable, and it was considered should be included on a theoretical basis (see Appendix 8). They were excluded from a re-run of the analysis but found not to affect the resulting model.

However, it is possible for pairwise correlations to be low but multiple correlation coefficients to be high. In these cases an independent variable can represent a near

linear combination of several other variables. During the course of the analysis one such occurrence was identified and is discussed in section 10.4.4.

It is impossible to be sure that other examples of multicollinearity did not exist and prevented a significant effect from being identified. Moreover some variables were intended to represent a combination of effects, such as the positive and restrictive regime "dummy" variables. An important limitation on the following model, therefore, is the possibility that one or more important influences may have been omitted from the model.

In the following analysis the theoretical implications of the directions of influence identified by this procedure have first been considered. The residuals of the estimated model are then examined to identify any evidence of mis-specification or departures from normality that might make any subsequent tests invalid. Only then is the interpretation of the model itself discussed in any detail.

10.2 Identifying Outcome Measures

The ultimate outcome or final output of a service is the welfare of the client or resident. A reliable measure of welfare for demented people has yet to be identified and the approach here is to use a model in which the outcomes are defined in terms of behaviour and orientation (see chapter 4).

The measures used were all indicators of change over time. This was in order to try to identify the effect of environmental factors on the resident rather than which types of environment and resident are associated. This latter can reflect policies of admission as much as causal effects. There is a major difficulty with using indicators over time as measures of outcome, however. While change over time means that possible bias from selectivity of residents is allowed for, there are inevitably people for whom no information is available at the second stage of the study. This may be because they have died, or because they are unavailable for assessment having been transferred to another home or hospital. In this study

there was also one refusal of interview at the second stage (the lady thought the interviewer was from the police). The charge can be made that the results will therefore be biased because there may be a fundamental difference between the survivors and non-survivors. Table 10.1 shows the destination outcomes for the sample residents in the study.

Table 10.1 Destination Outcomes

Outcome	Number of Residents
Remained at the home	79
Short term hospitalisation	2
Transferred	2
Hospitalised	3
Died	18
Total	104

The assumption made for the current analysis was that over a six month period death and temporary hospitalisation were random events. However, it is less reasonable to assume this for long term hospitalisation and transfer to other establishments. Such moves may reflect a lower level of tolerance for certain behaviours by some establishments, or a negative effect upon the resident resulting in more serious decline. Thus a non-random distribution of non-survivors would be expected. Only five people (4.8% of the sample) fell into this category, so, given the assumption of "random" death and illness resulting in hospital admission (20 cases in all) this source of bias would appear limited. In practice one source of bias was identified: two of the four sample residents in one home were transferred during the study period. This is discussed further in section 10.4.

In three cases the indicators of outcomes used were changes in CAPE scales:

Change in the level of socially disturbed behaviour

Change in the level of apathy

Change in the level of orientation

One other experimental measure was also incorporated. This was based on asking Officers-in-Charge in the pilot study how they judged the welfare of demented residents. The replies were consistent and concerned the behaviour of the person. Generally, agitation was a sign of a problem and smiling was taken as an indicator that all was well. A simple scale, or agitation-smile index was devised based on the codings used for the CAPE sub-scales. Change in the score of this scale was also used as an outcome measure.

The disadvantage of the scales used were that they were relatively short (see table A8.2, Appendix 8 for descriptions of the distributions) so there was a limit to the degree that they could vary. It was also noticeable in interviewing residents that the score of zero for orientation covered a range of situations - from residents who barely responded to touch, to residents who couldn't quite remember their surname but were happy to chat anyway. A degree of variation in the residents cognitive state has, therefore, not been covered in the study. However the three principal scales have been well verified (see chapter 5) and the outcome measures varied sufficiently for the purpose of the model. The distributions of the outcome measures are shown in tables A8.3-A8.6 in Appendix 8.

10.3 Independent Variables

As has already been stated, few of the variables can be regarded as truly independent. However, multivariate analysis can help to identify which variables explain a significant amount of variation in the dependent variable after allowing for expected influences.

Inevitably, the classification of variables in the following section uses definitions which are, to a certain degree, arbitrary. For example, the dimensions of privacy

and territory are very closely linked. In this discussion, territory has been represented as an aspect of the physical environment and privacy of the social environment. Both will be affected by social and physical factors. Whether residents have single bedrooms can be seen as an aspect of both privacy and territory, but has been included here as the latter. The use of psychotropic drugs has been included in the discussion of the environmental influences because the use of drugs may reflect the type of caring regime, although drugs themselves are part of the personal system rather than the environment. Descriptions of the sources of data used to construct the variables and the distributions of the variables can be found in tables A8.1 and A8.2 in Appendix 8.

10.3.1 The Variables Entered Initially

In chapter 4 three underlying influences on change were identified and discussed. In the analysis the level of each dependent variable (social disturbance, apathy, orientation and the agitation-smiling index) at time 1 was included first, to control for the initial state of the sample resident. The initial level of apathy, for example, is a fundamental influence on the degree to which apathy is likely to increase. An indicator of depression (see Appendix 8) was also included to allow, in the absence of clinical diagnosis, for the degree to which any effects were due to depressive rather than organic causes. Thirdly, the length of stay of the individual in the institution indicated for how long they had been exposed to the present environment or "treatment".

10.3.2 Personal System

The variables that were included at the stepwise stage were largely based on sub-scales of CAPE and can be found in Appendix 8. The levels of change in orientation and mental ability over the six month period were included as personal characteristics that might influence the change in apathy, socially disturbed behaviour and the agitation-smile index. This was to allow for any changes that resulted from underlying organic deterioration. Similarly the change in the mental ability score was included as a possible influence upon the change in orientation.

An indicator of change in depressive symptoms was included to allow for changes in any underlying depressive state.

Other sub-scales from CAPE were included to indicate the effect of apathy, socially disturbed behaviour, communication difficulties and physical disability. Deafness was hypothesised to affect dementia symptoms (see chapter 4) and was included as a possible personal influence. Variables indicating the residents' age and sex were also included.

The indicators were intended to reflect competence or personal influences on competence, such as the tendency to react in a socially disturbed or apathetic way. Specific behaviours such as wandering that could be represented as outcomes from this type of model rather than causal influences were excluded. The effects of such behaviours are hypothesised to affect outcomes via other variables such as the resident's orientation skills within the home, or level of social disturbance.

10.3.3 Supra-Personal Environment

An important issue in the care of demented elderly people is the use of specialist homes. A "dummy" variable indicating whether a home was specialist or not was intended to pick up any policies that were common across specialist homes. To a large extent, however, the differences between the specialist and non-specialist homes were reflected by variations in the resident and staff populations.

i) Residents

Information regarding the other residents in the home related to the proportion of residents judged by the officer-in-charge to be moderately or severely confused, the proportion who were short-stay, and the turnover of residents. A variable that indicated whether any elderly clients came into the home to receive day care, was also included. It was anticipated that a high proportion of confused or short-stay residents and a high turnover of residents in the home may all have a disruptive effect on the sample residents. The possible effect of short-stay residents in

discouraging the formation of a positive regime was discussed in chapter 8. Previous research (eg Edwards and Sinclair, 1980; Allen, 1986) also indicates that the expected effect of day care in the home, as opposed to in separate facilities, might be disruptive.

ii) Staffing

A number of different variables were included to give an indication of staffing influences. The ratio of care staff to residents, the turnover rate, and the level of staff sickness in the six month period were all included. These were intended to reflect the availability and stability of the care staff. Variables indicating the proportion of staff who had nursing, social work and in service training qualifications were also included. The type of qualification was hypothesised to affect the way that staff cared for and interacted with residents. Another variable giving the proportion of staff who had any qualification at all was intended to demonstrate the importance attached to the issue by the home management.

Another variable, derived initially from the MEAP rating scale, was intended to reflect the level of staff functioning. This had to be dropped from the analysis when it was found to reflect a near linear combination of a number of different variables. 90% of the variation in this item between the homes was explained by the proportion of staff who had nursing qualifications, any qualification, in-service training and the existence of a positive regime.

10.3.4 The Social Environment

i) Environmental System

Variations in the overall social environment were incorporated by using indicators of stimulation, regime and social climate. For an indicator of stimulation at the level of the environmental system an item which reflected variations in the monthly "rate" of activity between homes was included (see chapter 7).

The classification of the regimes of the homes derived in previous analyses (see chapter 8) were incorporated using two dichotomous variables to identify whether homes had positive or restrictive regimes. It was hypothesised that a positive regime should have a beneficial effect and a restrictive regime would be dependency inducing. The SCES sub-scales, from which these classifications were derived, were also included separately, to reflect specific aspects of the social climate. Where the homes were organised on a group-living basis the SCES sub-scales for the group were used.

ii) Individual experience

As discussed in Chapter 7 the individual regime proposal was not pursued but some of the individual measures used, such as choice of what to wear on a daily basis were. It was considered that such measures might give indications of the type of individual regime while also remaining clear measures of specific treatments.

At least one measure from each of the originally hypothesised aspects of individual regime was included. Indicators were excluded if they showed lack of variation between residents or if they had been found unreliable in practice. Those variables which were proposed to reflect aspects of the regime, but which are unlikely to have an effect on the resident on a day to day basis, such as choice of new clothes, were also excluded. The variables included in the analysis are identified below. Appendix 5 gives details of the excluded variables.

a) Relationships

Whether or not the resident had any friends in the home, be they other residents or members of staff, is an important aspect of the social environment. In Chapter 3 it was noted that among non-demented people the existence of a confidante has been shown to affect outcomes. The social atmosphere and personalities of the other people in the home as a whole may be as much an influence on the incidence of friendship as the personality of the resident. Thus the existence of friends among

the staff and residents is represented here as an "individual experience" of the social environment.

"Privacy" was included as an aspect of the relationships dimension of the social environment because it represented the degree to which residents could be separate from the community in which they lived. Whether residents were allowed the use of a locker or lockable drawer was incorporated as an indicator of the privacy allowed the resident.

b) Personal Growth

Personal growth was hypothesised to include "freedom", "background" and "stimulation" in chapter 4. An item reflecting whether residents were allowed to use the grounds of the home unaccompanied was included as an indicator of their freedom of movement.

While visiting rates were originally conceived as part of the continuity of care or "background" for residents they are likely to have other effects. Contact with relatives and outside friends was hypothesised to have a favourable effect, both in terms of orientation, by keeping continuity with the resident's life prior to admission, and in the welfare provided by the social contact with people with whom there are long established relationships. The measure used was an indicator of the monthly frequency that residents were visited.

The level of stimulation residents experience will reflect both the residents' desire to engage and what there is to engage in. Indicators of engagement are normally estimated by extended observation. As this was not possible given the current scope of the study the level of stimulation was estimated by asking what activities the resident took part in, both with others and individually, and how frequently. A crude monthly level of "individually experienced" activity was thus compiled (see table A8.1 Appendix 8). Engagement is hypothesised to be a positive "coping response" to stimulation.

c) System Maintenance and Change

The indicators of system maintenance and change at an individual level were hypothesised to be "regimentation", "control", and "planned care". The concept of regimentation did not transfer well to the individual level. Given the analysis in chapter 7, the variable indicating whether residents had their bedtime set by staff has been taken as an indicator of their level of daily control rather than of regimentation. Choice of daily clothes was also taken as an indicator of control in day to day matters. The existence of a care plan or policy was used as an indicator of a planned attitude to caring for residents.

10.3.5 Physical Environment

i) Environmental System

The aspects of the overall physical environment that were hypothesised to influence demented residents were the design, the ambience (light and noise levels) and the importance of territoriality in the home. Design aspects, such as whether or not the home was of group design, were not included as the effects of these were hypothesised to occur through the "coping response". This assumption allowed some reduction in multicollinearity, as the group homes tended also to be specialist. The assumption was tested, however, by examining the residuals of the analyses.

Assessments, using the MEAP rating scale, were made of the level of light and noise in the home. A quiet bright atmosphere has been described as most suitable for demented residents (Feier and Leight, 1981). The SCES sub-scales include a physical comfort dimension which gives a rating by the staff in the homes of this aspect of the home.

In chapter 9 the concept of territoriality was discussed. In many homes (8 of the 13 included in the study) all, or nearly all, residents have their "own" chair. Major rows have been reported anecdotally over infringement of the territorial rights these are taken to represent. There was no suggestion that this was the result of

staff pressure though there was some evidence of a favourable attitude (some staff members maintained that most people have their "own" chair at home). The existence of such unwritten rules about rights over use of space in the home reflects socially accepted norms amongst the residents themselves. In chapter 9 the average size of bedroom area and the "own chair" home culture were shown to be associated. An indicator of the existence of this "own chair" culture was included, therefore, as a crude monitor of the importance of territorial rights between residents.

ii) Individual Experience

The most important aspects of the physical environment, that are hypothesised as part of the individual demented resident's experience, are territory and complexity. In chapter 9 the relationship between the "coping response" of a resident finding his or her way around, and the "individual experience" of the complexity of the building was explored. The type of effect was found to be related to the overall design type of the home. The "individual experience" of the routes around the homes is not hypothesised to affect outcomes directly. The interest is rather in the relationship between the coping response and the measures of outcome. The "individual experience" of the physical environment is thus limited to indicators of territory.

The "individual experience" of territory was included by using three variables. One of these was a "dummy" variable that indicated whether residents had single bedrooms. A high level of privacy and sense of territory may result from having a single room. Another "dummy" variable indicated whether the resident had changed their bedroom in the six month period of the study. Change of bedroom may disorientate or disrupt residents by changing their territory. The third variable indicated the "size" of the personal territory. The bedroom area that appeared to "belong" to the resident was measured in square metres.

Only 38% of the sample had personalised their bedroom to any obvious degree. This may reflect the way such a policy is implemented as much as the ability or the motivation of the residents and their relatives. Chapter 3 identified the importance of personal possessions in the way people are perceived and thus treated by others. It may also reflect the degree to which a resident treats the room as their own. Thus a "dummy" variable indicating whether a resident had personalised his or her bedroom to any significant degree was included.

iii) Coping Response

It could well be argued that residents' ability to avoid getting lost within the home environment is more of a competence than an environmental effect. However, the ability of demented residents to find their way around the home has been used in the current analysis to represent a "coping response" (see chapter 9) to the complexity of the environment. It has thus been included in the model with the environmental effects. It is hypothesised that, being unable to find a bedroom or toilet when needed, will increase a resident's sense of disorientation and estrangement from their environment.

10.3.6 Psychotropic Drugs

One other variable included was the number of psychotropic drugs being taken. Ideally in a study of this kind allowance should be made for the likely effects of each drug being taken. However, all that was intended to be taken into account by this variable was the possibility of side effects resulting from too many drugs (Wade et al, 1983). To a lesser extent this also reflected the degree to which drugs were being used as a control mechanism by the home.

10.4 Analysis of Residuals

Before looking in detail at the implications of the resulting models it is important to examine the residuals for evidence of mis-specification which can result in non-normally distributed residuals and outliers.

Throughout the remaining discussion there it is assumed that, given evidence that the assumptions of the regression procedure have not been violated, the usual statistical tests of significance will be valid. The use of the stepwise technique in establishing the variables to be included in the model means this is not strictly true (Maddala, 1986). In any body of data there will be associations that may be coincidental rather than causal, and exploratory techniques will be as adept at finding these as at finding any associations resulting from underlying causal processes. The importance of interpretation and the use of theory in using these techniques has already been emphasised. The results of the statistical tests and the probability levels have been reported in order to demonstrate the strength of the association found, not true tests of significance.

One assumption of statistical tests used to assess the results of regression analysis, such as the t test, is that the residuals should be normally or close to normally distributed around a zero mean. Large standard deviations and outliers, in which the standardized residual has a value greater than 3 are indicators of deviations from normality

Table 10.2 Residual Statistics

	Residuals		Standardised Residuals	
	Mean	SD	Mean	SD
Change in Social Disturbance	0.04	1.38	0.03	0.97
Change in Apathy	0.00	1.19	0.00	0.93
Change in Orientation	0.00	1.02	0.00	0.94
Change in Agit-smiling index	0.02	0.74	0.02	0.96

Table 10.2 shows the mean and standard deviations for the residuals for each of the equations resulting from the analysis. In Appendix 8 the range and distributions of the standardised residuals are given and shown against normal probability plots.

Examination of these shows no obvious deviations from normality and the mean is close to zero. There are no standardised residuals with a value greater than 3.

10.4.1 Heteroskedasticity

Another problem that may arise in regression analysis is heteroskedasticity in which the standard deviation of the residual is not constant. This can be a structural relationship implicit in the model: eg the amount people spend on goods varies more the more people consume because of increased flexibility at higher income levels. There would seem to be no a priori reason for this problem on theoretical grounds. However, the limited nature of the scales might affect variations in change recorded. The residuals were plotted against each of the variables included in the equation, therefore, and examined for evidence of heteroskedasticity.

Diagrams 1 to 4 in Appendix 8 show the standardised residual for each equation plotted against the standardised dependent variable. Inspection of these seemed to indicate that heteroskedasticity may be a problem, so a Goldfeld-Quandt test was carried out where possible. For two equations, where in fact the visual evidence for heteroskedasticity was rather less marked than in the other models, it was not possible to clearly define two groups of the same size. A test would not have been valid under these circumstances. The results of the analysis for social disturbance and agitation-smiling index are reported in table A8.7 in Appendix 8. There was no significant evidence of heteroskedasticity and the issue was not pursued further.

10.4.2 Non-Linear relationships

The assumption has been, in formulating the variables and estimating the model, that the relationship between the dependent and independent variables is linear. Observation of the residuals plotted against the dependent variables (see diagrams A8.1, A8.3, A8.5 and A8.7 in Appendix 8) may lead one to question this assumption as in each case it would appear that there is a positive relationship between the residuals and the value of the dependent variable. However, if the underlying relationship were non-linear a similar pattern would be expected between the

predicted dependent variable and the residuals. Diagrams A8.2, A8.4, A8.6 and A8.8 in Appendix 8 show no such pattern. The apparent relationship between the residual and observed values of the dependent variables simply reflects the relatively low explanatory power of the equations. A very low observed value is more likely to be lower, and a very large value higher, than the model predicts.

10.4.3 Mis-specification

Any evidence of non-linearity would have been an example of a mis-specified model. Another example of mis-specification is when an important variable is omitted from the model. In order to check as far as possible for this problem the residuals from the analysis were saved and an analysis of variance carried out for effects which it was hypothesised may have been excluded because of the problems of multicollinearity.

The effects tested were variables, excluded from the estimated equations, that were known to be highly correlated to a number of other influences in the model for structural reasons. For example; the home type, specialist or non-specialist, was related to staffing levels ($r=.84$) and the proportion of "confused" residents ($r=.60$) among other aspects. The influence of the existence of a "restrictive" regime and the design of the home (group or communal) were also tested. The level of staff functioning measured by the rating scale had been excluded because of collinearity (see section 10.3.3) so the relationship between this variable and the residuals was also examined. The residuals were not significantly related to any of these effects (see tables A8.8 to A8.11, Appendix 8).

The same analysis was used to investigate whether there was any systematic "home effect". This would be the equivalent for this type of study to serial correlation in a time series investigation in which the residuals are systematically related over time. No systematic effect was found but high average standardised residuals for the social disturbance analysis was found for one of the homes. For residents in Centrelea the mean standardised residual was 1.48, which was significantly higher

($p < .05$) than the other homes (mean = -.01). The inclusion of a "dummy" variable for this home in the estimated equation for change in social disturbance indicated that this home effect was significant ($b = 2.89$, $t = 2.55$, $p < .05$). Moreover, of the four sample residents who were in this home at the start of the study two were permanently transferred by the end of the six month period. There was a potential source of mis-specification therefore, as no information on the state of transferred residents at time two was available and the only remaining residents' social disturbance had deteriorated by more than would be predicted by the model.

It is not possible to allow for this source of mis-specification. The introduction of a "dummy" for the home effect would further increase the mis-specification because of the lost cases and the small number of remaining cases. However, the direction of the influence of the home is clear as the remaining residents had a higher level of social disturbance than would be expected and residents who are exhibiting a high level of social disturbance are more likely to be transferred from a non-specialist home. Analysis of the circumstances of the residents in the home may therefore yield some clues to the omitted effects. These are discussed in section 10.5.1.

10.5 Results

The analysis of the residuals has identified areas of concern, where caution should be used in interpretation. This interpretation is, however, the focus of interest of the study. The following discussion examines each of the equations in turn and describes the results. The conclusion draws these together briefly and chapter 11 analyses the model as whole in more depth. Four equations were estimated to assess the environmental influences on demented residents:

- Changes in socially disturbed behaviour
- Changes in apathy
- Changes in orientation
- Changes in the agitation-smiling index

10.5.1 Change in socially disturbed behaviour

Table 10.3 shows the results of the analysis of the model when the change in socially disturbed behaviour is taken to be the dependent variable.

Table 10.3 Analysis of Changes in Socially Disturbed Behaviour

Dependent variable: Change in socially disturbed behaviour. Higher score=increase in social disturbance

	b	t-Value
Constant	4.05	2.98 ***
<u>Personal Characteristics</u>		
Depression	0.25	2.15 **
Length of stay	0.10	1.26 ns
Social disturbance, time 1	-0.57	-7.03 ***
Communication diffs, time 1	-0.49	-3.16 ***
R ²	.40	
Adj R ²	.36	
<u>Environment Characteristics</u>		
Positive regime	-0.88	-2.20 **
Quiet	-0.59	-3.06 ***
Resident turnover	2.16	1.88 *
Number of psychotropic drugs	0.41	2.34 **
Chooses what to wear	-0.77	-2.01 **
R ²	.55	
Adj R ²	.49	
n = 79		
F statistic.	9.28 ***	

Effect of inclusion of Environment Characteristics

Increase in R² .15
F statistic 4.73***

ns p > .10
* p < .10
** p < .05
*** p < .01

i) Personal effects

The high level of significance and negative effect of the initial level of socially disturbed behaviour upon a change in socially disturbed behaviour reflects the

limited nature of the scale. Once a high level of socially disturbed behaviour is indicated there is a limit to the amount an increase is measured. Length of stay did not have a significant effect, but the existence of depressive symptoms did raise the chance of there being a deterioration in behaviour.

The apparent effect of communication difficulties in reducing socially disturbed behaviour may reflect a tendency among people with communication difficulties to withdraw rather than express their frustration. Certainly the initial level of apathy was more highly associated with communication difficulties ($r=.39$) than social disturbance ($r=.01$). 40% of the variation in the change of socially disturbed behaviour could be explained by these personal effects

ii) Environmental Effects

Only one aspect of the personal system was included as part of the environmental influences because, as a direct "treatment", it may be influenced by the policy of the homes. This was the number of psychotropic drugs a resident was taking at time 1. Additional drugs may be prescribed in an attempt to control deteriorating behaviour. The higher the number of drugs taken, however, the more likely the incidence of adverse reactions or difficult behaviour (Wade et al, 1986). The association between a higher number of drugs and increased socially disturbed behaviour ($p<.05$) would indicate that either the drugs are ineffective in controlling disturbed behaviour and/or that adverse reactions are occurring among residents.

One aspect of the supra-personal environment, turnover of residents, was associated with increased social disturbance of the sample residents ($p<.1$). A higher turnover may be associated with a less settled and predictable atmosphere. Even in group-living homes residents will be living with many more people than they did before admission. Simply the change in the faces and the different social atmosphere resulting from different people may be sufficient to have a deleterious effect on disturbed behaviour.

Increased social disturbance was also associated with higher noise levels in the homes ($p < .01$), an aspect of the physical environment. It was hypothesised that a quiet, settled atmosphere would have a positive effect (Feier and Leight, 1981). It is also possible that a high noise level may have a disruptive effect on residents. Residents "setting one another off" was reported anecdotally during the study: if one resident starts shouting or moaning, other demented residents will frequently follow suit. Another major source of noise in homes was television sets, which often had the volume set high to aid residents with hearing difficulties.

The social aspects of the environment that were associated with a lower level of disturbance were the existence of a "positive" regime in the home as a whole ($p < .05$) and the resident choosing what to wear each day ($p < .05$). As an experimental method of describing homes, this association between a "positive" regime and behaviour provides evidence in favour of the validity of the measure. While the description does not provide direct practice implications for the care of demented elderly people, it does provide a method of relating a set of influences on outcomes for confused residents. The homes with a positive regime encouraged the independence and influence of the residents more than the other homes. The level of "cohesion" and "organisation" in these homes is also generally higher.

The choice over what to wear each day was included as an individual indicator of the attitude to the resident in the home. Where residents chose what they wore it was hypothesised that they would tend to be encouraged to exert control over their daily lives. If this underlying assumption is correct, a higher level of "control" had in this study, had a positive effect upon residents' behaviour.

iii) Effect of Centrelea

In the analysis of the residuals a possible source of mis-specification was identified for this analysis. Two of the four residents of Centrelea were transferred during the study and the remaining two had significantly higher standardised residuals than the other homes. The above interpretation of the results should be treated with

caution. It is, however, of interest to see how the initial circumstances for the four residents differed from that of other residents in the sample to see whether the clues to the omitted influences conflict or concur with the interpretation of the results so far.

The values of all the variables identified in Appendix 8, other than those indicating change, were examined and one-way analysis of variance was used to identify the significance of the differences found. Of the personal characteristics the only significant differences found were that the residents of Centrelea were more physically disabled ($p < .01$) and socially disturbed ($p < .1$) than in the other homes. This last effect is to be expected, if the effect of the home environment is that of increasing social disturbance, rather than a lower tolerance for difficult behaviour.

The higher level of physical disability was interesting to note, especially in the context that the residents of this home were also significantly less able to find their way around ($p < 1$). Wheelchairs were noticeably more in evidence in this home where corridors were long and the dining area distant from many of the sitting areas

In the home as a whole there were significantly fewer residents judged to be moderately or severely confused ($p < .1$), which is what would be expected in a non-specialist home. No residents at the time of the initial approach to the home were short-stay. A significantly lower level of "conflict" than in the other homes, using the SCES sub-scale ($p < .01$), a stable staffing situation with a low turnover ($p < .05$) and rate of sickness ($p < .01$) compared with the other study homes, are factors that are unlikely to contribute to higher social disturbance. However, significantly fewer staff had social work qualifications ($p < .1$) and the SCES sub-scale of organisation was significantly higher ($p < .05$). All the sample residents had set bedtimes and none of these residents had personalised their rooms to any obvious degree. This may indicate that the "locus of control" was heavily biased towards the institution rather than the residents in this home.

In comparing the residents on the basis of variables included in the model, the home had a significantly higher noise level ($p < .01$) than the other homes and was of the mixed regime type. The turnover of residents was close to the average of the other homes (93% compared to the average of 89% in the other homes). None of the residents were taking any psychotropic drugs and none of them were allowed to choose their own clothes for daily wear.

The picture that emerges from these relationships is of a home which is run generally more to the benefit of the staff than the demented residents. It is easier to put someone in a wheelchair than to guide and reinforce routes. It is easier to choose for, than assist in the choice of, a demented resident. It is also easier to put residents to bed when it suits staff, if the residents can't find their way and need assistance

The residents of this home were not more demented than residents of other homes; their average scores for mental ability was 5.75 compared to 4.47 for the other homes. There is no implication here that the staff do not intend to care well for the residents. The need to care for these residents, however, is expressed in a need of need to do things for residents and a tendency, perhaps, to underestimate their ability. The short term results might be a more efficient use of time, the long term results, however, are reflected in a higher level of social disturbance in demented residents

iv) Overall effect of the environment on Social disturbance

The fundamental hypothesis of this investigation is that the environment has an impact upon resident's behaviour. One method of assessing the importance of the environmental effects as a whole is to examine the change in the explanatory power of the equation when environmental influences are included. For social disturbance the increase in the proportion of variation explained by the environmental variables

was quite low (R^2 increased by .15). This was sufficient, however, to reject the null hypothesis that the environment as a whole did not affect social disturbance ($p < .01$).

10.5.2 Change in Apathetic Behaviour

Table 10.4 gives the results of the analysis of the model when change in apathetic behaviour is the dependent variable.

i) Personal Effects

The same effects of the restricted scale are experienced in this analysis as were evident in the analysis of change in social disturbance. The higher the initial level of apathy recorded, the less scope there is for the score to increase. The apparent effect is that the more apathetic a resident initially, the less likely he or she is to deteriorate. Depression and length of stay are not of significance in explaining decline but the results suggest that the more well oriented a resident is, the more apathetic they are likely to become. Again this may be the effect of a restricted scale. The very regressed who score zero on the orientation scale will have little ability to engage, and will thus appear very apathetic. This interpretation is supported by a negative relationship between apathy and orientation at time 1 ($r = -.34$). Overall, 24% of the variation in change in apathetic behaviour is explained by personal effects.

ii) Environmental Effects

The personal system treatment variable, the number of psychotropic drugs being taken by the resident, was associated with increased levels of apathy ($p < .1$). This may be due to the effect of the drugs directly. It is also possibly due to the tendency of some homes to use drugs to control behaviour.

However, the dominating influence on apathy from the results of this investigation is an aspect of the supra-personal environment: the staffing of the homes. Sickness amongst staff, staff to resident ratio and nursing qualifications among staff all have statistically significant coefficients ($p < .05$).

Table 10.4 Analysis of Changes in Apathetic Behaviour

Dependent variable: Change in apathetic behaviour. Increase in score=increase in apathetic behaviour

	b	t-Value
Constant	6.34	4.02 ***
<u>Personal Characteristics</u>		
Depression	-0.13	-0.13 ns
Length of Stay	-0.01	0.82 ns
Apathy, time 1	-0.57	-6.41 ***
Orientation, time 1	-0.17	-2.01 **
R ²	.24	
Adj R ²	.19	
<u>Environment Characteristics</u>		
Positive Regime	-0.78	-2.16 **
Staff sickness	0.28	2.03 **
Care staff to resident ratio	-6.93	-2.10 **
% staff qualified nurses	0.06	2.61 **
Number of psychotropic drugs	0.28	1.89 *
Ability to Find way around	-0.19	-2.94 ***
R ²	.47	
Adj R ²	.39	
n = 79		
F statistic	6.01 ***	

Effect of inclusion of Environment Characteristics

Increase in R ²	.24
F statistic	5.05***
ns	p > .10
*	p < .10
**	p < .05
***	p < .01

Sickness and staff to resident ratio might both indicate the level of availability of staff to residents and thus the opportunity to stimulate and motivate those resident most prone to become apathetic. It is interesting to note that the rate of sickness among care staff showed a high negative correlation to the level of in service

training ($r=-.67$). It is possible that the motivation of the staff, as well as their numbers, is of importance.

The effect of nursing qualifications is the opposite of that which might be expected in the model. A higher proportion of staff with nursing qualifications is associated with an increased level of apathy. While not suggesting that staff with a background in general nursing will actively encourage apathy, this may reflect hospital ward experience. In general wards apathy may simply not be experienced as a problem. Quiet patients can be seen in this context as "good" and "no trouble". The concept that staff with general nursing backgrounds might not see apathy as a problem would again suggest that motivation among staff is an important influence on resident behaviour.

The effect of the physical complexity of the homes was hypothesised to act upon resident behaviour via the "coping response" of residents finding their way around. An ability to navigate the home is associated with a beneficial effect upon apathy levels ($p < .01$). It would seem logical that if residents can not find their way to where they want to go that after a while they may give up and become less inclined to try to initiate activity.

The only aspect of the social environment that was associated with changes in apathy was, like social disturbance, an apparently beneficial impact of those homes with positive regimes ($p < .05$). It would seem likely that those homes that actively encourage independence would encourage staff to seek out and be aware of residents becoming apathetic and withdrawn. Again this provides more evidence in favour of the validity of the "positive" regime classification of homes.

iii) Overall Effect of the Environment on Apathy

In comparison to social disturbance, a higher proportion of the change in apathetic behaviour was attributable to the environmental influences. The increase in R^2 was

.24, doubling the proportion of variation explained. The null hypothesis that there is no environmental impact, therefore, can be rejected ($p < .01$).

10.5.3 Change in Level of Orientation

Table 10.5 shows the results of the analysis when the change in the CAPE score of orientation is taken as the dependent variable.

Table 10.5 Analysis of Effects on Changes in Orientation

Dependent variable: Change in orientation. Increase in score=increase in orientation

	b	t-Value
Constant	-5.13	-3.94 ***
<u>Personal Characteristics</u>		
Depression	-0.04	-0.43 ns
Length of stay	0.12	1.77 *
Orientation, time 1	-0.40	-5.32 ***
Mental ability, time 1	0.21	4.79 ***
R ²	.20	
Adj R ²	.16	
<u>Environment Characteristics</u>		
Positive Regime	0.59	1.84 *
Quiet	0.53	3.85 ***
% staff qualified nurses	0.08	4.09 ***
Staff turnover	-12.92	4.02 ***
Frequency of visitors	0.06	2.51 **
R ²	.45	
Adj R ²	.37	
n = 78		
F statistic:	6.11 ***	

Effect of inclusion of Environment Characteristics

Increase in R² .24
F statistic 6.01***

ns p > .10
* p < .10
** p < .05
*** p < .01

i) Personal Effects

The initial level of orientation is of importance, again reflecting the restricted nature of the scales being used. Depressive symptoms were not significant but the longer someone had been in a home the less likely they were to deteriorate ($p < .1$). This may indicate the benefit of a more well established knowledge of the environment, perhaps among those residents whose cognitive abilities have deteriorated while living in the home. Those who had a higher level of mental ability were also less likely to decline over the six month period ($p < .01$).

ii) Environmental Effects

As in the analysis of changes in apathetic behaviour, the staffing aspect of the supra-personal environment is an important influence on the orientation of demented residents. However, in contrast to their apparent effect upon apathy, nursing qualifications seem to have a beneficial influence upon the orientation of residents ($p < .01$). This may reflect a higher level of understanding of the condition or a more professional attitude to caring for people with senile dementia.

In contrast to the result found by Halbur and Fears (1986), a low turnover of staff appears to be a positive influence on residents ($p < .01$). It is probable that familiar faces provide a useful reminder and aid to orientation. It is also possible that longer established staff will be more familiar with residents and their personal histories. If staff can understand where residents are coming from they may link in better to conversations and positively reinforce fact rather than fiction.

Such a hypothesis would be supported by one of the effects of the social environment. There was a positive association between a high frequency of visitors and improved orientation ($p < .05$). In addition to familiarity and continuity, visiting can be seen as an effective form of stimulation, in which residents are likely to be motivated to respond, and in which they get one to one attention.

Again, there is encouraging evidence regarding the effect of homes with a positive regime. This is a slightly less robust result than with the first two analyses as the significance level is lower ($p < .1$) and this was the last variable to be included using the stepwise process. It was incorporated after a variable included earlier in the analysis (whether the resident was allowed in the grounds of the home unaccompanied) was removed.

The ambience of the physical atmosphere also seems to affect orientation. A quiet atmosphere is associated with improved orientation ($p < .01$) as suggested in the literature (Feier and Leight, 1981). A noisy atmosphere, particularly when the noise comes from a number of different sources, can be confusing. There may be a tendency for demented residents to shut out a noisy atmosphere which is hard to understand. This may in turn lead to an increased sense of disorientation.

iii) Overall Effect of the Environment on Orientation

The inclusion of the environmental influences as a whole resulted in a significant increase in the explanatory power of the equation ($p < .01$). In fact, as for apathy, over half of the variation in the dependent variable explained by the equation was accounted for by environmental effects.

10.5.4 Change in agitation-smiling index

Table 10 6 shows the results of the analysis of the change in the agitation-smiling index

i) Personal Effects

Personal effects explained 45% of the variation in changes in the index. The initial level of the index had the same effect as the initial levels of the other outcome measures: it acted as a control for the restricted nature of the scale. Depressive symptoms ($p < .01$) and an increase in these symptoms ($p < .1$) both were likely to increase the level of agitation and reduce smiling. Deafness also raised the index

although the effect was not significant once the environmental effects had been included in the model.

Table 10.6 Analysis of Effects on Changes in Agitation-Smiling Index

Dependent variable: Change in agitation-smiling index. Increase in score=increase in agitation and/or decrease in smiling.

	b	t-Value
Constant	0.40	1.25 ns
<u>Personal Characteristics</u>		
Depression	0.22	3.27 ***
L Stay	0.00	0.41 ns
Agit-Smile time 1	-0.70	-6.59 ***
Change in depression	0.53	1.86 *
Deafness	0.41	1.40 ns
R ²	.45	
Adj R ²	.41	
<u>Environment Characteristics</u>		
"Own" chair culture	0.56	2.82 ***
Find	-0.09	-2.61 **
R ²	.52	
Adj R ²	.47	
n = 78		
F statistic	10.84 ***	

Effect of inclusion of Environment Characteristics

Increase in R² .07
 F statistic 5.26***

ns p > .10
 * p < .10
 ** p < .05
 *** p < .01

ii) Environmental Effects

Only two environmental variables were included in the equation, both of which were intended to pick up aspects of the physical environment. Residents' ability to find their way around was seen as primarily an effect of the complexity of the physical

environment. The results of the analysis suggest that residents who can navigate themselves around the home are less likely to become agitated and more likely to smile ($p < .05$). Although the "own chair" culture is a social phenomenon, it is hypothesised to be an aspect of territoriality, resulting from lack of personal territory in the home as a whole. This was associated with increased agitation and reduce smiling amongst demented residents ($p < .01$).

These environmental effects can be seen to be related if the index is represented as primarily reflecting the level of agitation. Residents who can not find their way around the home may have additional difficulties in a social climate in which sitting in the wrong chair is actively discouraged. If a resident can not find his or her chair and is not allowed to sit elsewhere agitation may well ensue! An interaction term indicating the level of ability of the resident only when he or she was in a home with this "own chair" culture, did not prove to be statistically significant ($b = 0.10$, $t = 1.41$, $p = .16$) or add to the explanatory power of the equation, however ($F = 1.98$, $p = .16$). The "own chair" effect may merely reflect a more rigid attitude amongst residents leading to frustration in demented residents.

III) Overall effect of the environment on the Agitation-smiling Index

The environmental variables only contributed a further .07 to the R^2 . Although the increase was not large it was a significant ($p < .01$) increase in the explanatory power of the equation. It would appear, therefore, that this devised measure is reflecting, if only to a limited degree, some of the demented residents' responses to environmental influences.

10.6 Conclusion

The analysis, in attempting to establish important influences on changes in demented elderly people in residential care, has been essentially exploratory in nature.

Stepwise regression analysis as a method of exploring the data is open to criticism in that the variables included may reflect chance associations discovered by estimating a series of mis-specified models.

However, the theoretical implications of the inclusion and expected directions of influence have been closely monitored and the resulting set of equations presents a coherent and plausible set of hypotheses. The analysis of the residuals revealed no cause for concern, other than the effect of Centrelea upon the analysis of the change in social disturbance. Overall the model is one which it is worth examining in more depth.

The types of environmental influence that have been investigated have been classified as personal, supra-personal, social and physical. There was only one "personal environmental system" variable: the number of psychotropic drugs. This was related to the behavioural outcomes and indicated that there may be some problems in the use made of such drugs in some of the homes.

The results suggest that the supra-personal environment has an important effect on residents behaviour and orientation. Higher turnover of residents was associated with increased social disturbance. For both apathy and orientation staffing issues were of prime importance. The staffing influences can, perhaps, be summarised as: availability, stability and training. The contrast in the effect of nursing qualifications upon apathy and orientation is of particular interest and the implications of this finding are discussed further in chapter 12. Staffing issues have not been found here to impact directly upon socially disturbed behaviour.

As far as the social environment was concerned, the method of identifying a "positive" regime gained credibility from the analyses. It was associated with improvements in apathy, social disturbance and orientation. If confirmed in future research this could prove a useful tool to analyse the effects of specific interventions on the home as a whole.

The only social "individual experience" effects identified were choice of daily clothes and frequency of visitors. The choice of clothes was hypothesised to be

associated with residents "control" over their daily lives. Visitors, who were taken to represent continuity, relationships or meaningful stimulation, were associated with a beneficial effect upon residents by maintaining orientation.

The variables included to indicate the effect of the physical environment were more limited but of importance. The level of noise was associated with both social disturbance and orientation. Residents' abilities in avoiding getting lost affected changes both in apathy and agitation. The only territorial effect was a link between agitation and the "own chair" culture.

While of interest, the agitation-smiling index was very much an experimental measure. The results suggest that there may be some benefit in developing a measure reflecting the frustration that residents may feel in negotiating a non-co-operative environment. The intention in incorporating the measure had been to pick up an outcome that officers-in-charge were using on a day to day basis. There is little evidence of the validity of this measure, however, and it has been excluded from the further investigation of the model.

CHAPTER 11

THE MODEL: THE STRUCTURAL EQUATIONS

Introduction

In the preceding chapter the data was explored to derive four separate equations relating change in sample residents' behaviour and orientation to personal and environmental influences. The problems of drawing inferences from such an approach have already been discussed and, of necessity, the exercise has been one of hypothesis formation.

To date the hypotheses discussed have concentrated on the individual environmental influences rather than the form of the model. This chapter addresses itself to the latter problem. The need for a structural equation model is discussed, followed by a brief description of LISREL, the computer package used for analysis. The equations from the analysis in chapter 10 are then estimated using a variety of techniques. A number of assumptions made to date are examined and tested as far as possible for plausibility in the light of the new analyses.

11.1. Structural equation models

There are two principle reasons why the relationship between changes in behaviour and orientation in demented residents should be represented as a structural equation model in which a set of equations are estimated simultaneously.

- Each outcome measure refers to a change in the same individual. It might well be that someone who reacts to a negative environmental influence with apathy is less likely to exhibit socially disturbed behaviour. Thus, changes in apathy and socially disturbed behaviour would be expected to co-vary although no causal connection would be implied. Even if common "causes" of changes in behaviour had not been identified, it would be reasonable to suppose that the underlying progressive nature of the condition might affect each of the outcome measures. This again implies a covariance between the outcome measures.

- By estimating each equation separately there is a risk of excluding the influence of the other equations and thus mis-specifying the model. There is also inefficiency in that not all the available information has been used in the estimation procedure.

11.2 LISREL

Lisrel (Joreskog and Sorbom, 1986) is a general computer programme for estimating coefficients in a set of linear structural equations which can incorporate directly observed and unmeasured latent variables. The latter are hypothetical construct variables that are not observed but related to observed variables. In its most general form the model assumes a "causal" structure among a set of unmeasured latent variables. The programme can handle models with latent variables, measurement errors and reciprocal causation.

Such a programme would seem ideally suited to the difficult task of investigating the relationship between the environment and demented elderly people. The difficulties of measurement and capturing the underlying influences or "fit" have been frequently emphasised in previous chapters. However, there is one sense in which the current exercise is unfitted for a Lisrel analysis. Lisrel can offer most when the theoretical underpinnings of any data and analysis are well advanced (Hayduk 1987), but this has been shown not to be so in the current investigation. The failure to develop a measure, or system of indicators of the interaction of regime with individual residents, that at least has face validity, is a case in point (see chapter 7)

The analysis that follows, therefore, does not fully exploit the potential of this very powerful programme. However, it does provide a reassessment of the model developed thus far and brings the possibility of a full latent variable analysis a stage nearer

11.3 Methodology

Lisrel offers a variety of ways in which the coefficients of the model may be estimated. These are: instrumental variables (IV), two-stage least squares (2SLS), unweighted least squares (ULS), generalised least squares (GLS) and maximum likelihood (ML). The estimation procedure fits the covariance or correlation matrix E implied by the model to the sample covariance or correlation matrix S . Two-stage least squares and instrumental variables are ad hoc procedures which tend to be used to provide starting values for the other iterative methods. The methods of unweighted least squares, generalised least squares, and maximum likelihood, minimise a particular fitting function by successively improving the parameter estimates from the starting values. The manual and a variety of other texts in the literature provide more detailed descriptions of the models and estimation procedures (Long 1983a, 1983b, Everitt, 1984, Hayduk, 1986).

Continuous, ordinal or nominal variables can be used in Lisrel when they are regarded as "fixed", that is when there is no measurement error. In this situation Lisrel is concerned only with the conditional distribution of the dependent variables given the independent variables. If this is approximately multivariate-normal then the method of maximum likelihood may be used (Joreskog and Sorbom, 1986, pIV.2).

The model estimated was a three equation system in which the dependent variables were the change in apathy, social disturbance and orientation. The independent variables were those included in each relevant equation in chapter 10. The change in the agitation-smiling index was excluded from the final model it was of dubious validity. The only other differences between this model and that estimated in chapter 10 was that dependent variables were allowed to covary and the maximum likelihood method of estimation was used.

This basic model was then explored and tested in a number of different ways through the investigation of the following areas:

- The relationship between dependent variables
- The overall influence of the environment
- The assumption of no measurement error in independent variables
- The predicted values for, and assumptions about non-survivors

It should be emphasised that, given the amount of exploratory analysis that occurred on the data set before the model was estimated using Lisrel the expectation is that the model should provide a very good fit for the data. In no sense is this intended to provide a test for the model! However the model used throughout this study is more coherently and accurately represented as a set of structural equations. The analysis provides an opportunity to assess the model as a whole to assess the effect of estimating the equations simultaneously on the model parameters and to examine the possibilities of further exploratory analysis.

11.4 Results

Despite the expectation of a good fit it is still of interest to compare the estimates with those obtained when the equations were estimated separately and to assess the fit of the estimated structural equation model.

The full model estimated using the correlation matrix and maximum likelihood option in LISREL is shown in table 11.1. As the correlation matrix was used variables are all standardised so no intercept terms are present. In Appendix 9 table A9.1 shows the values of each coefficient when the variables are standardised for the SPSS-X estimation procedure and the methods of estimation available in LISREL. The lack of variation in the estimates indicates that the values of the coefficients can be regarded as reasonably stable. When the covariance matrix is used the values of the coefficients estimated by LISREL are also very similar to those estimated by SPSS-X.

Table 11.1 Structural Equation Model

	DEPENDENT VARIABLE		
	CHSD	CHAP	CHOR
<u>Personal Characteristics</u>			
Depression	0.19 *	-0.01 ns	-0.04 ns
Length of Stay	0.11 ns	0.08 ns	0.18 ns
Social Disturbance	-0.61 ***	-.-	-.-
Apathy	-.-	-0.71 ***	-.-
Orientation	-.-	-0.22 *	-0.65 ***
Communication diffs	-0.29 ***	-.-	-.-
Mental ability	-.-	-.-	0.60 ***
<u>Environment Characteristics</u>			
Positive Regime	-0.21 **	-0.22 *	0.20 *
Quiet	-0.36 ***	-.-	0.44 ***
Turnover of Residents	0.27 *	-.-	-.-
Staff sickness	-.-	0.25 **	-.-
Care staff-resident ratio	-.-	-0.25 **	-.-
% staff qualified nurses	-.-	0.31 ***	0.46 ***
Staff turnover	-.-	-.-	-0.51 ***
No of psychotropic drugs	0.23 **	0.20 *	-.-
Chooses what to wear	-0.16 *	-.-	-.-
Find	-.-	-0.35 ***	-.-
Frequency of visitors	-.-	-.-	0.24 **
R ²	.56	.48	.45
number of residents = 78			

Total Coefficient of determination = 0.873
 Chi-square with 26 df = 17.16 (p = .904)
 Goodness of Fit Index = 0.980
 Adjusted Goodness of Fit Index = 0.822

CHSD Change in socially disturbed behaviour
 CHAP Change in apathetic behaviour
 CHOR Change in orientation

ns p > .10
 * p < .10
 ** p < .05
 *** p < .01

One of the benefits of estimating the standardised solution is that the size of coefficients also gives an indication of the relative "effect" of the variable in explaining variation in the dependent variables. The larger the coefficient the larger

the "effect" of the variable. Values are therefore closely related to significance levels of individual t statistics for each coefficient.

The significance levels were, again, very similar to those estimated by SPSS-X. Only one coefficient ceased to be significantly greater than zero, that which reflected the effect of length of stay in the home on the change in residents' orientation.

A major difficulty in assessing the adequacy (or otherwise) of a model estimated using Lisrel is the paucity of valid statistical tests. Models have to be judged on a number of different indicators to assess whether they provide a reasonable representation of underlying relationships. Initially, the manual recommends examining the values of the parameters to see if these are reasonable. Examples of unreasonable values that can occur are :negative variances, correlations greater than one or extremely large standard errors. These problems, which tend to indicate that the model is fundamentally wrong, were not encountered in this basic specification.

The squared multiple correlation coefficients which measure the strength of each equation separately are virtually the same as the SPSS-X estimations. The coefficient of determination measures the strength of the relationships jointly (Joreskog and Sorbom, 1986) The manual advises that values close to one are associated with good models, and .87 is taken as satisfactory.

There are three principal methods of assessment of overall fit used to judge models. the goodness of fit index, the chi-square statistic and an analysis of residuals Modification indices are also provided by Lisrel to assess whether removal of restrictions might improve fit.

11.4.1 Goodness of Fit Index

Although not a direct measure of the proportion of variation explained, the goodness of fit index (GFI) is a measure of the "relative amount the variances and covariances are accounted for by the model" (Joreskog and Sorbom, 1986, pl.41). In

ULS the index is based on the trace of the matrix of the squared differences between the fitted and the observed covariance matrices. In maximum likelihood the information matrix is also used. The adjusted goodness-of-fit index (AGFI) is adjusted for degrees of freedom. Both should lie between zero and one although negative values are theoretically possible. The goodness of fit index is independent of sample size and relatively robust against departures from normality. Unfortunately, the statistical distribution is unknown so there is no standard to compare it with, although the GFI and AGFI can be used to compare different models. Given the range of values that can be taken, the values of .9 for the GFI and .82 for AGFI are acceptably high.

11.4.2 Chi-Square Statistic

The chi-square statistic is a valid test statistic only if three criteria are satisfied: all variables have a multivariate normal distribution, the analysis is based on the covariance matrix, and the sample size is fairly large (Joreskog and Sorbom, 1986, p139). When these conditions hold and the maximum likelihood method of estimation is used it is equivalent to the likelihood ratio statistic.

The small number of observations (78) and the use of categorical data means these conditions cannot be met with the current data set. The statistic, therefore, can only be used as a goodness of fit measure in the sense that the value is small in relation to the degrees of freedom. The implication is that differences between the model covariance matrix E and the observed matrix S are small enough to be sampling fluctuations.

Although the probability levels given by the programme for the chi-square statistic cannot be used for hypothesis testing, they do give an indication of whether the value of the chi-square statistic can be regarded as low in relation to the degrees of freedom: the larger the probability value the better the fit. The current model has a chi-square statistic of 17.16 and 26 degrees of freedom with a probability level of .9. This does not indicate a poor fit.

11.4.3 Analysis of Residuals

Lisrel provides a matrix of standardised residuals which can be examined for substantive issues regarding the quality of the model and for indications of specification errors. Specification errors are likely when any of these "normalised" residuals is greater than two. The largest absolute value of the normalised residuals in the model was .7.

Lisrel also prints a normal probabilities plot which is termed a Q-Q plot to help assess whether the residuals are normally distributed. The Q-Q plot for this model is in Appendix 9. If residuals are normally distributed they will be plotted along a line rising at 45 degrees. If the points are non-linear then the residuals are not normally distributed. If, as in this case, the points rise more steeply than 45 degrees, residuals are normally distributed and less variable than would be expected using the asymptotic variances in standardising the residuals (Hayduk, 1987). This would indicate that the model fits the data very well and the t statistics are valid.

11.4.4 Modification Indices

The modification indices estimated by the programme are based on derivatives of the fitting function. These are produced for all coefficients constrained to zero. The index equals the minimum expected decrease in the chi-square statistic that would result if the constraint was removed. The manual suggests that indices greater than five should be relaxed individually to improve the fit of a model (Joreskog and Sorbom, 1986, p111-19).

It is recommended (Joreskog and Sorbom, 1986) that modification indices only be used as a basis for amending a model if there are sound theoretical reasons for doing so. In this case the largest index was only 1.65. This is not large enough to suggest a specification error and any further investigation using the indices would be purely exploratory, rather than a reassessment of the model.

The modification indices were followed through experimentally by relaxing those constraints which had modification indices greater than one and which yielded coefficients with signs that were consistent with theory. The only additional environmental effect included on this basis was frequency of visitors, as a have a favourable influence on social disturbance, although the coefficient was not statistically significant ($b=-0.1$, $t=-1.16$, $p=.13$).

11.5 Inter-relationship of Dependent Variables

One of the purposes of estimating a structural equation model was that theoretically the outcome measures would be expected to co-vary and ignoring this in the estimation procedure would result in mis-specification of the model. However, the differences between estimating the equations separately and together are very limited. The reason for this can be seen when the "psi" matrix, the variance-covariance matrix for the error terms, is examined. (table 11.2).

Table 11 2 Variance-covariance matrix of residuals

	CHSD	CHAP	CHOR
Change in Social disturbance (CHSD)	0.45		
Change in Apathy (CHAP)	0.14	0.53	
Change in Orientation (CHOR)	0.05	0.07	0.55

From table 11 2 it can be seen that the estimated model implies very low co-variation between the error terms in the three equations. Normalised residuals are also low. between change in orientation and change in apathy -0.09, change in orientation and change in social disturbance -0.34 and between change in apathy and change in social disturbance -0.5. No causal relationship is hypothesised between the last two variables which show the highest residual.

Given this it is not surprising to find that allowing "change in orientation" to enter the other two equations does not improve the model: the GFI remains the same at .98 and AGFI drops to 0.81. The absolute value of the t statistics was less than .3 for both new coefficients, indicating they were not significantly different from zero. The modification indices for the constrained elements of the beta matrix (which contains coefficients of the dependent variables) were also very low. The inclusion of the beta matrix did not affect the model implied covariance of error terms of the equations: the largest increase was .02.

All indications point to the conclusion that one of the principal reasons for estimating the equations together, the implied covariance of the dependent variables, is not an important influence in this data set. The possibility exists that this is a function of the model itself - that exploratory analysis selected those variables which minimise the covariance of the dependent variables. This is unlikely, however, as outcome variables were allowed to enter the equations during the exploratory stage. Moreover, the highest correlation between the outcome variables, for changed apathy and social disturbance, was only .24.

11.6 The Measurement Error Assumption

In all studies of this type values of observed variables do not correspond exactly to the variables of theoretical interest. In preceding chapters this issue has been addressed through assessment of reliability and validity of measures. Lisrel is capable of integrating measurement concerns with structural equation modeling by incorporating latent theoretical concepts and observed or measured indicator variables into the model. Thus a proportion of the variability of an indicator can be ascribed to error variance. This is equivalent to relaxing the assumption that the independent variables are measured without error.

An attempt was made to allow observed variables to reflect underlying latent concepts. It was assumed that each indicator reflected one latent variable. Because some variables were categorical, polychoric and polyserial correlations were included

in the correlation matrix. The resulting matrix was not "positive definite" (which is frequently the case in such models) and unweighted least squares had to be used. The iterations did not converge, probably because the model was under-identified. This model required 226 parameters to be estimated using 210 correlations.

Further attempts to restrict the parameters resulted in models with all the classic signs of mis-specification noted earlier, such as negative variances. One major difficulty in further investigation is that less diagnostic information can be produced for models that do not converge

Hayduk (1987) recommends that the error variance of measurement variables should be specified (fixed) using knowledge of methodological adequacy of the data gathering process. In this case it was not considered that there was sufficient knowledge about the implied variations to do more than introduce bias to the modeling process. For example, the purpose of including a variable indicating the proportion of staff that had nursing qualifications, was to introduce the effects of training background on the type of care given by staff. Given the variety, both in types of training and the effect of training on different individuals, it might be expected that such a variable should be "allowed" a large amount of error variance. However, the items reflecting the characteristics of staff do not vary for individual sample residents; they only vary between the homes and, therefore, can take only 13 different values. Here an assumption of a high level of error variance, may lead to a false conclusion that the variable is not important in affecting outcomes for residents.

Boosma (1985) reports that improper solutions, defined as being non-convergent or with negative error variance estimates, tend to become problematic when the number of observations is less than 100. The basic model in table 11.1 required 34 parameters to be estimated. It may be that this is close to the limit of complexity for a model when the sample size is 78. Introduction of any latent variables quickly increases the number of parameters required.

Given the size and limitations of the data set, therefore, it does not appear possible to investigate the assumption of errors in measurement to any great extent. Table A9 1 (Appendix 9) includes the estimated coefficients for the under-identified model for comparison purposes. Although it is clear that no conclusions can be drawn from these, it is interesting to note that one of the few variables for which the coefficient did not reduce to a value close to zero was the indicator for positive regime effect on changes in apathy and social disturbance.

11.7 Overall Effect of Environmental Influences

In chapter 10 it was demonstrated that the environmental variables as a set contributed significantly to the explanatory power of the equations individually. The similarity of the model when the equations are estimated together, indicates that a similar result would be expected for the whole model.

The "null" model that excludes the environmental influences is "nested" within the overall model. The nested model, estimated by Lisrel, is shown in table 11.3. The difference between the chi-square statistics of the two models has a chi-square distribution with degrees of freedom equivalent to the difference in degrees of freedom between the models (Hayduk, 1986). However, it has already been established that the individual chi-square statistics can not be used as a true test because not all the conditions can be met.

Just as the individual chi-square statistics can not be used to test statistical significance but can be used as indicators of the fit of the model, so differences between the statistics can be used as an indicator of the effect of the environmental variables. The difference between the chi-square statistics is 77.1 which, if it had a chi-square distribution with 16 degrees of freedom, would be significant ($p < .001$). Although it is clear this can not be regarded as a true statistical test the evidence does not contradict the hypothesis that the environment does have a significant effect.

Table 11.3 No Environmental Effect Model

	DEPENDENT VARIABLE		
	CHSD	CHAP	CHOR
<u>Personal Characteristics</u>			
Depression	0.20 *	-0.08 ns	0.09 ns
Length of Stay	0.11 ns	-0.02 ns	-0.04 ns
Social Disturbance	-0.59 ***	-.-	-.-
Apathy	-.-	-0.49 ***	-.-
Orientation	-.-	-0.20 *	-0.56 ***
Communication Diffs.	-0.26 ***	-.-	-.-
Mental ability	-.-	-.-	0.50 ***
R ²	.40	.24	.22
number of residents = 78			

Total Coefficient of determination is 0.654

Chi-square with 42 df is 94.26 (p=0.000)

Goodness of Fit Index is 0.915

Adjusted Goodness of Fit Index is 0.532

CHSD Change in socially disturbed behaviour

CHAP Change in apathetic behaviour

CHOR Change in orientation

ns p > .10
 * p < .10
 ** p < .05
 *** p < .01

11.8 The "Lost" Cases

Chapters 5 and 10 discuss the methodological difficulty of "lost" cases in research designs which incorporate more than one time period. The "lost" cases are those for whom no information could be collected at time 2. Table 10.1 (chapter 10) shows the destination outcomes for all sample residents. The majority (18) of these "lost" cases had died.

The assumption has been that over the relatively short period of the study, death and short term hospitalisation could be regarded as random events. If this were so the model should predict outcomes for these cases that do not vary significantly

from outcomes predicted for survivors. Ideally this should hold true for individual predicted outcomes and for the multivariate mean.

Table 11.4 Predicted outcome measures for survivors and residents who died or were hospitalised

(n=no of residents)	Average predicted score		F	p
	Survivors (n=79)	Died/Hosp (n=20)		
Change in Social Disturbance	-0.15	0.18	0.77	.38
Apathy	-0.40	-0.04	1.57	.21
Orientation	-0.01	-0.08	0.09	.77
Hotellings test for multivariate means			0.73	.54

The predicted values resulting from the analysis are shown in table 11.4. Neither the multivariate nor individual outcome mean values for those who died or were hospitalised varied significantly from the survivors. This result held true when only those who died were included in the comparison group. This lends support to the assumption that death and temporary hospitalisation were "random" events within the study period

A further sub-group of non-survivors was of more concern as they could form a substantially different group from the survivors. This group consisted of people who were permanently transferred during the six month period. Predicted values were only available on four of the five residents because of missing data. Table 11.5 shows the results of the analysis for these residents.

Table 11.5 Predicted outcome measures for survivors and residents who died or were permanently transferred

(n=no of residents)	Average predicted score		F	p
	Survivors (n=79)	Permanent transfers (n=4)		
Change in: Social disturbance	-0.15	-1.32	2.39	.13
Apathy	-0.40	-1.25	1.83	.18
Orientation	-0.01	-0.34	0.51	.48
Hotellings test for multivariate means			1.19	.32

Although the average scores for residents who were permanently transferred are not significantly different to the survivors' scores, the probability levels are rather too close to confidence limits for comfort. Since accepting the "null" hypothesis amounts to not rejecting the theory, the probability level should be set higher than the normal .05 or .1 levels. Another matter of concern is the direction in which differences lie. It would appear from the average predicted values that people who were permanently transferred were less likely to deteriorate than the survivors. This is the opposite direction to that which would be expected, as transfers usually occur because residents' behaviour or condition has severely deteriorated, so the home can no longer cope.

The reason for this difficulty can be seen from table 11.6. The residents who were transferred do, indeed, differ significantly from survivors. When the study period started the social disturbance score was significantly higher ($p < .01$) than for those who were still in residential care at time 2. Moreover, although apathy and orientation do not differ significantly as individual scores, if all three scores are taken as indicators of the underlying condition of the resident at time 1, that condition would appear to be significantly "worse" for those residents who were

transferred ($p < .01$). Because restricted scales were used to measure residents behaviour and ability, further deterioration is not reflected in the model's predictions

Table 11.6 Average time 1 scores by destinational outcome

(n=no of residents)

	Survivors (n=79)	Died/Hosp (n=20)	Permanent transfers (n=5)
Social disturbance	3.27	2.75 (ns)	6.60 (***)
Apathy	7.11	6.75 (ns)	8.00 ($p = .34$)
Orientation	2.20	2.20 (ns)	0.80 ($p = .16$)
Hotellings test - F statistic		0.40 (ns)	4.72 (***)

Note Brackets refer to the probability that the mean differs significantly from the mean value for survivors

ns $p > .10$
 * $p < .10$
 ** $p < .05$
 *** $p < .01$

The assumption of "random" death and short term hospitalisation is taken as reasonable on the evidence of predicted outcomes. However, analysis of residents who were permanently transferred shows that they had more behavioural difficulties at the start of the study and the model does not provide satisfactory predicted scores. Given the low number of residents who were "lost" in this way the source of bias in estimation is relatively limited. However, the results suggest that the model does not adequately predict the effect of the environment on more severely demented residents. Any future investigation would need to incorporate longer scales for outcome variables and, if possible, follow permanent transfers to obtain a complete data set.

11.9 Conclusion

When estimated as a structural equation system, the model identified in chapter 10 fits the data well, but the use of Lisrel does not take the model as far forward as might have been hoped. Estimating the equations together or separately adds little of substance to the model, although there is further confirmation that the set of environmental variables have an important effect on outcomes for demented residents. Exploring the effects of the hypothesised underlying latent variables, such as "control", would require a larger data set and an investigation that incorporates estimation of error variance into the initial data gathering exercise.

Examination of the "lost" cases, while confirming that there was no evidence of a major source of bias, has introduced a cautionary note into the assessment of the model as a whole. The assumptions that death and temporary hospitalisation are random events have been validated by the analysis. However, those residents who were permanently transferred during the study period appear to have started from a different "baseline" of behavioural difficulties. In chapter 10 one home (Centrelea) was identified as a possible source of bias in the assessment of social disturbance. Moreover, the restricted nature of the measures of outcome and the exclusion of atypical residents suggests that the validity of the model as a whole may be limited when considering very severely demented residents.

CHAPTER 12

CONCLUSION

Introduction

The results of the study have to be seen in the context of a growing population of people with senile dementia. While the current policy emphasis is upon caring for people with all types of disability in the community, people with senile dementia present a number of difficulties to service providers. Their need for monitoring and the stress that they place upon the people who care for them is such that residential care will often be the most appropriate type of care. Indeed, for people currently in long term hospital wards, residential care represents a step towards "care in the community".

Who will provide residential care for people with senile dementia in the future is debatable, however. The role of local authorities in providing residential care for elderly people is changing. In future, local authorities are increasingly likely to find themselves in a monitoring role rather than in directly providing care. Current proposals (Department of Health, 1989) in response to the Griffiths report (1988) suggest that local authorities will have to finance, for their own establishments, both the "board and lodging" and "care" costs that cannot be met by the individual residents (Department of Health, 1989). When local authorities place people in private and voluntary run establishments they will have to fund only the "care" element. The Department of Social Security will be responsible for the "board and lodging" costs that cannot be met by residents. Thus there will be a financial incentive will be to place people in establishments in the non-statutory sector.

One other proposal which has implications for the future care of demented elderly people, is that the social care of people with mental illness being discharged from hospital will be funded by grants channelled through health authorities to local authorities (Department of Health, 1989). Where this leaves elderly mentally infirm people who have not been in hospital but are in need of both medical and social care is not clear. Such issues will need to be resolved in the near future with the

increasing pressure on services likely to be exerted by this growing group of clients. For the present, however, it would appear that in the future that, after the contribution of the informal care sector, the "social care" needs of all elderly people outside hospitals are to be met by local authorities.

The need for monitoring the care of demented people will be particularly acute, therefore, with less residential care being provided directly by statutory agencies, and possibly an increased level of co-operation required between agencies in order to ensure high quality care for this particularly dependent group of people. Much has been written about the principles of good practice and care (Home Life, 1984, Wagner, 1988) but there is little direct evidence concerning the influences on the quality of life of demented elderly people in residential care. If the balance of resources in monitoring and co-ordinating care for this group of people are to be properly targeted there needs to be an increased level of understanding of the effects of residential care

The underlying aim of the study was to try to capture the impact of the environment of homes for the elderly on the "confused" residents. If effects can be demonstrated, then it is possible that certain features of the environment can be identified as associated with positive outcomes for residents. Such features could provide a basis for local authorities to monitor residential homes more effectively. The investigation was exploratory in approach, and the results can be seen only as a starting point for further research. However, it is of interest to explore the implications of the findings for policy, should they be confirmed in future work. This chapter briefly reviews the findings and assesses the model used to underpin the investigation. Implications for future directions for research are then explored. The chapter concludes with a discussion of the implications for policy in the field of residential care of demented elderly people.

12.1 The Results Reviewed

The model introduced in chapter 4 describes the process by which the interaction between the environment of elderly people and the personal system is hypothesised to affect competence and behaviour. The types of environmental influence have been categorised as primarily supra-personal, social and physical. The effect of psychotropic drugs did not fit easily into any of these categories and has been treated separately. These categories of influence are not independent of one another, indeed the effect of each aspect of the environment on the other is of considerable interest. The following discussion examines the results of the investigation and the effectiveness of the model in the assessment of each of these categories of influence

12.1.1 Supra-Personal Effects

The supra-personal environment of the homes was divided into aspects of the resident population as a whole and staffing related issues. These were both found to be related to outcomes and the type of regime.

1) Resident Population Effects

A higher turnover of residents, associated with the provision of short-term care, is negatively correlated with a positive regime (see chapter 8). It could be that the changing population actively discourages the formation of such a regime.

Alternatively, the officers-in-charge or the management of these homes might consider the aims of establishments which have positive regimes incompatible with the provision of short-term care

A high turnover of residents was also associated with increased socially disturbed behaviour. Apart from that the characteristics of the resident population did not appear to have a direct effect on outcomes for the sample residents.

ii) Staffing Effects

The homes with a positive regime had a higher proportion of staff who had received in-service training although this was not statistically significant ($p=.16$) (see chapter 8). A higher proportion of qualified staff may either reflect an effect on the regime of more highly motivated staff, or increased encouragement given to staff in homes with positive regimes.

Staffing characteristics were directly associated with changes in the level of apathy and orientation among sample residents. Higher care staff to resident ratios, low levels of sickness and turnover among staff, all were associated with a positive effect on the sample residents. The evidence on staff training is more ambiguous. A background of nursing qualifications seems to have a positive effect on residents' orientation over time but also was associated with and may, indeed, have encouraged apathy among sample residents.

iii) The Model of Process

The model incorporates the concepts of the "individual experience" of the environment and "coping response" to environmental stress. No variables were hypothesised to represent these for the supra-personal environment in this analysis.

12.1.2 The Social Environment

The social environment might affect the physical environment by influencing the way the building is used. For example, an atmosphere of conflict in a home may discourage residents from moving around the home much, and thus limit their experience of the physical environment. An investigation of this into direction of influence would require an observational study that incorporated frequency of movement around the home as well as where in the home the resident went. There is limited scope in a study of this kind to assess the effect of the social upon the physical environment. The relationships between the physical and social environment have, therefore, been limited to the discussion in the next section of hypothesised effects of the physical upon the social environment.

As a result of the investigation into the methods used to assess the social environment (see chapters 7 and 8), two main approaches were employed. Firstly the homes were classified according to the "type" of regime. The second approach used a set of measures that were intended to reflect a more detailed picture of the homes. These measured three principal dimensions of the environment: relationships, personal growth and system maintenance and change. These dimensions were measured at the home, group and individual experience level.

1) Types of Regime

Three types of regime were defined. "Positive" regimes were said to prevail in homes where residents were encouraged to do things for themselves and allowed a greater freedom of choice than in other homes. "Restricted" regimes existed in homes where staff tended to take a restricted view of residents abilities and make decisions associated with aspects of daily living for them. Homes with "mixed" regimes fell between these two extremes. The classification of the regimes was experimental using the SCES scales and based on categories developed by Booth (1985)

While the positive homes were easily identified, selection of the restrictive regimes was less clear. Moreover, the homes with "restrictive" regimes did not prove to be systematically related to outcomes in the subsequent analysis. There was an association, however, between the homes with "positive" regimes and three of the outcome measures used, providing evidence for the validity of this part of the classification. If this is confirmed by future research findings this could provide evidence for the "induced dependency" hypothesis (Booth, 1985). In the terms of this hypothesis, the results of the study would depict residential care as generally dependency inducing, with exceptional homes actively discouraging this tendency.

The comprehensive nature of the association between the homes with "positive" regimes and the measures of outcome is such that it is of interest to try to tease

out what these homes have in common that could lead to the apparent beneficial influence of their regimes. At first sight the four homes (Pondlea, Haddock House, Chaucer Place and Westgate) were very different (see appendix 3). However, one feature that did link the four was the high level of involvement and status of the care staff.

In one of the homes there were no "care assistants", only "residential social workers" and "assistant residential social workers". This home had a vast throughput of agency staff (74 different people in six months!) because adequate staffing levels were seen as essential. In two of the other homes the key worker schemes were active and used. The care staff concerned were consulted and involved in this study wherever possible. In one of these homes the management was so devolved that the researcher never met the officer-in-charge. In the other the officer-in-charge was responsible for a large proportion of the training of care assistants in caring for demented people in the local authority. In all three of these specialist homes a heavy emphasis was laid upon the training of care staff.

The fourth home was non-specialist, but again involved the staff, and anybody who visited the home, in its extensive social life. Visitors and the community were drawn into the home and staff often would bring in their families to the social events. Pride was taken in the achievements of residents, on the researcher's arrival at the home one lady was introduced who had learned to knit while in the home. It did not appear to matter, therefore, whether the dominant philosophy of the home was reality orientation or community involvement. What was important was that there was a dominant philosophy in which care staff were perceived, and perceived themselves, to be an essential ingredient.

ii) Relationships

The only evidence with regard to the effect of relationships upon demented elderly people was the improvement in orientation associated with the frequency of visitors to sample residents. The positive regimes had a significantly higher level of

cohesion in the social climate than the other homes, and relationships within the home might thus have had an indirect effect. This is impossible to verify, however.

iii) Personal Growth

None of the variables intended to reflect aspects of the environment affecting personal growth were found to directly impact on outcomes, although the dimensions of independence and self-exploration from the SCES scales were both significantly higher in homes with positive regimes. However, the level of "independence" is considerably lower, even in the homes with positive regimes, than in American nursing homes. As identified earlier, this will reflect personal characteristics of the populations within the facilities (see chapter 8).

It is worth noting that the average rate of activity of the sample residents in 'positive' homes (47.8 times per month) was significantly higher ($p < .01$) than in the other homes (23.3 per month). Direct effects may have been concealed by the type of measures used, which only reflected the frequency of activities. Moreover, there was no categorisation of the type or quality of activity in which residents engaged.

iv) System Maintenance and Change

The dimensions of "resident influence" and "organisation" in the SCES were both significantly higher in homes with positive regimes. However, the only variable that was hypothesised to reflect the way care was organised, and that was directly associated with the outcome measures, was the choice of daily clothing. This was assumed to reflect an aspect of the control a resident had over his or her daily life. The results suggested that residents who were allowed to choose were less likely to become more socially disturbed during the six month period.

v) The Model of Process

The model proved useful in examining the type of regime experienced by demented elderly people and identifying that specific care practices (such as set bedtimes) were far more influenced by the personal characteristics than the "normal" practice

in the home (see chapter 7). As a result, indicators of specific care practices were incorporated at the level of "individual experience" rather than the home environmental system.

However, the majority of the effects of the social environment appeared to be caught in the single variable that reflected the regime type. There is a danger of falling into the trap of the "black box" in which, although an effect is identified, there is no understanding or theoretical underpinning of the interpretation. The implication of the effect of the "positive" regime, based as it is on measures of social climate, is that the overall atmosphere of the home has an impact on the welfare of demented people. As discussed above, the type of home that generates this type of regime can be extremely varied so implications for policy and practice must be drawn with some caution.

If nothing else, however, the regime measure could prove a useful tool for further research. When examining the effects of treatments, such as reality orientation or activity programmes, the effect on staff morale has frequently been noted in the literature. Increased motivation and "team spirit" among staff can result from such experiments and in turn affect the whole social "atmosphere" or "climate" of a ward or home. Monitoring the effect of such programmes on the overall social climate could, therefore, prove a useful device to separate out "Hawthorne effects" from the direct effect of the programmes.

12.1.3 The Physical Environment

The physical environment is likely to affect both the supra-personal and social environments. The supra-personal will be affected in such obvious ways as the size of the building affecting size of the resident population. The location of the home may affect the population on which it draws: urban or rural for example. The size of the home did not vary sufficiently to warrant incorporating in the final exploratory analysis. Similarly, the investigation did not cover such aspects of the

population as socio-economic group. The scope for assessing such effects was, therefore, very limited.

However, there was scope for assessing the relationship between the physical and social environment. As pointed out above, the associations are all cross sectional and some caution needs to be exercised in interpretation, although it would seem reasonable to suppose that the home level aspects of the physical design preceded the social environment. In the following discussion four aspects of the physical environment are identified and the associations between these and the social environment and outcomes for the sample residents explored. The four aspects of the physical environment are: ambience, territory, overall design and complexity of design.

i) Ambience

No evidence was found which was interpreted as the ambience of the home affecting the social environment. However, higher levels of noise were associated with deteriorated orientation and increased socially disturbed behaviour.

The levels of lighting were lower in group-living homes generally, and in these homes were associated with residents' ability to find their way around. Because of the relationship between this ability to navigate the home and changes in apathy and the agitation-smiling index there is some evidence that the lighting levels in group-living homes indirectly affect residents' behaviour.

ii) Territory

A sense in which the residents had established part of the home as their own personal space or territorial area was hypothesised to be associated with the well being of the residents. The tendency, in some homes, for all or almost all residents to have their "own" chair where they and only they, sat, was also hypothesised to represent territorial behaviour. There was some support for this theory as the size of bedroom area, or personal territory, and the "own" chair culture was found to be

associated (see chapter 9). Indeed this can be seen as the effect of cramped personal space effecting social behaviour. Although an aspect of the social environment, therefore, the "own" chair effect has been included in discussions of the effect of the physical environment because of the hypothesis of the effect it represented.

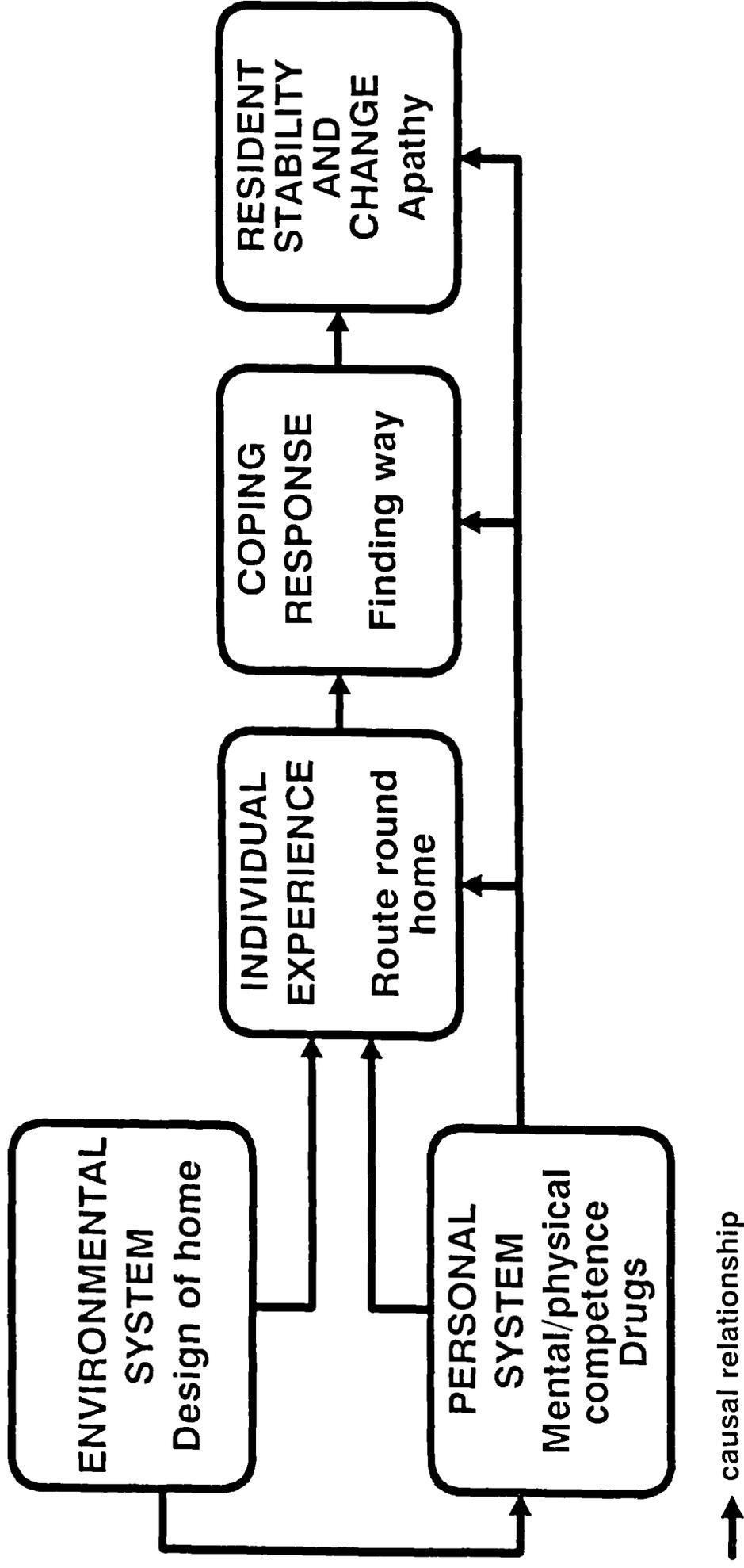
There is very little evidence in support of the theory of the beneficial effect of a well established personal territory or space. The only association found was between the "own" chair homes and the unverified agitation-smiling index. While it is possible that this represents an effect of group territorial behaviour on the welfare of the demented residents, a great deal more evidence would be required to substantiate any such supposition.

iii) Design

The design of the homes in the study was divided into two main types: those designed for communal and those for group-living. One of the rationales for the group-living approach to residential care is that the groups offer the potential to develop a "family" lifestyle separate to that of the home at large (Norman, 1984). If this were occurring it would be expected that the social climate within these homes would vary between groups. There was very little evidence of this in the separate assessments made by care staff in homes designed for group-living.

Some evidence has been found for a relationship between regime and the design of homes (Wyvern Partnership, 1979). In this study the evidence is ambiguous: the "restrictive" regimes included one home designed for group-living and two purpose-built communal homes. Of the homes with "positive" regimes, two were designed for group-living and two were converted older buildings. Rather than contributing towards the generation of a "positive" regime, it is more likely that those older converted homes, which were clearly generating a "positive" regime, would be the last to be moved to more "suitable" purpose-built premises.

Diagram 12.1
Relationship between home design and outcomes for residents



With such small numbers it is impossible to draw any conclusions about the lack of any "positive" regimes in purpose-built homes for communal living.

iv) Complexity of Design

The analysis of the complexity of the design is in many ways the most complete part of the model. Diagram 12.1 shows that associations were found between the individual experience of the home and the design: the effects of the "route diagram" variables depended upon the type of home, group-living or communal. The relevance of personal competence also depended upon the design: mental ability was of less importance than physical in communal homes. The "coping response" of residents' ability to find their way around was thus indirectly related to the overall design, but directly related to the individual experience of the home and personal competence. The ability to navigate the home successfully was also found to be related to levels of apathy and the agitation-smiling index. If confirmed by further research this would indicate that the overall design of the homes does have an effect on demented residents.

One further association identified was a relationship between residents having a bedtime set by staff and their ability to find their way around the home (chapter 9). It would seem likely that those residents who cannot find their way have to be taken to bed, further reducing the level of control such residents can exert over their lives.

v) The Model of Process

In many ways the model of process was most useful in the assessment of the physical environment. Although the investigation of territorial effects was less than successful, the investigation of the design and ambience effects were facilitated by the model of process. With this more complete part of the model it is possible to illustrate how the results of the investigation can be tied into the environmental fit hypothesis. For example, if the results hold, demented residents who have a tendency to retreat into apathy, and who have mobility difficulties, would be more

appropriately placed in well lit group-living homes because they would be more likely to be able to get to key areas of the home unaided.

12.1.4 Psycho-tropic drugs

Sample residents in specialist homes were more likely to be taking psychotropic drugs on average (59%) than those in non-specialist (34%). The average number of drugs taken, when any were taken at all, was also slightly higher in specialist homes (1.7 compared to 1.5) although this was not a significant difference ($p=.50$).

The number of psycho-tropic drugs was found to be associated with a resident's ability to find his or her way around communal living homes. Two of the behavioural outcomes, changed social disturbance and apathy were also found to be associated with the number of drugs being taken. This could reflect adverse reactions which are more likely with a larger number of drugs. These tend to be associated with four or more drugs of any sort (Wade et al, 1986). 18 of the sample residents were taking four or more drugs. Ten of these were in specialist homes (19% of the residents) and eight in non-specialist homes (16% of the residents).

There was little evidence for the theory that drugs are more carefully prescribed in specialist homes. This may be related to the rather unexpected finding that the average proportion of staff with a nursing background was significantly lower in specialist establishments (11.2%) than in non-specialist homes (14.4%) ($p<.05$).

The study was restricted in the number of observations and methodologies that could be employed, due to limited resources. However, it was possible to explore a number of hypotheses, in the context of a model of process, using both well established and experimental methods of assessment. The description of the results is necessarily full of caveats with regard to the causal nature of the associations found. The associations that have been found will need to be established in other data sets, in different circumstances, to assess the validity of the tentative conclusions drawn here.

12.2 Research Implications

This type of exploratory study can provide a valuable reference point for future research. It can be represented as a "pilot" study for larger scale research, or the results used to inform related studies. There are two types of "result" in this context: those that relate to the measures and methods of assessment used, and the associations established in the data set.

12.2.1 Measures of Outcome

The study has used changes in CAPE scales as measures of outcome together with a very experimental measure (the agitation-smiling index) of dubious validity based on observations of behaviour assumed to be associated with welfare. The assumption, in interpreting the results, has been that increased apathy or social disturbance and decreased orientation found to be related to environmental, rather than underlying organic effects, are associated with a decline in the welfare of the resident. The model described in chapter 4 and used throughout the analysis specifies how other measures such as engagement, which are also associated with welfare in the literature relate to the changes in behaviour and orientation used in this study. Welfare, though assumed to be related to the outcome measures used, is not specified in the model.

Further research is required, therefore, to test the assumption of the relationship between the welfare of demented people and changes in the CAPE scales. This is a particularly difficult area but it may be possible to increase understanding by relating scales used to measure depressive symptoms with the CAPE scales, and perhaps with longer term outcomes. One of the difficulties with such an approach is the association between dementia and depression discussed in chapter 2. Furthermore, the indicators used for depression in this study were very crude and any further work would need to use properly established scales to allow for the effects of depression on the progress of the condition.

12.2.2 The Supra-Personal Environment

i) Resident Population

The area of concern highlighted by the study with regard to the resident population was the turnover of residents. None of the homes in the study had a particular short-term unit separate to the rest of the home. There were difficulties in separating out the "types" of turnover - temporary hospitalisation, permanent transfers, "rotating" care and so on. Further work is needed on the different aspects of turnover as these affect the residents to address such questions as: can respite care be integrated into long-stay homes successfully?

ii) Staffing

The results of this study suggest that the characteristics of the staff population of homes for elderly people are of fundamental importance to the welfare of residents with senile dementia. Further work needs to be done to determine what issues affect staff sickness and turnover and the care-staff to resident ratio that is required to ensure high quality care when residents are "confused".

In particular, however, the need is for research into the impact of training on the way staff care for, and interact with, residents. Is the relationship between increased apathy and the prevalence of nursing qualifications among staff a chance association in this data set, or found consistently across different settings? An observational study or quasi-experimental design might identify whether the "ideal" staff profile when caring for demented people is a nursing background together with in-service training which heightens awareness of apathy among residents with senile dementia

12.2.3 The Social Environment

If the results of the study are confirmed, there is considerable potential in the measure of positive regime. With such a small number of homes, however, the

measure must remain speculative. Larger studies are needed to confirm the method of assessing the regime and the impact on residents. Many questions remain:

- Does this type of regime have a positive impact upon alert residents?
- What is the residents' view of the regime?
- Can the method of establishing regime type be refined so that fewer questions are required?
- How can the formation of positive regimes be encouraged?

Other issues, such as resident control, are very much caught up with the issues of regime formation and training of staff. The issue of visiting also needs further work. Here the emphasis has been upon frequency; it is likely that the relationship between the visitor and the resident, together with the frequency and overall number of different visitors may be of importance.

Although the frequency of activities was not found to have an effect, the type of activity varied enormously. What goes under the name of group therapy in one home may be very different from group therapy in another home. The issue of engagement has not been covered adequately in the study and needs more detailed observational work.

12.2.4 The Physical Environment

There is considerable scope for validation of the measures, and extension of the methods, used to assess the physical environment. Can route diagrams be usefully extended and refined to assess other designs of homes? The "Find" measure needs to be validated by observational work if it is to be used in the future. Further development of the methods and the establishment of normative data may allow assessments of the variation in the ways that designs of residential homes can affect elderly demented people. Furthermore, this study did not manage to establish any relationship between the use of orientation aids such as colour coding and large clear labelling and residents' navigational abilities. An observation study on

the "Find" and "route" measures may be able to assist in the development of a method for recording the effects of orientation aids.

The evidence on the importance of territory is thin but of interest. The size of bedroom areas in some cases was extremely small (two square metres in one case!), far below recommended levels (DHSS, 1973). Bedrooms very rarely appeared to "belong" to residents. Often fewer personal possessions were in evidence than might be seen in short-term hospital wards. The absence of effects associated with well established territory may reflect very the low levels which prevailed generally. One approach to assessing the importance of personal territory to demented residents, would be to use a quasi-experimental design in which, for example, the entire furnishing of a substantial bedroom area with residents possessions is contrasted with current policies of "allowing" residents to bring in personal items of furniture.

12.2.5 Drugs

There is a need to investigate further the use of psychotropic drugs in homes for elderly people. In particular, it is of concern that the policy in which a home is allocated a GP, with whom most residents are registered, did not appear to translate into more careful prescribing of drugs. There have already been a number of investigations (Wade et al, 1986) which have voiced concern at the use of drugs in the care of elderly people in residential care. More research work needs to be done to monitor the situation.

There are a great many directions in which future research could build on the findings of this small study, some of which have been outlined above. Priorities in research in this area depend on the implications for policy and practice in the future.

12.3 Implications for Future Policy and Practice

In the introduction it was pointed out that there are a number of policy changes on the horizon in the care of elderly people. Future patterns of care may look very

different from those of today. However, in the meantime people have to be cared for in existing establishments. It is of interest, therefore, to examine the immediate implications for practice, should the findings and inferences of this study be confirmed, before looking to the more long term implications.

12.3.1 Implications for Practice

One of the messages of most immediate concern to staff in the field of residential care of demented elderly people is the importance of their own role. The importance of the need for adequate staffing when turnover and sickness reduce levels, and for the involvement and commitment of staff in the care of demented residents, cannot be over-emphasised. This may have an impact directly upon the residents, reducing apathy and encouraging orientation, or indirectly through the impact on the social climate of the home. The value of a nursing background in caring for demented people should be also be emphasised, but there needs to be an awareness that this may lead staff to fail to respond to the problem of apathy among the residents. This may be an area which in-service training can be valuably employed.

The results indicate that there is a need for particular emphasis on allowing the residents as much control as possible in caring routines, and in detailed monitoring of the use of drugs. Visitors should be encouraged as far as possible to appreciate that in spite of the short-term lack of feedback, there do appear to be long-term benefits associated with regular visits.

Where possible the impact of the turnover of residents should be minimised. This may be done in group-living homes, perhaps, by limiting short-term care to one group. It may be difficult to make many practical changes, but that there may be conflict in needs between short and long-term residents should be acknowledged.

Some officers-in-charge did express frustration at the design of the homes, particularly those designed for communal living. Allowing some residents to eat away from the main dining rooms, so their "route" can be limited to a section of

the home if they desire, may be one way to aiding a resident to cope with such designs. In group-living homes attention to the level of lighting and placing residents in bedrooms on corridor junctions may help residents to negotiate the home.

The effect of noise on demented residents may encourage the restriction of televisions to specific areas, and discourage the practice of simply leaving it on in the corner of a communal area all day. It may also be important to try to restrict the degree to which residents "set each other off" shouting and moaning. Taking one resident for a walk in such a situation may benefit other residents .

12.3.2 The Monitoring Role of Local Authorities

In the longer term it is probable, given the current trends in the provision of residential care by different sectors, that the monitoring role of local authorities will become increasingly important. In monitoring the quality of care there are three types of criteria (Donabedian, 1982): structure, process and outcome.

' Structure" refers to resources used and the stable arrangements under which care is produced. In the case of residential care this would include an indicator of the number of beds in a home, for example. "Process" refers to activities that constitute care the use of psychotropic drugs for example. "Outcomes" are the consequences for the health or welfare of the client, such as effects on apathy.

While measures of structure and process are relatively straightforward to record, outcome measures are not. In monitoring whether residential care is achieving an adequate quality of life for residents, authorities will largely be dependent upon measures of structure and process. It is essential, therefore, that the relationship between these measures and those of outcome are understood. It is necessary to know what should be recorded and the problems that are likely to occur when homes do not achieve desired objectives.

If the results of the study are confirmed and inferences drawn prove to be correct, there are a number of process indicators in the care of elderly people with senile dementia that it is of particular importance to monitor. These are: resident turnover, care staff-resident ratios, staff sickness, staff qualifications and training, frequency of visiting by relatives and usage of drugs. It is also possible that the method of identifying regime types could provide a basis for the self-monitoring process proposed by Wagner (1988).

The monitoring role may not be limited to inspecting existing and licensing new establishments. It is possible that authorities may become involved in commissioning or at least encouraging the non-statutory sector provision. Are there any particular directions which these results indicate should be productive? The particular issues which it might be expected that authorities would be expected to provide guidance are specialisation, use of homes for respite care, the design of homes and training of staff

12.3 3 Specialist Provision

The specialist facilities in the study included a wide variety of establishments and there was no consistent relationship with beneficial outcomes for residents and specialism per se. However, some of the results would suggest the increased use of specialist resources, perhaps joint provision with health authorities as suggested in Wagner (1988, p117). Specialist homes had higher care staff-resident ratios ($p < .01$), higher SCES scores for cohesion ($p < .01$), self-exploration ($p < .01$) and independence ($p < .01$) and were significantly quieter ($p < .01$). While it is neither necessary nor sufficient for a home to be specialist to achieve a "positive" regime, it can provide a basis for a distinctive home philosophy which can encourage this.

It was noted in the Wagner Review (1988) that there was an increased tendency to have specialist units attached to homes for elderly people. No such establishments were included in the study. The evidence here would suggest that, unless these were carefully staffed and treated very much as a separate entity in the home, that there

would be little chance of the "positive" type of regime that has been identified as beneficial to demented residents being generated.

12.3.4 Respite Care

The provision of respite care is likely to become of increasing concern in the future in order to provide support for the growing number of demented people being cared for in the community (Levin, 1989). The results of this study suggest that how this is provided is of the utmost importance to permanent residents with senile dementia. There may be an argument for separating respite care entirely from long stay care for demented residents. Thus certain homes would specialise in rotating care and relief care schemes and others provide permanent care.

One difficulty with such a proposal is that short-term care is frequently a precursor to permanent admission (Levin, 1989). Difficulties may occur if someone becomes familiar with one home through regular short-term care, and then is permanently admitted to another home after just one visit. The effects could perhaps be mitigated by ensuring careful assessments and review procedures by the short stay home which would be used by the long stay home. Alternatively one site could be used for more than one type of establishment, minimising the problems of co-ordination of knowledge and care. There is a need for a comprehensive evaluation of respite care that takes into account the impact on the home as well as the recipient of the care.

12.3.5 Design of Homes

The results so far have tended to favour group-living designs, but this may be because of the limited type of design included in the study. There was very little evidence of any beneficial effect on social climate of the group-living design. Although there were two homes with positive regimes which were of group-living design, there was no evidence of individual social climates specific to groups which might indicate the formation of small supportive units. The advantage that the

group-living design did have was in enabling residents to restrict their use of the home they could maximize their ability to negotiate their environment.

Willcocks et al (1987) propose designs which are intended to encourage resident control and the formation of territory by emphasising the personal space in homes. Bedrooms would become individual flatlets. Residents would be able to eat separately and, if they so desired, keep their use of "public space" to a minimum. To what extent such a design would be desirable for demented residents is debatable. With an adequate level of trained staff it may be ideal, in that residents need go no further than their immediate corridor and bed-sitting room if they do not want to. However, this could well prove a very costly option and attempts to keep costs down could have undesirable consequences in such a situation. For example, an understaffed establishment may result in all demented residents being herded into one public area so they can be monitored, especially when eating. Thus all the disadvantages of the communal design may be re-introduced.

Any design to be used for the care of demented residents needs to take into consideration the desire of staff to monitor residents as well as the need for residents to maximise their autonomy. Some demented residents may find the presence of other people a support. Some officers-in-charge reported certain residents as appearing more settled if they shared a bedroom. Obviously this is an area that needs further work.

12.3.6 Training

Although there was little direct evidence about the value of in-service training, there was an association with positive regimes. In-service training, as suggested above, could be used to mitigate the consequences of a nursing background on apathy among residents, and encourage the beneficial effect upon orientation. It is interesting to note the total absence of any evidence of an effect associated with social work qualifications, the only specific type of training recommended by the Wagner Review (1988). This may be due to the low incidence of such qualifications.

12.4 Conclusion

Necessarily, in drawing out the possible policy implications of the study, there has been a tendency to draw inferences far beyond the limits of validity. The whole exercise has been intended to advance further certain hypotheses based on those in the literature, and associations found in a relatively small data set. A model based on the social ecology approach to the assessment of the environment has been used to aid this process and to describe the assumptions underlying the relationship between the environment and the resident. The attempt has been made to be explicit about assumptions throughout. Many of the measures used are inadequately validated and inferences have sometimes been drawn from very tenuous relationships. It is hoped, however, that this will prove a useful contribution to a specific area which contains very little in the way of research that relates measures of outcomes for demented residents to the experience of residential care.

Booth (1986a) concluded from his investigations into residential care for elderly people that.

Whatever factors account for the variations in outcome between homes seem to be outside the immediate control of the staff.

(p235)

The results of this study, if confirmed, challenge this pessimistic conclusion. Many of the influences found to be of importance on outcomes for elderly demented people are well within the control of staff, given sufficient motivation and resources:

- positive regimes have a beneficial effect on a variety of outcomes for residents
- care and supervisory staff have a vital role to play both in the formation of positive regimes and directly influencing outcomes for residents

- in-service training should take advantages of the benefits of nursing qualifications and mitigate the limitations
- however "confused" the resident appears, control over daily living activities should be facilitated as far as possible
- adaptation of existing facilities and future home designs should maximise the level of control demented residents have over their physical environment by the use of such devices as "meaningful" decisions
- short-term care should be limited in long-stay homes
- visitors should be encouraged to realise that they have a beneficial influence on the residents
- the use of psychotropic drugs should be carefully monitored

APPENDICES

APPENDIX 1 INSTRUMENTATION

<u>Form</u>	<u>Title of Questionnaire</u>	<u>Description of Use</u>
A	Homes Questionnaire	Sent to officers-in-charge before the initial visit to establish a description of the home and resident population.
B	Rating Scale	Used to make an observational assessment of the home, residents and staff at time 1.
C	Homes Regime	Completed by interviewing a senior member of staff at time 1 to establish general practice in the home.
D	Care Staff Questionnaire	Completed by all care staff in the home at time 1 to establish details about the staff themselves and including the SCES scale items. Staff were told whether to consider the whole home, a particular group or the demented residents in the home.
E	Stage II Home Questionnaire	Completed by interviewing senior staff at time 2 and consulting records kept by the home for the period in question.
F	Cognitive Assessment Scale	CAPE interview schedule completed by interviewing the sample residents at time 1 and time 2
G	Residents Behaviour	Completed by staff at time 1 and time 2 for each sample resident. Consists largely of the CAPE behaviour rating scale.

<u>Form</u>	<u>Title of Questionnaire</u>	<u>Description of Use</u>
H	Residents Regime	Completed by interviewing a member of staff at time 1 to establish individual care practices.
I	Residents Physical Environment	Used to record information observed about the sample residents' rooms and route diagram.
J	Stage II Resident Questionnaire	Completed by interviewing senior staff at time 2 about the sample residents.

HOMES QUESTIONNAIRE

Please complete these forms according to the position on 4 December 1985

1. Name of local authority _____

2. Name and address of home _____

3. Is the home please tick

(a) purpose built 1

(b) a conversion 2

4. During which period was the greater part of the building completed?

Up to 1919 1

1921 - 1940 2

1941 - 1960 3

1961 - 1970 4

1971 - 1980 5

1981 to date 6

5. How many residents is the home designed for? _____

6. Is the home intended to cater for Please tick

(a) All types of elderly residents 1

(b) Primarily elderly mentally infirm 2

(c) Other (please specify) _____ 3

8. Is day care provided in the home?

Yes	<input type="checkbox"/>	1
No	<input type="checkbox"/>	2

9. How many staff are currently employed in the home?

(a) Supervisory - number of people	<input type="checkbox"/>	<input type="checkbox"/>
Supervisory - whole time equivalent*	<input type="checkbox"/>	<input type="checkbox"/>
(b) Care staff - number of people	<input type="checkbox"/>	<input type="checkbox"/>
Care staff - whole time equivalent*	<input type="checkbox"/>	<input type="checkbox"/>
(c) Domestic staff - number of people	<input type="checkbox"/>	<input type="checkbox"/>
Domestic staff - whole time equivalent* including cooks	<input type="checkbox"/>	<input type="checkbox"/>
(d) Office staff - number of people	<input type="checkbox"/>	<input type="checkbox"/>
Office staff - whole time equivalent*	<input type="checkbox"/>	<input type="checkbox"/>
(e) Other staff (please specify)		

- number of people	<input type="checkbox"/>	<input type="checkbox"/>
- whole time equivalent	<input type="checkbox"/>	<input type="checkbox"/>

* whole time equivalent is the total number of hours divided by 39.

Column no. Instructions

- 2 Sex
- Code 1 Male
- 2 Female
- 3 Estimate if not known (mark 'E' to indicate).
- 4-5 Enter dates as follows: March 1978 03 78
- 6 Permanent residents include all persons normally resident, including those temporarily absent because of hospital visits, holidays, etc. Short-stay residents include all persons in the Home for a holiday or temporary care.
- Code 1 Permanent residents
- 2 Residents being assessed for permanent admission
- 3 Short-stay resident
- 7 Source of admission.
- Code 1 Another residential home
- 2 General hospital
- 3 Psychogeriatric hospital/ward
- 4 Mental hospital
- 5 Private housing - living alone
- 6 Private housing - living with family or friends
- 7 Sheltered housing
- 8 Hotel, boarding house or lodgings
- 9 None of these places
- 10 Not known

- 8 Visitors. Please code the frequency of individual social visits and trips from the Home to visit people. Exclude visits by social workers, doctors, etc.
- Code 1 Regularly receives visitors or goes out to visit people (at least once a month)
- 2 Occasionally receives visitors or goes out to visit people (at least once a year)
- 3 Rarely or never receives visitors or goes out to visit people (less than once a year)
- 9 Mobility. Please code the best single description of the resident's mobility, indicating the resident's greater level of accomplishment:
- Code 1 Able to walk at least 200 yards outdoors and negotiate steps, unaided
- 2 Able to walk indoors and negotiate steps, unaided
- 3 Able to walk on the level indoors, unaided
- 4 Able to walk on the level indoors, but only with stick(s) or other artificial aids
- 5 Able to walk on the level indoors, but only with the help of another person(s)
- 6 Mobile in wheelchair only
- 7 Bedfast
- 10 Blindness. A person should be coded as partially sighted if they have difficulty reading or seeing television, even with glasses. Persons with even poorer sight, for example, if unable to see furniture when moving about, should be coded as totally blind.
- Code 1 No sight problems
- 2 Partially sighted
- 3 Totally blind

- 11 Deafness. A person should be coded as hard of hearing if they suffer from hearing loss but can hear sufficiently to conduct a conversation, and totally deaf if no conversation is possible because they cannot hear.

Code 1 No hearing problems
2 Hard of hearing
3 Totally deaf

- 12 Contenance.

Code 1 Continent
2 Continent apart from isolated incidents
3 Incontinent of urine only
4 Incontinent of faeces only
5 Doubly incontinent

- 13 Mental illness/handicap Please code mental illness only if an official medical diagnosis has been made.

Code 0 None
1 Mentally handicapped
2 Psychotic
3 Depression
4 Senile dementia
5 Other

- 14 Mental state

Code 1 Mentally alert
2 Mildly confused or forgetful, with no deterioration of personality or habits
3 Moderately confused
4 Severe confusion, including deterioration of personality or habits

15 Antisocial behaviour.

- Code 1 Is not a nuisance
- 2 Is a minor nuisance, often restless or noisy and disturbing other residents
- 3 Is a major nuisance, for example displaying unacceptable behaviour, being noisy or wandering at night or placing staff or others at risk

16 Anxiety.

- Code 1 No evidence of anxiety
- 2 Tends to worry about minor matters
- 3 Often apprehensive and at times complains of loss of sleep
- 4 Frequently tense and irritable

17 Depression

- Code 1 No evidence of depression
- 2 Shows feelings of sadness or gloom
- 3 Shows feelings of sadness or gloom and often weeps
- 4 Depression and guilt, sleep disturbances or loss of energy

18-23 For each aspect of self-care, please use the following code:

- Code 1 Yes, with *no difficulty*
- 2 Yes, but with some difficulty
- 3 No, only with assistance

Form B: Rating Scale

This has been largely based on the Rating Scale devised by Lemke and Moos for the Multiphasic Environmental Assessment Procedure. The questions are generally self-explanatory but the handbook for users provides back-up descriptions for all questions except those outlined below which have been added to the scale. In general, assessments should be weighted more heavily towards those areas used by the sample residents. Questions where no guidance is given below are self-explanatory.

Section I

- 5 If bedroom or corridors vary in their floor covering, code 2 or 1 depending on the proportions that are carpeted.
- 8 A particularly beautiful view or a scene of activity rate equally 3 as each may be highly valued by residents. Otherwise code as in the handbook.
9. This question has been expanded to cover variations in design of lounges, dining areas and corridors as well as bedrooms. Otherwise as the handbook.
- 10 The definition of division should follow the same lines as those used for the sample residents' assessment.

Section III

3. Some indication of staff attitude to privacy can be gained by observing attitudes when toileting residents. Codes 0 and 1 are distinguished by whether staff show any awareness of residents' need for privacy. Code 2 if this is frequently a perfunctory attitude and 3 if importance is clearly attached to residents' privacy.

Section IV

3. If there is any difficulty in coding, ask an alert resident or member of staff if they got lost/confused when they first arrived.
7. When standing outside or in one of the areas specified, is it easy to distinguish which group unit/lounge (or other facility), is being observed?

If so, how? More than one way of distinguishing can be coded for each area.

8. Number of zones refers to Lipman's definition as 'functional' areas. Bedrooms are considered in blocks but corridors and sitting spaces individually.

RATING SCALE

Name of Home _____

Date _____

SECTION I RATINGS OF ENVIRONMENTAL CHARACTERISTICS

PART I RATINGS OF FOUR MAJOR LIVING AREAS (Tick the appropriate box)

- a. Lounges (only area used by sample)
- b. Dining room
- c. Residents' bedrooms
- d. Hallways

Directions: Rate each of these four areas and enter your rating (0,1,2,3) in the appropriate space.

1. Noise Level

- (3) Very quiet noticeable absence of sounds, even when area is being used by many residents
- (2) Quiet some sounds present, but reading would be easy
- (1) Somewhat noisy many sounds present or occasional loud interruptions
- (0) Very noisy sounds are loud and distracting, e.g., sustained noise from buzzers, cleaning equipment, etc.

_____ Lounge _____ Dining room _____ Bedrooms _____ Hallways

2. Odours

- (3) Fresh living spaces have pleasantly fresh odour
- (2) No odours nothing noticeable about the air, "normal"
- (1) Slightly objectionable air is slightly tainted in some way; stale, close, musty, medicinal
- (0) Distinctly objectionable unpleasant odours are apparent

_____ Lounge _____ Dining room _____ Bedrooms _____ Hallways

3. Level of Illumination

- | | | |
|-----|---------------------|--|
| (3) | Ample lighting | brightly illuminated, but without glare; reading would be easy in all areas of the room |
| (2) | Good lighting | lighting is basically good, but may be low, uneven or glaring in some areas; reading would be easy in most areas of the room |
| (1) | Barely adequate | lighting is low, uneven, or glaring; reading is difficult or possible in only certain area of the room |
| (0) | Inadequate lighting | illumination very low or very glaring in most areas of the room, reading would be difficult or impossible |
- Lounge Dining room Bedrooms Hallways

4. Condition of Walls and Floors (or Rugs)

- | | | |
|-----|----------------|--|
| (3) | Like new | both walls and floors are new looking; appear to be recently installed or painted; spotless |
| (2) | Good condition | good condition, but either walls or floors show some wear on close examination, some dust in corners |
| (1) | Fair condition | walls or floors show wear, but only in heavily used areas, moderately clean |
| (0) | Poor condition | walls or floors show evident wear; worn spots, cracks, peeling, needs cleaning |
- Lounge Dining room Bedrooms Hallways

5. Type of Flooring

- | | | |
|-----|-------------------|---|
| (3) | Fully carpetted | fitted carpets throughout |
| (2) | Mostly carpetted | carpets with lino, tiled or wood edging |
| (1) | Little carpetting | tiled/lino floors with occasional rugs, carpet pieces |
| (0) | No carpet | lino/tiled/wood throughout |
- Lounge Dining room Bedrooms Hallways

6. Condition of Furniture

- | | | |
|-----|---------------------|---|
| (3) | Excellent condition | like new; well kept, spotless, highly polished or without stains |
| (2) | Good condition | not new, but in good condition; slightly worn, small scratches, dusty, a few stains, some dirt in creases |
| (1) | Fair condition | older, but still structurally sound and kept moderately clean |
| (0) | Deteriorated | old and in poor repair; some tears, stains, dirt or dust, may be structurally unsound or dangerous |

_____ Lounge _____ Dining room _____ Bedrooms

7. Window Areas

- | | | |
|-----|------------------|--|
| (3) | Many windows | living space has large window areas which give an open feeling |
| (2) | Adequate windows | windows are sufficient to allow good light; there is no closed in feeling |
| (1) | Few windows | room tends to be dark, even on sunny days; there is feeling of being closed in |
| (0) | No windows | there are no windows, or the windows are non-functional |

_____ Lounge _____ Dining room _____ Bedrooms

8. View from Windows - Interest/Attractiveness

- | | | |
|-----|--------------------------------|--|
| (3) | Very interesting/ attractive | view overlooks very interesting and continuous activities, e.g. children playing or beautiful view |
| (2) | Interesting/ attractive | view overlooks some activities which draw mild attention, e.g., pedestrians or cars passing or well kept gardens |
| (1) | Lacks interest/ attractiveness | view is fairly dull or only rarely captures interest, lawn but no flowers or seasonal trees |
| (0) | No interest/ attractiveness | basically nothing happening; looking outside is boring, paved area - nothing growing |

_____ Lounge _____ Dining rooms _____ Bedrooms

9. Variation in Design

- (3) Distinct variation as if effort was made to vary style and decor from room to room
- (2) Moderate variation rooms (corridors) are distinct, but there is a general decor throughout
- (1) Nearly identical some variation in size, shape, or furniture arrangement; variation is not noticeable unless looked for
- (0) Identical no variation except for decorative detail such as paint or rug colour

Lounges _____ Dining Rooms _____ Bedrooms _____ Corridors _____

PART BRATINGS OF RESIDENTS' BEDROOMS OR APARTMENTS

(Tick the appropriate box)

10. Division of Area in Shared Rooms

- (3) Distinct division no shared rooms or very clearly defined use of screens
- (2) Moderate division no physical barriers but could draw a line easily to define areas - use of furniture etc
- (1) Little division could identify one or two items of furniture but no real division of space
- (0) No division cannot tell what furniture or space belongs to whom

11. Personalisation of Residents' Rooms (Apts)

- (3) Much personalisation most of the furnishings and objects in the room belong to the individual; time and energy have been spent in personalising the rooms
- (2) Some personalisation residents have added personal objects such as rugs pictures, chairs, favourite objects
- (1) Little personalisation some family pictures or personal articles, but room does not seem to "belong" to an individual
- (0) No personalisation is evident.

PART C RATING THE FACILITY AS A WHOLE (Tick the appropriate box)12. Distinctiveness of all Living Spaces

- (3) Much distinctiveness a concerted effort has been made to vary the decor from room to room
- (2) Moderate distinctiveness furnishings vary from room to room, but the overall room design is the same; wall texture and floor coverings show little variation
- (1) Some distinctiveness very little variation, even in furnishings; somewhat institutional, but some areas are distinct such as the lounge or lobby (e.g. floor coverings vary, pictures, or signs)
- (0) Little distinctiveness institutional appearances; most areas are quite similar, as in a hospital (without furniture, all rooms look about the same)

13. Overall Pleasantness of the Facility

- (3) Quite pleasant "I would feel good about placing a person in this housing"
- (2) Pleasant "I would not feel badly about placing a person in this housing if they were in some way limited to this choice (finances, closeness to friends, etc)"
- (1) Somewhat unpleasant "I would feel uneasy about placing a person here"
- (0) Distinctly unpleasant "I would not place a person here"

14. Overall Attractiveness of the Facility

- (3) Highly appealing attractive enough to be desirable for one's own home
- (2) Appealing overall effect is favourable; fairly comfortable although there may be some drawbacks (old furnishings, inconvenient)
- (1) Neutral neither positive nor negative features especially stand out; ordinary
- (0) Unattractive physical plant is unattractive or unappealing; it may be cold or somewhat sterile; arouses negative feelings

SECTION II RATINGS OF RESIDENTS (Tick appropriate box)1. Interaction of Residents

- (3) Considerable interaction majority of the residents seen are interacting; few isolates observed
- (2) Moderate interaction about half of the residents seen are interacting or in close proximity with others
- (1) Some interaction some residents seen interacting in pairs or in small groups, but many are alone
- (0) Very little interaction most residents seen either walking or sitting alone or in bed

2. Brief Verbal Exchanges (Greetings, pleasantries)

- (3) Many instances residents generally greet each other or exchange a few words when they meet or sit next to each other
- (2) Several instances residents sometimes greet each other and sometimes don't
- (1) Few instances some residents greet each other, but most seem to be withdrawn and isolated
- (0) Very few instances residents generally seem withdrawn and unaware of one another

3. General Amount of Activity

- (3) Very high most residents seem busy or active most of the time (e.g., visiting, reading, playing cards)
- (2) High activity level seems high, but some residents are inactive
- (1) Moderate some residents seem moderately busy, but a large proportion are rather inactive
- (0) Low few residents seem at all active

SECTION IIIRATINGS OF STAFF1. Quality of Interaction

- (3) Personal interaction staff interact with residents in a warm, personal manner
- (2) Warm professional interaction much of the staff's contact occurs as a part of their duties, but contact is personalised and informal
- (1) Formal professional interaction most contact is formal and relates mainly to duties
- (0) Stern professional interaction contact is formal or abrupt; some condescension may be evident

2. Physical Contact with Residents

- (3) Considerable physical contact extended or intimate contact between residents and staff observed, e.g., embracing or prolonged resting of arm on shoulder
- (2) Moderate physical contact some staff seen assisting residents walking or climbing stairs or holding resident's hand or arm during conversation
- (1) Some physical contact resident may take a staff person's arm for assistance, but little other physical contact observed
- (0) Little physical contact little or no physical contact observed

3. Respect for Privacy of Residents

- (3) Complete Respect All aspects of privacy are observed, staff knock and wait to be asked into rooms
- (2) Fairly Respectful Most courtesies are observed but cutting corners when "they don't know any better".
- (1) Some Respect Staff knock a door before entering room unasked. General lack of concern for privacy.
- (0) No Respect Doors left open when bathing residents. Staff enter residents rooms without knocking.

4. Availability of Staff to Residents

- | | | |
|--------------------------|----------------------------------|--|
| <input type="checkbox"/> | (3) Nearly constant availability | residents have almost constant access to staff; a staff member is usually visible from the doorway of each room or apartment |
| <input type="checkbox"/> | (2) Periodic availability | residents usually have access to staff; staff members are around much of the time and make systematic checks of residents |
| <input type="checkbox"/> | (1) Some availability | staff members are around some of the time; usually residents must seek staff out |
| <input type="checkbox"/> | (0) Almost no availability | residents must seek staff out and may have difficult locating a staff member when the need arises |

5. Staff Conflict

- | | | |
|--------------------------|---------------------------|---|
| <input type="checkbox"/> | (3) No conflict | detected no evidence of conflict among staff members; staff members show signs of friendliness toward one another |
| <input type="checkbox"/> | (2) Mild conflict | mild uneasiness or tension observed in some staff interactions |
| <input type="checkbox"/> | (1) Moderate conflict | some problems observed in staff interaction (e.g., some critical or disparaging comments may occur) |
| <input type="checkbox"/> | (0) Considerable conflict | staff observed complaining to or about one another; some harshness, anger, or bad temper observed |

SECTION IVPRIVACY AND ORIENTATION AIDS

- | | | |
|---|-----|---|
| 1. Do most bedrooms have their own washbasins? | Yes | 1 |
| | No | 2 |
| 2. Are there observations windows to most bedrooms?
(Do not count if curtained) | Yes | 0 |
| | No | 1 |
| 3. When first entering and walking around the home is it
easy to find your way around? | Yes | 1 |
| | No | 0 |
| 4. Is there at least one large clock in a communal area? | Yes | 1 |
| | No | |
| 5. Are names and photographs of staff displayed? | Yes | 1 |
| | No | 0 |
| 6. Are names and photographs of residents displayed anywhere? | Yes | 1 |
| | No | 0 |
| 7. Are the areas listed below clearly defined in any way? | | |

	Colour Scheme	Carpet Colour	Texture	Labels	Other	None	N/A
Groups Units	1	2	3	4	5	6	7
Bedrooms	1	2	3	4	5	6	7
Lounge	1	2	3	4	5	6	7
Dining	1	2	3	4	5	6	7
WC's	1	2	3	4	5	6	7
Bathrooms	1	2	3	4	5	6	7
Floors	1	2	3	4	5	6	7
Day Centre	1	2	3	4	5	6	7

Homes Regime

Name of home _____

Name of respondent _____

Status: Officer in Charge 1
 Deputy 2
 Other supervisory 3

1. Do residents normally visit the home before admission?

Yes	1
Policy - rarely in practice	2
No	3

2. Did most of your residents live locally before coming into residential care? (Show Card A)

All	1
Over three-quarters	2
About half	3
A quarter or less	4
None	5

3. What proportion of your residents (excluding new residents) do you think have adjusted well to residential care? (Show Card A)

All	1
Over three-quarters	2
About a half	3
A quarter or less	4
None	5

4. Is the home run on a "communal" or "group" basis?

Group	1
Communal	2
Mixed	3

5. Do residents normally have a written formal care plan?

Yes - All/most	1
Yes - some	2
General idea - all/most	3
General idea - some	4
None	5

6. Do you have case conferences or formal care meetings about residents on a regular basis?

Yes for all/most residents	1
Yes for certain residents	2
Policy to but rarely occurs	3
No - but informal structure exists	4
No	5

7. What grade of staff does this usually include? (Show Card B)
- | | |
|-----------------------|---|
| Supervisory staff | 1 |
| Care staff | 2 |
| Night staff | 3 |
| Domestic staff | 4 |
| Outside professionals | 5 |
| Other (specify) | 6 |
-
8. Is it a policy to try to find out information about each residents personal background/history? (Where they lived, what they did for a living etc)
- | | |
|---------------------|---|
| Yes | 1 |
| When feel necessary | 2 |
| No | 3 |
9. What proportion of your residents have retained their own G.P.? (Show Card A)
- | | |
|---------------------|---|
| All | 1 |
| Over three-quarters | 2 |
| About a half | 3 |
| A quarter or less | 4 |
| None | 5 |
10. Do most residents normally go to bed at a time set by staff?
- | | |
|--------------|---|
| No | 1 |
| By that time | 2 |
| Yes | 3 |
11. Do most residents get up at a time set by staff?
- | | |
|-----|---|
| No | 1 |
| Yes | 2 |
12. Generally speaking may residents have a bath when they choose?
- | | |
|----------------|---|
| Yes | 1 |
| Some residents | 2 |
| No | 3 |
13. How is toileting organised for those residents that require it?
- | | |
|---|---|
| Key worker attends to need | 1 |
| Staff respond to requests/individual timetables | 2 |
| Staff attend all necessary residents at set times | 3 |
14. Is there a set time for breakfast?
- | | |
|-----------------------------|---|
| No | 1 |
| Available during set period | 2 |
| Yes | 3 |
15. Is there a choice of menu for the main meal?
- | | |
|-----------|---|
| Yes | 1 |
| Sometimes | 2 |
| No | 3 |

16. Are residents consulted on menu plans?
- | | |
|--------------|---|
| Yes | 1 |
| Occasionally | 2 |
| No | 3 |
17. Generally speaking are residents allowed to use the grounds whenever they like?
- | | |
|-----|---|
| Yes | 1 |
| No | 2 |
18. May residents, generally speaking, go out of the home whenever they like?
- | | |
|--------------------------------------|---|
| Yes - free access | 1 |
| If staff informed yes - unsupervised | 2 |
| Yes - supervised | 3 |
| No | 4 |
19. Is the front door locked during the day?
- | | |
|-----------|---|
| Yes | 1 |
| Sometimes | 2 |
| No | 3 |
20. Generally speaking may all residents use all communal areas in the home?
- | | |
|-------------------|---|
| Yes | 1 |
| No - group design | 2 |
| No | 3 |
21. May residents use their bedroom at any time during the day?
- | | |
|------------------------|---|
| Yes | 1 |
| No - for short periods | 2 |
| No | 3 |
22. How many residents can lock their bedrooms? (Show Card A)
- | | |
|---------------------|---|
| All | 1 |
| Over three quarters | 2 |
| About a half | 3 |
| A quarter or less | 4 |
| None | 5 |
23. How many residents have somewhere private to lock away small valuable possessions? (Show Card A)
- | | |
|---------------------|---|
| All | 1 |
| Over three quarters | 2 |
| About a half | 3 |
| A quarter or less | 4 |
| None | 5 |
24. Are there facilities for residents to receive visitors in private?
- | | |
|--------------|---|
| Yes | 1 |
| Bedroom only | 2 |
| No | 3 |

25. May residents bring items of furniture into the home?
- | | |
|-------------------|---|
| Yes - if will fit | 1 |
| If small | 2 |
| No | 3 |
26. Do residents normally choose colour scheme, curtains etc. when their bedrooms is being furnished?
- | | |
|----------------------------|---|
| Yes | 1 |
| Would allow but no one has | 2 |
| No | 3 |
27. How many residents in general have full control over their personal finances after deduction for keep?
- | | |
|---------------------|---|
| All | 1 |
| Over three quarters | 2 |
| About a half | 3 |
| A quarter or less | 4 |
| None | 5 |
28. Is there a telephone generally available for residents?
- | | |
|----------------------|---|
| Yes, pay | 1 |
| Office, on request | 2 |
| Exceptional use only | 3 |
29. Can residents buy alcoholic drinks in the home?
- | | |
|--------------|---|
| Yes | 1 |
| Occasionally | 2 |
| No | 3 |
30. Do residents normally choose what they are to wear each day?
- | | |
|----------------|---|
| Yes | 1 |
| Some residents | 2 |
| No | 3 |
31. Do residents normally choose new clothes?
- | | |
|----------------|---|
| Yes | 1 |
| Some residents | 2 |
| No | 3 |
32. Do staff on duty normally eat with residents at their midday meal?
- | | |
|-----------|---|
| Yes | 1 |
| Sometimes | 2 |
| No | 3 |
33. Do residents normally sit in the same place at mealtimes?
- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

34. Do [the more] confused residents tend to sit together at mealtimes?
- | | |
|-----|---|
| Yes | 1 |
| No | 2 |
35. Do [the more] confused residents tend to use one lounge?
- | | |
|-----|---|
| Yes | 1 |
| No | 0 |
36. How do [the more] lucid residents generally seem to feel about the [more] confused residents?
- | | |
|---------------------|---|
| Accepting, like | 1 |
| Tolerant | 2 |
| Rejecting | 3 |
| Openly antagonistic | 4 |
| Not applicable | 5 |
37. How many residents generally have 'their own chair' and rarely sit elsewhere? (Show Card A)
- | | |
|---------------------|---|
| All | 1 |
| Over three quarters | 2 |
| About a half | 3 |
| A quarter or less | 4 |
| None | 5 |
38. In general are residents encouraged to make tea for themselves?
- | | |
|---------------------|---|
| Yes | 1 |
| No (facility there) | 2 |
| No (no facilities) | 3 |
39. Do residents do any domestic jobs about the home? (Show Card A)
- | | |
|---------------------|---|
| All | 1 |
| Over three-quarters | 2 |
| About half | 3 |
| Less than a quarter | 4 |
| None | 5 |
40. Do residents ever organise any activities, such as games, for themselves?
- | | |
|--------------------|---|
| Yes - regularly | 1 |
| Yes - occasionally | 2 |
| Never | 3 |
41. Are holidays ever arranged for groups of residents?
- | | |
|---------------------------|---|
| Yes - one or twice a year | 1 |
| Yes - less often | 2 |
| No | 3 |

42. How often does the following occur in the Home? (Show Card C)

	Daily	More than	Weekly	Monthly	2-3 Monthly	1-2 per year	Less often	Never
Live entertainment by outside groups	1	2	3	4	5	6	7	8
Live entertainment by staff	1	2	3	4	5	6	7	8
Day or evening outing for groups	1	2	3	4	5	6	7	8
Group therapy (RO etc)	1	2	3	4	5	6	7	8
Dancing/music & movement	1	2	3	4	5	6	7	8
Other physical exercise	1	2	3	4	5	6	7	8
Other clubs, groups	1	2	3	4	5	6	7	8
Other activities	1	2	3	4	5	6	7	8
(specify)								

43. How often do the following visit the home? (Show Card C)

	Daily	More than	Weekly	Monthly	2-3 Monthly	1-2 per year	Less often	Never
Hairdresser	1	2	3	4	5	6	7	8
Chiropidist	1	2	3	4	5	6	7	8
League of friends	1	2	3	4	5	6	7	8
Local clubs etc.	1	2	3	4	5	6	7	8
Local school	1	2	3	4	5	6	7	8
Newsagent	1	2	3	4	5	6	7	8
Library	1	2	3	4	5	6	7	8
Retailers	1	2	3	4	5	6	7	8
Beautician	1	2	3	4	5	6	7	8
Church representatives	1	2	3	4	5	6	7	8
Occupational therapist	1	2	3	4	5	6	7	8
Other								
(Specify)	1	2	3	4	5	6	7	8

44. If a resident wished to complain, about the home or a member of staff for example, does a formal complaints procedure exist?

Yes 1
 Informal procedure 2
 No 3

45. Is there a resident's committee?

Yes 1
 Trying to set one up 2
 Used to have 3
 No 4

46. Are there regular staff meetings?

- Yes 1
- Occasional 2
- No 3

47. Are there any pet animals in the home? How many?

- Caged animals _____
- Cats, dogs _____
- None _____

48. What, if any, do you feel are the main restrictions upon you in running this home entirely as you would wish?

- Lack of staff 1
- Lack of training for staff 2
- Uncooperative staff 3
- Poorly designed home 4
- Poorly situated home 5
- Lack of facilities 6
- Unnecessary rules & restrictions from head office 7
- Inappropriate/unbalanced client group 8
- Lack of coordination with field workers 9
- Other 10

IF the home provides day care

49. How many people attend the home for day care?

50. On average how many day care clients are here on any one day?

51. Do the day care clients mix freely with the residents?

- | | |
|--------------------------|---|
| Mix freely | 1 |
| Tend to stay separate | 2 |
| Have separate facilities | 3 |
| Some come in home | |
| No contact | 4 |

CARE STAFF QUESTIONNAIRE

Name of Home _____

Date _____

SECTION A

- | | | |
|------------------|--------------------------|---|
| 1. Position held | Officer-in-Charge | 1 |
| | Deputy/other supervisory | 2 |
| | Senior Care Assistant | 3 |
| | Care Assistant | 4 |
| | Other (please specify) | 5 |
-

- | | | |
|--------|--------|---|
| 2. Sex | Male | 1 |
| | Female | 2 |

- | | | |
|--------|---------|---|
| 3. Age | 16-20 | 1 |
| | 21-26 | 2 |
| | 27-35 | 3 |
| | 36-45 | 4 |
| | 46-55 | 5 |
| | Over 55 | 6 |

- | | | |
|---|----------------|---|
| 5. How many hours do you normally work in a week? | Under 10 hours | 1 |
| | 11-20 hours | 2 |
| | 21-30 hours | 3 |
| | Over 30 hours | 4 |

- | | | |
|---------------------------------------|-----------|---|
| 6. Which shifts do you normally work? | Daytime | 1 |
| | Nighttime | 2 |
| | Varies | 3 |

- | | | |
|---|------------------------|---|
| 7. How long have you worked in this home? | Less than 6 months | 1 |
| | 6 months - 1 year | 2 |
| | Over 1 year - 2 years | 3 |
| | Over 2 years - 5 years | 4 |
| | Over 5 years | 5 |

8. What relevant qualification/previous experience do you have?

CQSW	1
CSS or other social work qualification	2
SRN/RMN	3
SEN	4
In service training	5
Previous work in home for the elderly	6
Work in hospital with the elderly	7
Other previous work with the elderly (eg day care	8
Caring for elderly relative/friend	9
Other (please specify)	10

None of the above	11
-------------------	----

9. How near to the home do you live?

On the premises	1
Locally (within about 5 miles)	2
More than 5 miles from the home	3

10. In general, what type of resident would you say that you preferred to work with?

"Confused" residents	1
Alert residents	2
No preference	3

11. What do you feel about the numbers of "confused" residents in the home?

There are too many confused residents	1
The balance is about right	2
Would prefer more "confused" residents	3

SECTION B

There are 63 questions here. They are statements about the home or group of residents with whom you work. Based on your experience here, please answer these questions YES or NO. Ask yourself which answer is generally true.

Circle YES if you think the statement is true or mostly true of this place

Circle NO if you think the statement is false or mostly false of this place

Please be sure to answer every question. Thank you for your cooperation.

If you are completing this section for one group or section of the home please identify the group or section here:

1.	Do residents get a lot of individual attention?	Yes	No
2.	Do residents ever start arguments?	Yes	No
3.	Do residents usually depend on the staff to set up activities for them?	Yes	No
4.	Are residents careful about what they say to each other?	Yes	No
5.	Do residents always know when the staff will be around?	Yes	No
6.	Are the staff strict about rules and regulations?	Yes	No
7.	Is the furniture here comfortable and homely?	Yes	No
8.	Do staff members spend a lot of time with residents?	Yes	No
9.	Is it unusual for residents to openly express their anger?	Yes	No
10.	Do residents usually wait for staff to suggest an idea or activity?	Yes	No
11.	Are personal problems openly talked about?	Yes	No
12.	Are activities for residents carefully planned?	Yes	No
13.	Are new and different ideas often tried out?	Yes	No
14.	Is it ever cold and drafty here?	Yes	No
15.	Do staff members sometimes talk down to residents?	Yes	No
16.	Do residents sometimes criticise or make fun of the place?	Yes	No
17.	Are residents taught how to deal with practical problems?	Yes	No
18.	Do residents tend to hide their feelings from one another?	Yes	No
19.	Do some residents look messy?	Yes	No
20.	If two residents fight with each other will they get in trouble?	Yes	No
21.	Can residents have privacy whenever they want?	Yes	No
22.	Are there a lot of social activities?	Yes	No
23.	Do residents usually keep their disagreements to themselves?	Yes	No
24.	Are many new skills taught here?	Yes	No
25.	Do residents talk a lot about their fears?	Yes	No
26.	Do things always seem to be changing around here?	Yes	No
27.	Do staff allow the residents to break minor rules?	Yes	No
28.	Does this place seem crowded?	Yes	No
29.	Do a lot of the residents just seem to be passing time?	Yes	No

30	Is it unusual for residents to complain about each other?	Yes	No
31	Are residents learning to do more things on their own?	Yes	No
32	Is it hard to tell how the residents are feeling?	Yes	No
33	Do residents know what will happen to them if they break a rule?	Yes	No
34	Are suggestions made by the residents acted upon?	Yes	No
35	Is it sometimes very noisy?	Yes	No
36	Are requests made by residents usually taken care of right away?	Yes	No
37	Is it always peaceful and quiet?	Yes	No
38	Are the residents strongly encouraged to make their own decisions?	Yes	No
39	Do residents talk a lot about their past dreams and ambitions?	Yes	No
40	Is there a lot of confusion here at times?	Yes	No
41	Do residents have any say in making the rules?	Yes	No
42	Does it ever smell bad here?	Yes	No
43	Do staff members sometimes criticise residents over minor things?	Yes	No
44	Do residents often get impatient with each other?	Yes	No
45	Do residents sometimes take charge of activities?	Yes	No
46	Do residents ever talk about illness and death?	Yes	No
47	Is this place very well organised?	Yes	No
48	Are the rules and regulations rather strictly enforced?	Yes	No
49	Is it ever hot and stuffy here?	Yes	No
50	Do residents tend to keep to themselves?	Yes	No
51	Do residents complain a lot?	Yes	No
52	Do residents care more about the past than the future?	Yes	No
53	Do residents talk about their money problems?	Yes	No
54	Are things sometimes unclear around here?	Yes	No
55	Would a resident ever be asked to leave if he/she broke a rule?	Yes	No
56	Is the lighting very good here?	Yes	No
57	Are the discussions very interesting?	Yes	No
58	Do residents criticise each other a lot?	Yes	No

59	Are some of the residents' activities really challenging?	Yes	No
60	Do residents keep their personal problems to themselves?	Yes	No
61	Are people always changing their minds around here?	Yes	No
62	Can residents change things if they really try?	Yes	No
63	Do the colours and decorations make this a warm and cheerful place?	Yes	No

STAGE II HOME QUESTIONNAIRE

Name of home

Name of respondent

1. What major events have happened within the last six months that are likely to have affected the residents?

Dates

Office in Charge left

New Officer in Charge

Building works

Epidemic illness (staff)

Epidemic illness (residents)

Other (specify)

.....

.....

2. Have there been any major changes in policy or practice in running the home within the last six months?

Yes 1

No 0

Specify

.....

3. Have any new activities/groups been introduced during the last six months?

No Date

Social groups () _____

RO/Reminiscence () _____

OT () _____

Physical Activity () _____

Other () _____

None

4. Do any of the sample residents attend? When did they start?

	<u>Names</u>	<u>Date</u>
Social		
Therapy		
OT		
Physical		
Other		

5. Turnover of residents and staff

	1	2	3	4	5	6
Dates						
<u>Residents</u> (no)						
Died						
Into hospital						
Left (other)						
Returned						
New admissions						
<u>Staff</u>						
Left (no)						
Arrived (no)						
Sick (days)						
Agency staff employed (no)						

6. How many hours are currently worked in the home? How many people?

	<u>Hours</u>	<u>People</u>
Supervisory staff
Care staff
Domestic staff
Office staff
Handyman
Other
Night staff

7. Is there a key worker scheme?

Yes

For some staff and residents

No

CLIFTON ASSESSMENT PROCEDURES FOR THE ELDERLY (CAPE)

Cognitive Assessment Scale

Name:

Current address/placement:

.....

Date of birth: Occupation:

Information/Orientation

Name: Hospital/Address: Colour of British Flag:
 Age: City: Day:
 D.o.B. P.M.: Month:
 Ward Place: U.S. President: Year:
 I/O Score . . .

Mental Ability

Count 1-20	Time:.....Errors:.....	Alphabet	Time:.....Errors:.....
≤10 secs - no errors	3	≤10 secs - no errors	3
≤30 secs - no errors	2	≤30 secs - no errors	2
≤30 secs - 1 error	1	≤30 secs - 1 error	1
	0		0
Write name:		Reading: (See overleaf)	
Correct and legible	2	10 words or more	3
Can write but not correctly	1	6-9 words	2
Not able to	0	1-5 words	1
		0 words	0
			MAb Score . . .

Psychomotor Time: Errors: Pm Score . . .

Scoring

Errors: 0-12	13-24	25-36	37-48	49-60	61-72	73-84	85-96	96+	N/C	N/A
Score: 10	9	8	7	6	5	4	3	2	1	0
Add Bonus 2 if 60 secs or under; 1 if 120 secs or under										

Assessed by:

Date:

RESIDENT'S BEHAVIOUR

Name: _____ Date of birth: _____

Current address/placement _____

Section A

Please ring appropriate number for each item

1. When bathing or dressing, he/she requires:

- no assistance 0
- some assistance 1
- maximum assistance 2

2. With regard to walking, he/she:

- shows no signs of weakness 0
- walks slowly without aid, or uses a stick 1
- is unable to walk, or if able to walk, needs frame, crutches or someone by his/her side 2

3. He/she is incontinent or urine and/or faeces (day or night):

- never 0
- sometimes (once or twice per week) 1
- frequently (3 times per week or more) 2

4. He/she is in bed during the day (bed does **not** include couch, settee, etc):

- never 0
- sometimes 1
- almost always 2

5. He/she is confused (unable to find way around, loses possessions, etc):

- almost never confused 0
- sometimes confused 1
- almost always confused 2

6. When left to his/her own devices, his/her appearance (clothes and/or hair) is:

- almost never disorderly 0
- sometimes disorderly 1
- almost always disorderly 2

7. If allowed outside, he/she would:

- never need supervision 0
- sometimes need supervision 1
- always need supervision 2

8. He/she helps out in the home/ward:
- often helps out 0
 - sometimes helps out 1
 - never helps out 2
9. He/she keeps him/herself occupied in a constructive or useful activity (works, reads, plays games, has hobbies, etc):
- almost always occupied 0
 - sometimes occupied 1
 - almost never occupied 2
10. He/she socialises with others:
- does establish a good relationship with others 0
 - has some difficulty establishing good relations 1
 - has a great deal of difficulty establishing good relations 2
11. He/she is willing to do things suggested or asked of him/her:
- often goes along, actively co-operative 0
 - often goes along, passively 1
 - sometimes goes along 2
 - almost never goes along 3
12. He/she understands what you communicate to him/her (you may use speaking, writing or gesturing):
- understands almost everything you communicate 0
 - understands some of what you communicate 1
 - understands almost nothing of what you communicate 2
13. He/she communicates in any manner (by speaking, writing or gesturing):
- well enough to make him/herself easily understood at all times 0
 - can be understood sometimes or with some difficulty 1
 - can rarely or never be understood for whatever reason 2
14. He/she is objectionable to others during the day (loud or constant talking, pilfering, soiling furniture, interfering with affairs of others):
- rarely or never 0
 - sometimes 1
 - frequently 2
15. He/she is objectionable to others during the night (loud or constant talking, pilfering, soiling furniture, interfering in affairs of others, wandering about, etc.):
- rarely or never 0
 - sometimes 1
 - frequently 2

16. He/she accuses others of doing him/her bodily harm or stealing his/her personal possessions - if you are sure the accusations are true, rate zero, otherwise rate one or two:

- never 0
- sometimes 1
- frequently 2

17. He/she hoards apparently meaningless items (wads of paper, string, scraps of food etc.):

- never 0
- sometimes 1
- frequently 2

18. His/her sleep pattern at night is:

- almost never awake 0
- sometimes awake 1
- often awake 2

Eyesight: (tick which applies) - can see (or can see with glasses)
 - partially blind
 - totally blind

Hearing: (tick which applies) - no hearing difficulties, without hearing aid
 - no hearing difficulties, though requires hearing aid
 - has hearing difficulties which interfere with communication
 - is very deaf

19. He/she becomes agitated:

- rarely or never 0
- sometimes 1
- frequently 2

20. He/she smiles:

- frequently 0
- sometimes 1
- rarely or never 2

Section B

1. Has this resident been medically diagnosed as currently have any of the following conditions?

- senile dementia 1
- depression 2
- personality disorder 3
- other mental illness* 4
- heart condition 5
- other physical illness* 6
- none of the above 7

* Please specify 'other' illness _____

2. Does this resident currently show any evidence of anxiety?

- No 1
- Tends to worry about minor matters 2
- Often apprehensive and at times complains of loss of sleep 3
- Frequently tense and irritable 4

3. Does this resident show any evidence of depression?

- No 1
- Shows feelings of sadness or gloom 2
- Shows feeling of sadness or gloom and often weeps 3
- Depression and guilt, sleep disturbance and loss of energy 4

4. What drug does this resident take at the moment?

Number of types (please specify)

- Tranquillizers - major _____
- Tranquillizers - minor _____
- Anti-depressants _____
- Sleeping tablets _____
- Other sedatives or hypnotics _____
- Other psychotropic _____
- Other (number of types only) _____
- None

5. How many different members of staff assist/attend this resident in a normal day?

One per shift	1
Principal carer/key worker with occasional others	2
two	3
three	4
four	5
five	6
six	7
seven	8
eight or more	9

Resident's Regime

Name of home _____

Name of resident _____

Name of Respondent _____

<u>Status:</u>	Officer in charge	1
	Deputy	2
	Other supervisory	3
	Senior care staff	4

1. What was the principal reason for his/her admission to this home?

Unable to cope on own	1
Spouse unable to cope	2
Spouse refused to have back home	3
Relations unable to cope	4
Isolation	5
Mental problem	6
Physical problem	7
Housing difficulties	8
Other _____	9

2. Did s/he visit the home before admission?

Yes	1
No	2
Emergency admission	3

3. Did s/he have any mental health problems before admission? If yes - of what kind?

No	1
Yes - mild dementia	2
- moderate dementia	3
- severe dementia	4
- depression	5
- Other (specify)	6
_____	6
- None	7
- Don't know	8

4. Do you feel this resident has adjusted as well as is possible for him/her to living in residential care?
- | | | |
|--|----------------------------|---|
| | Yes | 1 |
| | No - still coming to terms | 2 |
| | No - unlikely ever to | 3 |
| | Don't know | 4 |
5. Did s/he live locally before coming into residential care?
- | | | |
|--|------------|---|
| | Yes | 1 |
| | No | 2 |
| | Don't know | 3 |
6. What did he/she do for a living before they retired? (If housewife, husband's occupation)
- | | | |
|--|------------|--|
| | Know | |
| | Don't Know | |
7. Have you any information about his/her personal history?
If yes - how detailed is your information?
- | | | |
|--|----------------------|---|
| | Yes - very detailed | 1 |
| | - patchy, adequate | 2 |
| | - patchy, inadequate | 3 |
- If no - has any one tried to find out about their past?
- | | | |
|--|------------|---|
| | No - tried | 4 |
| | No | 5 |
8. Do you have a formal, written care plan/specific policy when caring for this resident?
- | | | |
|--|-----------------------|---|
| | Yes - care plan | 1 |
| | Yes - specific policy | 2 |
| | No - general idea | 3 |
| | No (go to Q.10) | 4 |
-
9. If this resident was sitting in the lounge that they use most often could they find their way unaided to
- | | | | |
|--|--------------------|--------------------|---|
| | a) the toilet | Unaided | 2 |
| | | With prompting | 1 |
| | | Needs to be guided | 0 |
| | | D/K | 9 |
| | b) their bedroom | Unaided | 2 |
| | | With prompting | 1 |
| | | Needs to be Guided | 0 |
| | | D/K | 9 |
| | c) the dining room | Unaided | 2 |
| | | With prompting | 1 |
| | | Needs to be guided | 0 |
| | | D/K | 9 |

10. Can s/he find his/her way from his/her bedroom to the toilet?

Unaided	2
With prompting	1
Needs to be guided	0
D/K	9

11. How often, if ever, does s/he display any of the following behaviour?
(Show Card D)

	Day		Night		Both		Never
	Occ	Freq	Occ	Freq	Occ	Freq	
a) Apathy/severe withdrawal	1	2	3	4	5	6	0
b) Restlessness/wandering in the home	1	2	3	4	5	6	0
c) Wandering outside the home	1	2	3	4	5	6	0
d) Wakefulness/disturbing other residents	1	2	3	4	5	6	0
e) Incontinence	1	2	3	4	5	6	0
f) Groundless accusations	1	2	3	4	5	6	0
g) Aggressive behaviour to staff/residents	1	2	3	4	5	6	0
h) Weeping	1	2	3	4	5	6	0
i) Perseveration/repetitiveness (physical)	1	2	3	4	5	6	0
j) Perseveration/repetitiveness (verbal)	1	2	3	4	5	6	0
k) Bizarre offensive behaviour (specify) _____	1	2	3	4	5	6	0
l) Strange inoffensive behaviour (specify) _____	1	2	3	4	5	6	0
m) Other (specify) _____	1	2	3	4	5	6	0

12. How do you or your staff normally react to her/him when s/he _____
 (Specify each behaviour mentioned in Q.11)

- i) usually?
later? (when the behaviour/situation is over)
- ii) Would you react any differently if circumstances were ideal? (e.g. more staff)

Circle appropriate letter

	Usually	Ideally
1. Depends on which staff are on duty	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
2. Ignore	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
3. Simply cope with the physical consequences	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
4. Physically restrain, use drug	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
5. Reprimand/warn	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
6. Observe but leave alone unless causing danger/distress	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
7. Talk to them, placate	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
8. Attempt to discuss behaviour/cause of behaviour	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
9. Console/respond in kind/act as if behaviour is rational	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
10. Attempt to redirect/distract/encourage appropriate action	a b c d e f g h i j k l m n o p q r	a c b d e f g h i j k l m n o p q r
11. Respond in his/her own historical terms to try to obtain suitable behaviour	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
12. Other (specify)	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r

- | | | |
|----------------------|-----------------|-----------------------------|
| a) Apathy | e) Incontinence | i) Perseveration (physical) |
| b) Wandering inside | f) Accusations | j) Perseveration (verbal) |
| c) Wandering Outside | g) Aggression | k) Bizarre, offensive |
| d) Wakefulness | H) Weeping | l) Strange, inoffensive |
| | | m) Other |

13. Do you do anything specific to try to prevent _____?
 (Specify each behaviour in Q.11)

i) What do you use most often? Your main approach?

ii) What would you do if circumstances were ideal?

	Usually	Ideally
1. Response to behaviour	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
2. Restrictions possible behaviour (locking doors, drugs)	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
3. General attention/stimulation	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
4. Removal/mitigate cause (avoid drugs, toileting)	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
5. Rely on other residents (to alert staff, assist resident)	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
6. Classroom/group therapy	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
7. Individual therapy	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
8. Other	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
9. None	a b c d e f g h i j k l m n o p q r	a b c d e f g h i j k l m n o p q r
a) Apathy	h) Weeping	
b) Wandering inside	i) Perservation (physical)	
c) Wandering outside	j) Perservation (verbal)	
d) Wakefulness	k) Bizarre, Offensive	
e) Incontinence	l) Strange, inoffensive	
f) Accusations	m) Other	
g) Aggression		

FORM H (continued)

14. When s/he behaves appropriately how do you feel staff normally respond?
- | | | |
|-----------------------------------|--|---|
| Reward - immediate | | 1 |
| Reward - token, promise | | 2 |
| Reward - verbal praise | | 3 |
| Ignore/don't notice/too busy | | 4 |
| Varies | | 5 |
| S/he never responds appropriately | | 6 |
15. Does s/he normally go to bed at a time set by staff?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
16. Does s/he normally choose when to get up?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
17. Does s/he normally choose when to have a bath?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
18. Does a member of staff normally assist/supervise bathing?
- | | | |
|--|----|---|
| | No | 1 |
|--|----|---|
- If yes - Does s/he choose who?
- | | | |
|--|-------------------------|---|
| | Yes - choose | 2 |
| | Yes - key worker | 3 |
| | Yes - whoever available | 4 |
19. Does s/he ever go into the garden/grounds? If yes - is this supervised?
If no - why is that?
- | | | |
|------------------------------|--|---|
| Yes, free access | | 1 |
| Yes - supervised | | 2 |
| Allowed but never goes out | | 3 |
| Physically unable to get out | | 4 |
| No staff time | | 5 |
| Is not allowed out | | 6 |
20. Does s/he ever go outside the home? If yes - is this supervised?
If no - why is that?
- | | | |
|------------------------------|--|---|
| Yes, free access | | 1 |
| Yes - supervised | | 2 |
| Allowed but never goes out | | 3 |
| Physically unable to get out | | 4 |
| No staff time | | 5 |
| Is not allowed out | | 6 |
21. Is s/he allowed in all the communal areas in the home?
- | | | |
|--|-------------------|---|
| | Yes | 1 |
| | No - group living | 2 |
| | No | 3 |

22. Where does s/he normally sit? Is this always in the same chair?

- | | | |
|--|--------------------------|---|
| | One chair/place - lounge | 1 |
| | - other communal | 2 |
| | Lounge/sitting area | 3 |
| | Other communal area | 4 |
| | Bedroom | 5 |
| | No regular place | 6 |

23. Do they tend to sit

- | | |
|-------------|---|
| In a group | 1 |
| In a row | 2 |
| or Isolated | 3 |

24. Has s/he stayed in the same bedroom since entering the home? If no - when did s/he last change rooms?

- | | | |
|----------|----------------------|---|
| Changed: | Same room | 1 |
| | Over a year ago | 2 |
| | 6 months - 1 year | 3 |
| | 3 - 6 months | 4 |
| | Within last 3 months | 5 |

25. Does s/he share her/his bedroom?

- | | |
|----------------|---|
| Single | 1 |
| Double | 2 |
| Three beds | 3 |
| 4 or more beds | 4 |

26. Who does s/he share with? (enter identification numbers)

27. How does s/he get on with the resident(s) with whom s/he shares?

- | | |
|---------------------------|---|
| Very well | 1 |
| Tolerant - accepting | 2 |
| Rejecting - argumentative | 3 |

28. May s/he use his/her bedroom at anytime during the day?

- | | |
|------------------------|---|
| Yes | 1 |
| No - for short periods | 2 |
| No | 3 |

29. Can s/he lock his/her bedroom?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

30. Does s/he have somewhere private to lock away small valuable possessions?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

31. When decorating their bedrooms would you allow him/her to choose curtains, colour scheme etc.
- | | | |
|--|----------------------|---|
| | Yes | 1 |
| | No | 2 |
| | They couldn't choose | 3 |
32. Does s/he have full control over his/her personal finances after paying for keep?
- | | | |
|--|--------------------------|---|
| | Yes | 1 |
| | No a little pocket money | 2 |
| | Issue money as required | 3 |
| | Doesn't need money | 4 |
33. Does s/he normally choose what to wear each day?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
34. Does s/he normally choose new clothes for him/herself?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
35. At mealtimes who does s/he usually sit with. (Show Card E)
- | | | |
|--|----------------------|---|
| | Lucid Residents | 1 |
| | Residents more alert | 2 |
| | Same Level | 3 |
| | More confused | 4 |
| | Range of abilities | 5 |
| | Sits alone | 6 |
36. How many people sit at their table? _____
37. Does s/he have a particularly good relationship with any members of staff?
- | | | |
|--|-----------------|---|
| | Yes - several | 1 |
| | Yes - one | 2 |
| | No (Go to Q.32) | 3 |
38. What grade is this/are these member(s) of staff? (Show Card C)
- | | | |
|--|-----------------------|---|
| | Supervisory | 1 |
| | Care staff | 2 |
| | Night staff | 3 |
| | Domestic staff | 4 |
| | Outside professionals | 5 |
| | Other (specify) | 6 |
-

39. Does s/he have a particularly bad relationship with any members of staff?
- | | | |
|--|-----------------|---|
| | Yes - several | 1 |
| | Yes - one | 2 |
| | No (Go to Q.32) | 3 |
40. What grade is this/are these member(s) of staff? (Show Card C)
- | | | |
|--|-----------------------|---|
| | Supervisory | 1 |
| | Care staff | 2 |
| | Night staff | 3 |
| | Domestic staff | 4 |
| | Outside professionals | 5 |
| | Other (specify) | 6 |
-
41. Does s/he have any particular friends in the home?
- | | | |
|--|---------------|---|
| | Yes - several | 1 |
| | Yes - one | 2 |
| | No | 3 |
42. Does s/he have any particular enemies in the home?
- | | | |
|--|---------------|---|
| | Yes - several | 1 |
| | Yes - one | 2 |
| | No | 3 |
43. Does s/he tend to associate mostly with
- (Show Card E)
- | | | |
|--|--|---|
| | Lucid residents | 1 |
| | Residents more alert than herself | 2 |
| | Confused residents of about the same level | 3 |
| | More severely confused residents | 4 |
| | Residents with a range of abilities | 5 |
| | Staff only | 6 |
| | Does not effectively associate with anyone | 7 |
| | Don't know | 8 |
44. Has s/he retained her own G.P.?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
45. Is s/he encouraged to make tea for him/herself?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |
46. Does s/he do any domestic tasks?
- | | | |
|--|-----|---|
| | Yes | 1 |
| | No | 2 |

FORM H (continued)

47. Does s/he have any visitors? If yes - How often do they come?
(Show Card B)

- Daily 1
- More than weekly 2
- Weekly 3
- Monthly 4
- Once every 2-3 months 5
- Once or twice a year 6
- Less often 7
- Never 8
- Don't know 9

48. Does s/he ever go for day outings with relatives/friends? How often?
(Show Card B)

- Daily 1
- More than weekly 2
- Weekly 3
- Monthly 4
- Once every 2-3 months 5
- Once or twice a year 6
- Less often 7
- Never 8
- Don't know 9

49. Does s/he go away for weekends or holidays with relatives/friends?
(Yearly or more often)

- Yes 1
- No 2

50. Does s/he go for day or evening outings with the home. How often?
(Show Card B)

- Daily 1
- More than weekly 2
- Weekly 3
- Monthly 4
- Once every 2-3 months 5
- Once or twice a year 6
- Less often 7
- No 8

If yes - Is this usually with

- One member of staff 1
- Small (10 or less) group of residents 2
- Large group of residents 3

51. Does s/he ever go on holiday with the home?

- Yes, once or twice yearly 1
- Yes, less often 2
- Not yet - will do 3
- Could not take him/her 4
- No holidays 5

52. Does s/he participate in communal activities when they are arranged?

- Yes - regularly 1
- Yes - occasionally 2
- No 3

53. How often does s/he participate in the following activities?

(Show Card B)

	Weekly	More than weekly	Weekly	Monthly	2-3 monthly	1-2 per year	Less Often	Never
Attend clubs etc outside the home	1	2	3	4	5	6	7	8
Go to church	1	2	3	4	5	6	7	8
Attend service in the home	1	2	3	4	5	6	7	8
Attend group therapy	1	2	3	4	5	6	7	8
Attend clubs/groups in the home	1	2	3	4	5	6	7	8
Garden	1	2	3	4	5	6	7	8
Sew/knit	1	2	3	4	5	6	7	8
Craftwork	1	2	3	4	5	6	7	8
Tend house plants	1	2	3	4	5	6	7	8
Jigsaws/puzzles	1	2	3	4	5	6	7	8
Play cards/dominoes	1	2	3	4	5	6	7	8
Read	1	2	3	4	5	6	7	8
Watch television	1	2	3	4	5	6	7	8
Ballroom dancing/ music & movement	1	2	3	4	5	6	7	8
Physical exercise	1	2	3	4	5	6	7	8
See the hairdresser	1	2	3	4	5	6	7	8
Other	1	2	3	4	5	6	7	8

54. About how often does this resident see the following professionals.
(Show Card B)

55. Do you consider the amount of contact between this resident and
_____ (name in turn) to be adequate?

	Daily	More than weekly	Weekly	Monthly	2-3 monthly	Once or twice a year	Less often	Never	Adequate	Inadequate	Don't know
Geriatrician	1	2	3	4	5	6	7	8	1	2	3
G.P.	1	2	3	4	5	6	7	8	1	2	3
Health Visitor	1	2	3	4	5	6	7	8	1	2	3
District Nurse	1	2	3	4	5	6	7	8	1	2	3
Psychiatric Nurse	1	2	3	4	5	6	7	8	1	2	3
Physiotherapist	1	2	3	4	5	6	7	8	1	2	3
Social Worker	1	2	3	4	5	6	7	8	1	2	3
Occupational therapist	1	2	3	4	5	6	7	8	1	2	3
Chiropodist	1	2	3	4	5	6	7	8	1	2	3
Speech therapist	1	2	3	4	5	6	7	8	1	2	3
Optician/ Ophthalmologist	1	2	3	4	5	6	7	8	1	2	3
Dentist	1	2	3	4	5	6	7	8	1	2	3
Other (Specify)	1	2	3	4	5	6	7	8	1	2	

56. Does s/he have a pet or special interest in an animal in the home?

- Yes - caged 1
- Yes - cat/dog 2
- No 3

57. Do you have any further comments to make about this resident or his/her care that you feel we have not covered?

Form I: Residents' Physical Environment

Questions where no guidance is given below are self-explanatory.

Q1. Individual Route Diagrams

Before plotting the route, establish boundaries and normal usage (within a typical month). Plot the whole floor/area the resident normally uses including the main entrance to the home unless they never use this unaccompanied. If they normally use more than one floor, include all floors used. If the resident is female, exclude men only toilets and vice versa.

<u>Code</u>	
	Resident's bedroom
	Toilet
	Dining area
	Sitting area *if they always sit in one place
	Stairway
	Lift
L	Landmark e.g. entrance hall. Defined as an area or place which is unmistakable. Even when new to the home you are clear where you are.
	Show number of doors in corridor in circle by corridor.



Decision point - label:

- A. Two possible directions
- B. Three or more possible directions
- E. Exit from the system to the rest of the home or outside world.
Underline if normally have to open door to get out of system.
Circle if this door is normally kept locked.

Next to decision points code:

- 1. Very clear (eg picture and large name on door)
- 2. Could be confusing (eg just large name on door)
- 3. Very confusing (eg small/no name on door)

Q2. In coding the division of the bedroom, a physical barrier is one which is always present - a curtain drawn back during the day would therefore code 2 rather than 3. If there is no specific area but different items of furniture are personalised with ornaments etc, code 1. If it is unclear what belongs to whom and there is no specific area, code 0.

Q4. The definitions are largely incorporated into the question. If there are no items other than strictly functional out (eg, hairbrush and slippers) code 0.

Q8. Code 3 where a large picture that could not be missed might substitute for the door colour being different. Where an effort has been made using large names and/or pictures on otherwise identical doors, code 2. Small names by which doors can be identified only by careful looking, code 1 and numbers of blank doors, code 0.

Q9. If the immediate impact of the room by use of colour or personal belongings is different to all others, code 2. Code 1 if the room is different but does give a similar first impression to other bedrooms. Code 0 if a careful look is required to distinguish the room.

RESIDENT'S PHYSICAL ENVIRONMENT

Residents name _____ Group _____

Home _____

1. Individual Route Diagram. (Specify boundaries) _____

Number of WC's normally used _____

Number of sitting areas normally used _____

- a) Average number of doors per corridor _____
- b) Decision points A(1) _____
A(2) _____
A(3) _____
Total _____
- c) Decision points B(1) _____
B(2) _____
B(3) _____
Total _____
- d) Number of decision points residents do not normally use
- A(1) _____
A(2) _____
A(3) _____
B(1) _____
B(2) _____
B(3) _____
Total _____
- e) Number of exit points circled (locked) _____
underlined (door) _____
other _____
total _____
- f) Number of landmarks _____
- g) Total length of route (metres) _____

2.	Division of area in bedrooms		
	Single Room		4
	Distinct division (physical barrier)		3
	Moderate division (definable area)		2
	Little division (definable furniture)		1
	No division		0
3.	How big is the residents "territory" (count half the bedroom if no division)		
		<u>sq metres</u>	
4.	Personalisation of the bedroom		
	Much personalisation (most furnishing and objects belong to resident)		3
	Some personalisation (have some objects, pictures and furniture)		2
	Little personalisation (a few items but room does not seem to 'belong')		1
	No personalisation		0
5.	Is there a washbasin in the bedroom?	Yes	1
		No	0
6.	Type of flooring		
	Fully carpetted		3
	Mostly carpetted (lino edging)		2
	Little carpetting (rug on floor)		1
	No carpet or rugs		0
7.	Is there an observation window (uncurtained)?	Yes	0
		No	1
8.	Is the bedroom door clearly distinguishable from others?		
	Very distinctive (eg large name and colour)		3
	Moderately distinctive (eg large name only)		2
	Little to distinguish (eg normal size name)		1
	Identical to surrounding door)		0
9.	Is the bedroom clearly different to others on entry?		
	Completely different		2
	Could be confused but differences exist		1
	Virtually identical		0

STAGE II RESIDENT QUESTIONNAIRE

Name of resident

Name of home

Name of respondent

1. Is this resident still in the home?

- Yes 1 (go to Q4)
 - No - died 2
 - hospitalised 3
 - transferred 4
 - other 5
-

2. When did he/she die/go into hospital/transfer to another home?

Date _____

IF DEAD GO TO Q4

3. Do you expect him/her to return to this home in the foreseeable future?

- Yes 1
- No 2
- D/k 3

4. Which of the following events have occurred during the last six months?

	Month					
	1	2	3	4	5	6
Dates						
Hospitalisation (days)						
Friends left home (no)						
Enemies left home (no)						
Change of bedroom (yes = 1)						
Change of person shared with (no of changes)						
Good staff relationships left (no)						
Poor staff relationships left (no)						
Personal circumstances (death of relative) yes = 1						
Other (specify)						

For office use only

New activity started

	<u>Month</u>
1. Social
2. Therapy
3. OT
4. Physical

APPENDIX 2 THE PILOT STUDY

Introduction

The principal aim of the pilot was threefold: firstly to establish, as far as was practicable, the validity of the measures used; secondly to discover any practical problems of application; and thirdly to note any obvious omissions.

In chapter 5, various types of validity are described. At the pilot stage an effort was made to assess the construct validity of the newly proposed scales. Construct validity, if established, shows that a scale can clearly differentiate between different groups. To this purpose, two homes were selected that were identified by the social services department as different in both resident population and approach.

Home A was a specialist home for 40 elderly mentally infirm residents which was purpose built for group living. Although managed separately, a day centre for the same client group in the community formed part of the premises. A relatively high proportion of the residents were in the home on a short stay or "rotating care" basis in which a client spends a proportion of each year in residential care. The officer-in-charge had a social work background.

Home B was a 43 bedded, communally designed, home that was originally intended for the relatively able elderly resident. A few day care clients attended the home but, on the whole, there was a stable long stay population, 29% of whom were assessed by the officer-in-charge as suffering from moderate or severe confusion. The officer-in-charge had a psychiatric nursing background.

A validity check form was used to interview the manager of the two homes and the policy officer for the elderly for the county. In this Appendix these officers are referred to as the "respondents". They, and the researcher, ranked the homes on each of the dimensions covered, before the ratings based on the questionnaire

assessment were calculated. Remarks and hesitations were noted to clarify the basis for assessments as in one case the respondent was more familiar with one home than another. Moreover this facilitated the identification of any misunderstandings. Problems are obviously presented by this approach, both by the small number of respondents, and the fact that only global judgments on the homes were possible: it was not possible to identify individual residents.

A further discussion also took place with the officer-in-charge of home A who had close links with home B. This centred on the Sheltered Care Environment Scale (SCES) dimensions after these had been estimated.

A2.1 Personal Characteristics

The overall CAPE (Pattie and Gilleard, 1979) dependency groupings of the sample residents in the pilot study are shown in table A2.1.

Table A2.1 Dependency Classification of Residents in the Pilot Study

Dependency Groups		Number of Residents	
		Home A	Home B
Cognitive State	A	0	1
	B	1	3
	C	2	2
	D	2	3
	E	5	1
Behaviour	C	1	0
	D	3	2
	E	6	8

The CAPE manual (Pattie and Gilleard, 1979) gives ranges of scores to be included in each dependency grouping. The specialist home appears to maintain a higher level of behaviour for a lower level of cognitive ability.

With the help of staff, it was found that quite advanced hearing problems did not cause problems in the interview assessment of sample residents. Partial sight, however, did prove a difficulty. The CAS interview used to assess cognitive state requires the reading of a list of words and the respondent writing his or her name. The former proved particularly difficult. Although the possibility of discovering an alternative test for such residents was discussed, it was decided to exclude them from the study. It was considered that, even if such a test could be found, the impact of the environment on partially sighted and blind people is likely to be different to that on a sighted demented resident and would warrant a rather different approach from that being used.

A2.2 Staffing

In the full study, information about numbers, turnover and types of staff were used to provide a picture of the staffing situation in each home. At this stage only the measure of the level of staff functioning defined as: quality of interaction with residents, organisation and relationships among staff, was being validated. The respondents rated the staff functioning in home B more highly than in home A but the measure used in the pilot study resulted in the reverse ordering. This was because, in making their judgments, the respondents tended to concentrate on quality of interaction and amount of physical contact rather than the availability of staff to the residents. The respondents' assessments concurred with the relevant individual questions and it was considered that the overall measure was at fault. It became obvious when making the assessment that the same information was being used (in the context of a brief two day visit) to judge the organisation of the staff and availability of staff to residents. If the question relating to organisation was eliminated, the two homes ranked equally which seemed a fair assessment: good quality interaction is not effective if it is not available when needed.

An element of staff functioning not reflected in the measure, which was considered to be important, was their attitude to the privacy of residents. An item recording

attitude to privacy would not affect the ranking of the two homes, and it was decided to include this in the full study.

A2.3 The Social Environment

Questions specific to the individual sample residents' behaviour and the homes' method of dealing with such behaviour were amended. The result was questions 11, 12 and 13 in form H Appendix 1. These questions were still problematic in the full study and are discussed in Appendix 5.

A2.3.1 Measures of Regime

The dimensions of regime which were broadly assumed to reflect the "relationships" dimension in the home (see chapters 4 and 7) were: the level of integration of the more confused residents into the social life of the home and the level of privacy afforded residents. "Personal growth" included the level of stimulation received by residents, the freedom they were allowed and the extent to which background information was known/used. "System maintenance and change" were indicated by the extent of planning of care, regimentation of care and the level of control afforded the residents. The intention at the pilot stage was to see if the proposed scales distinguished between the two homes that were known a priori to have different management styles. Table A2.2 shows the rankings for each aspect of regime in the pilot homes

i) Integration

The home level scale confirmed the respondents' judgements by ranking home A higher than home B. When the question focussed on individual residents, however, the scores were reversed, primarily because of a higher incidence of friendships between sample residents and staff members. It was considered that this was an aspect of home life that managers would not necessarily identify and that the scales should be retained as they stood.

Table A2.2 Pilot Study Results of Proposed Regime Measures

Regime Dimension	Ranking using proposed Regime items	
	Home A	Home B
Integration		
Home	1	2
Residents	2	1
Privacy		
Home	2	1
Residents	2	1
Stimulation		
Home	1	2
Residents	2	1
Freedom		
Home	2	1
Residents	1	2
Background		
Home	2	1
Residents	2	1
Planned Care		
Home	1	2
Residents	2	1
Regimentation		
Home	1	2
Residents	1	2
Control		
Home	2	1
Residents	2	1

ii) Privacy

The scores were very similar on the privacy scale: home A scored 1 and home B scored 2 on the "home level" scales. The residents in home A scored 0.8 on average and in home B, 0.9 on average. This reflected the rankings by the respondents: the manager of the homes ranked the homes equally and the other respondent ranked home B higher.

iii) Stimulation

The indicators were intended to measure the overall level of activity in the home and activities directly affecting sample residents. At this stage, a very crude summation of coded scores was used to give a notion of the "rate of activity" which included contact with visitors and specific activities for individuals and social activities, day care and outings for the home. The two respondents ranked the homes the opposite ways which curiously provides some support for these measures. Overall home activity was higher in home A, and individual "rate of activity" was higher in home B. The difference may have reflected a higher level of ability in the home B residents.

iv) Freedom

In the context of comments made, it was interesting to note that home B ranked higher using the overall measure, but lower when the average of the sample residents was taken. Home B was ranked higher initially by one resident who later made the reservation that freedom expressed at Home B would not be exercised in practice. The other respondent ranked the homes equally. Restrictions in home B on individuals emerged partly as a result of clashes with alert residents.

v) Background

One respondent considered that the homes ranked equally in knowledge of the background of residents. The other respondent ranked them in the opposite way to the scored result which rated home B higher. The latter's assessment reflected the more planned approach taken to care rather than the level of continuity with the past. Home A, being specialist, tended to draw people from a much larger area, whereas home B served the locality. Although the policy in home A was to get detailed background information this often proved difficult in practice. In some cases, residents of home B were previous neighbours or otherwise known to members of staff. It was considered, therefore, that although there were reservations about the validity of the scale, it was, nevertheless, worth retaining.

vi) Planned Care

The indicator of the extent to which care was planned reflected the rankings made by one respondent. The home level scale ranked home A higher, as did the respondent with a more advisory capacity. The direct manager of the homes ranked them equally. The average of the sample residents' scores was close: 1.5 for home A and 1.9 for home B. This also reflected the researcher's impression that overall policy was thought through in home A but in both cases there was little planning for individual needs.

vii) Regimentation of Care

Both in the opinion of the residents and in the scores recorded, home A tended to have a more regimented, less individualised approach to care. This was reflected in such aspects as block toileting of all residents at a fixed time. Behind this different approach lay the different types of population to be cared for: in home B very few residents required toileting, in home A virtually all residents needed it.

viii) Control

Again, the scales appeared to perform well. One respondent ranked the homes equally and the other ranked home B higher in the amount of control residents retained over their lives. The respondent who ranked the homes equally concentrated on the example given of financial control where he considered very little leeway was possible. The question concerning financial aspects was amended subsequently with the intention that it should record what variation was possible. Home B did rank higher using both methods of scoring, again reflecting the difference in the populations concerned.

ix) Discussion

The intention of the exercise was to attain some indication of construct validity for the proposed scales. Although there was a difficulty in that one of the raters ranked the homes equally on a number of dimensions, it was considered that the results were encouraging. There appeared at this stage to be positive support for all

the scales at the home level with the exception of "background". It was considered that this reflected a difficulty in definition for the raters as much as a problem with the scale.

Although the individual resident scales did not follow the home level ratings, it had been hypothesised that this might be the case. This does mean, however, that there was less evidence of construct validity for the scales for the individual sample residents.

A2.3.2 The Sheltered Care Environment Scale (SCES)

The SCES developed by Moos has been validated by studies in the USA (see Chapter 8) and there would seem to be no a priori reason why such validation should not apply here. Split-half reliabilities (Moos and Lemke, 1984) on previous studies had indicated that a minimum of five completed scales were required to render reliable results for the staff views of a facility. In order to compensate for the lack of the residents' views of the facility, it was decided, therefore, to ask different staff to consider particular groups or types of residents in each facility. The pilot was intended to demonstrate whether the homes could be distinguished overall, using data from a small sample of the staff, or by averaging the information given by all the staff. It was also hoped to assess whether the extra information gained by examining the homes in this way contributed significantly to an understanding of the homes.

In home A, which was divided into two principal groups, the staff were divided into three and each section asked to consider either the home as a whole, group 1 or group 2. In home B, staff were asked to consider the home as a whole, the alert residents as a group, or the confused residents as a group. A minimum of 6 questionnaires were returned for each section.

To assess how well the scales reflected the homes, the respondents were asked about each of the seven dimensions for the homes as a whole. The officer-in-

charge of home A also assessed how well the results reflected the homes and the groups within the homes. It was her judgment that the assessments based on the "home as a whole" provided a more realistic basis for comparison than when the sections were added to provide an average figure for each home. This is the basis that has been used therefore in the following discussion. The detailed results can be found in table A2.3.

The respondents had difficulty in distinguishing the two homes on the dimensions of the SCES scales. The reason for this becomes clear when the data is examined more closely. The "profile" of the two homes (see chapter 8) is very similar, especially when contrasted with residential care in the USA. Where the difference between the homes is most obvious, on the organisation dimension, the respondents had no difficulty in rating home B higher. Similarly, the degree of resident influence and physical comfort were ranked by both the researcher and one respondent as they emerged from the SCES analysis. The remaining respondent ranked the homes equally on these last two items.

The dimension of self-exploration was agreed by both respondents to be approximately equal in both homes but very low. The officer-in-charge, however, stood by the high SCES rating as she considered that this aspect of care was emphasised in the local authority. It would seem unlikely that homes in the US are less geared towards self-exploration; however more data is needed before any useful investigation to the background of this result can be made.

The respondents considered that there was more cohesion and less overt conflict at home B than home A. The reverse results emerged from the SCES analysis, although the differences were not large and the standard deviations are high. However, using the data relating to the subdivision of the homes, it is possible to provide a rational explanation. The level of cohesion, when only the alert residents are considered, is as high in home B as home A and higher than the groups considered separately. Moreover, the conflict levels are lower when the alert and confused

residents are considered separately. It may be that the combination of alert and confused residents is detrimental to cohesion and increases conflict.

Table A2.3 Pilot SCES Results

Score = average percentage of possible score. Brackets below indicate standard deviation.

() Number of staff	Coh	Con	Ind	SE	Org	RI	PC
Home A							
(6)Group 1	46 (15.1)	76 (16.2)	19 (18)	60 (22.5)	39 (22.1)	62 (16.8)	57 (11.5)
(6)Group 2	44 (17.8)	85 (16.6)	16 (11.5)	71 (19.7)	52 (30.6)	54 (16.0)	63 (5.7)
(8)Whole	52 (13.2)	74 (17.6)	20 (9.4)	79 (16.0)	39 (18.6)	60 (14.4)	64 (19.8)
Home B							
(6)Whole	39 (11.8)	85 (13.3)	26 (16.9)	82 (11.4)	60 (17.6)	76 (18.8)	52 (9.4)
(7)Alert	51 (21.1)	79 (19.6)	25 (12.2)	69 (22.6)	52 (19.0)	70 (19.7)	71 (20.2)
(6)Confused	46 (20.7)	70 (18.1)	32 (7.3)	61 (23.4)	63 (13.6)	80 (25.8)	82 (9.0)
USA Studies*							
Total	72 (12.0)	57 (17.0)	58 (14.0)	61 (13.0)	66 (14.0)	60 (12.0)	76 (15.0)
Nursing Homes	69 (11.0)	64 (12.0)	53 (9.0)	63 (10.0)	60 (12.0)	60 (9.0)	67 (12.0)
Residential Care (12.0)	75 (14.0)	49 (20.0)	55 (15.0)	60 (15.0)	73 (14.0)	60 (16.0)	86

*see MEAP handbook for details

See Chapter 8 table 8.1 for definitions of sub-scales.

Coh	Cohesion	SE	Self-exploration
Con	Conflict	Ind	Independence
Org	Organisation	RI	Resident Influence

This interpretation is borne out by the slightly lower cohesion and considerably higher conflict in group 2 in home A where the short-stay and more alert residents tend to live. The officer-in-charge of home A considered that the greater availability of staff to residents in home A may be a contributory factor. At this stage with such large standard deviations and so little data, such ideas must be purely speculative.

It would appear from this that a fuller picture is obtained by dividing the staff responses into groups. Moreover, it can provide enlightening information on staff attitudes. For example, in home B, the physical surroundings are identical for all three groups. However, the physical comfort scale for the confused proved higher (82%) than the home as a whole (52%), both with relatively low standard deviations indicating a high level of agreement.

Although the extra information obtained is valuable, there is some concern regarding the reliability of the data using such small numbers for each group. It was decided therefore to minimise the divisions as far as possible by, in community homes, directing staff into those considering the "home as a whole" and "confused residents" only. In group homes, two groups plus the home as a whole should be considered. It is extremely unlikely that an appropriate sample could be obtained using one group only, as groups are usually of about 10 residents.

A2.4 The Physical Environment

The physical surroundings of the residents were assessed using: Lipman's route diagrams and "zones", an adapted version of Moos' rating scale, and an individual assessment of each sample resident's physical surroundings. As a purely descriptive device, notes were also made on architect's floor plans covering the location of sample residents' bedrooms, layout and occupancy of lounges, tea making facilities and so on. The existence of gardens or grounds and their relative security was also noted. The principal dimensions to be covered at the pilot stage were: physical attractiveness, territories, complexity and environmental diversity.

A2.4.1 Physical Attractiveness and Ambience

The overall rating, using a percentage of possible points from the MEAP amended rating scale, rated home A as more attractive than home B. This concurred with one respondent's, and the researcher's, views; the remaining respondent rated both homes equally low. The degree of variability of physical attractiveness amongst local authority old people's homes is not proposed to significantly affect the demented elderly. However, within the scale are useful elements such as the level of lighting and ambient noise which it has been suggested have an effect on people with senile dementia (see chapter 3).

It was also hoped that a contrast between the physical environment for the ten sample residents individually and the home as a whole might be drawn. The aim was to incorporate Lipman's observation that, due to their low social status, the "confused" often sat in the "worst" chairs. If this were so, and the difference was significant, then the impact of the physical surroundings would vary within, as well as between, homes. Unfortunately, this assessment did not prove practicable. The problems caused and other amendments made are covered in section A2.4.6 below.

A2.4.2 Territories

When asked which home they considered best satisfied the territorial needs of the residents, the respondents disagreed. This was primarily because one respondent used as his main criterion the ability of the residents to establish their own territories and ranked home B higher. The second considered the number of single rooms and rated home A higher.

Half the sample residents in home B shared a room compared to 30% in home A. The bedrooms were more personalised in home B and the areas in shared rooms are more clearly divided. In home A there was no tradition of having a particular chair to sit in during the day. One or two of the more alert residents preferred certain chairs because they gave a clear view of the television but if these were occupied,

this did not cause trouble. By contrast, in home B each resident had their own chair except one or two residents who wandered virtually constantly. Problems were caused if two day care residents who normally came on different days coincided and both claimed the same chair.

A2.4.3 Complexity

The respondents disagreed on which was the most confusing home to find your way around. This arose because one respondent weighted home B's unusual feature of having most of the bedrooms on a lower floor than the living area very heavily. Using Lipman's methods of estimating routes and zones, both measures found home A the more complex. Home A had 19, and home B 16 zones (bedrooms, corridors and living spaces). By weighting "A" (simple) decision points on the same resident routes as one point and "B" (involving two or more directions) decision points as two points, the individual route diagrams were scored and averaged for each home. The routes for the homes using Lipman's (c.1983) method of assessment scored .65 for home A and .56 for home B (Lipman's method is examined in detail in chapter 9). Using the individual resident routes Home A scored 14.2 on average and home B 19.5. These results confirmed the researcher's impression that the group home layout, although more confusing overall, is much simpler for residents who keep within their group area.

A2.4.4 Environmental Distinctiveness and Orientation Aids

Environmental distinctiveness is defined as the variety and stimulation provided by the physical environment. Both respondents and the researcher agreed that home A should rate more highly, although not by a great deal. In the event both homes scored 58% of the possible score on this dimension. The judgments proved difficult to make in practice and it was decided to ease this process and provide more detail. This was achieved by expanding the item which referred to the distinctiveness of the living spaces as a whole to each of the four major living spaces. It was also hoped that further information for this dimension could be

obtained from questions which referred to specific aids such as colour schemes. Neither of the two homes used such aids.

A2.4.5 Relationship with the Physical Environment

It was decided that there was a need to add to the data another indicator to provide a measure of "intermediate output" of the complexity of the environment. Staff members should be asked if the resident could find their way from the lounge, or wherever they normally sat, to the toilet, their bedroom and the dining area and from their bedroom to the toilet. The intention was that the measure should provide an indicator of the direct impact of the complexity of a resident's "route" in the home. The use of the "find" measure that was derived is discussed in chapter 9.

A2.4.6 Practical Problems and Amendments

It was hoped that it would be possible to contrast the physical attractiveness of the residents' surroundings individually with that of the home as a whole. In practice, standard fittings in bedrooms and the purpose-built nature of the homes meant that there was very little variation at all. There was a tendency when making the judgments to look for the "worse" rather than the "better" and the possibility existed that residents' rooms might be specially cleaned with the knowledge that a visitor was coming. All the bedrooms in both homes were extremely tidy.

It had been intended to assess each resident's chair but this proved virtually impossible. It was immediately apparent that in some cases chairs were allocated by staff and that the social system within the homes that might designate a chair "good" or "bad" would vary between homes. Again, due to the nature of the homes, there did not seem to be much variation between chairs in the same living areas. Living rooms themselves did vary within the homes but an effort to distinguish between these would lead to the danger of making inter-home comparisons invalid given the limited range of the scales used. It was decided therefore to weight the assessments of these areas in terms of usage by sample residents. If all the

residents used one living room, therefore, only this room would be used to make an assessment.

It is not suggested that there are no significant differences between the physical environment for the alert and demented in the same home, only that the proposed methodology was an inappropriate way of identifying them. An observational study might well yield some very useful results. Lipman (1977) used a scoring system to rate seats which, although showing the demented in inferior seating, he considered either underrated the true difference, or staff influence mitigated the effect. An observational study in a number of homes and interviewing residents would be useful in identifying whether an appropriate "points" system is desirable.

As a result of changes based on the above difficulties, the resident's physical environment form became considerably reduced. The route diagram was incorporated in the form therefore to make a single physical assessment for each resident.

On the whole, the route diagram worked very well but the "type" of exit (A or B level of complexity) proved irrelevant. All the other decision points are for places the resident is likely to want to use at some point: sitting area, dining area and so on. The importance of the exit points is not so much how easy they are to find as how easy it is to accidentally go through them and get "lost". The coding of exit points was changed, therefore, to indicate whether they were normally open, a closed or locked door.

It was noticed that, in many cases, only one sitting area and/or one or two toilets were used by any individual. In this case, a "wrong" sitting area was no more a decision point than a "wrong" bedroom. To enable this idea to be incorporated, the number and type of decisions points not normally used was also noted.

At the pilot stage, amendments to Moos' rating scale had been kept to a minimum so a tried and tested scale could be used with individual residents' physical

surroundings as a basis for comparison. However, it was considered that too many items with little or no obvious use were included and, as it was no longer intended to compare the "attractiveness" of the sample residents' surroundings with those of the home as a whole, the reasoning behind keeping the scale intact had largely gone. The section rating the overall site was therefore excluded and questions relating to cleanliness and condition of walls and floors combined. Some indicators of privacy proved irrelevant: bathroom locks are never used and the division of toilets into men's and women's is not practicable in small group areas.

A2.5 Conclusion

A number of practical difficulties were encountered in the pilot stage that resulted in a series of amendments to instrumentation. Omissions were also identified, such as an indicator of the residents' spatial orientation and staff attitude to privacy. An attempt was made to establish an element of construct validity to the devised regime scales, but as the results in chapter 7 show, too many practical difficulties emerged in the full study to make use of these results.

APPENDIX 3 DESCRIPTION OF THE HOMES

The homes have been given fictitious names.

A3.1 Pondlea

Pondlea is a specialist 30 bedded home located in a quiet road in an outer London borough but managed by an inner London local authority. The home has secure gardens so it is possible for residents who tend to wander to use them unsupervised. The two storey building was purpose-built in the 1970s for group-living: there are three groups of ten residents. It was designed for the care of demented elderly people and a central hall rather than the main entrance forms the focal point of the home for the residents. Every design ploy possible bar actually locking doors appears to have been used to discourage residents from wandering outside the home. Despite this at least one resident was very well known in the local community.

At time 1 there was almost no carpet in the home, but during the six month period of the study some carpeting was laid down. Despite this the physical surroundings remained very clearly institutional.

The home made extensive use of agency staff to make sure that the staff to resident ratio was maintained in practice. Influenza among the staff during the six month period was partly responsible for raising the use of agency staff to a total of 74 different people over the six month period. A key worker scheme was used by the home and regular reviews of residents were carried out.

The policy was to try to maintain a 24 hour Reality Orientation programme, although the officer-in-charge was clear that this was less than fully implemented. In the brief period that the home was observed this appeared to be restricted to the use of large clear signs showing the date, the season and so on (none of the residents interviewed made any attempt to use these when asked for the date). As an untrained observer the researcher noticed little evidence of 24 hour RO during

the visits. Frequent use was made of names, however, when staff were addressing residents. One rather odd conversation regarding kitchen implements, initiated by a staff member while seated in a living area, may have been an unsuccessful attempt to engage a resident on a subject with which they were familiar.

A3.2 Haddock Lodge

Haddock Lodge was a specialist home for 40 residents in an outer London Borough. The home appeared to have developed into a specialist home under the current officer-in-charge and had a number of long standing relatively able residents. It also had several mentally ill residents. Although, therefore, it was initially possible to identify ten suitable sample residents, two died before interview and only one other resident proved a suitable substitute given the criteria for selection.

The building was a converted older house with a more modern extension. The home was due to be closed during the following year and the premises adapted for more independent living units. It was situated well back from a quiet road with pleasant gardens but no enclosed area, so residents could easily wander off. The home had a pleasant homely atmosphere, despite rather high ceilings.

The officer-in-charge was responsible for much of the training in the local authority relating to residential care of demented elderly people. The home operated a key worker scheme and the staff member was held responsible for the care of the resident. While well motivated generally the staff were not happy about the closure or the way it was being administered.

A3.3 Viking Lodge

Viking Lodge is a non-specialist home for 49 residents located in an outer London Borough. Although the home was purpose-built for the care of elderly people, it was in the process of finishing a conversion, at the time of the study, to accommodate group-living. This conversion had resulted in some very cramped combined dining and living areas and overall the design of the home appeared to be rather awkward.

The home, which has two floors, is set on a corner of two quiet urban streets and has no secure area for residents to wander outside.

During the course of the six month period between times 1 and 2 the officer-in-charge left the home and was not replaced for four months. Thus although there was a key worker scheme this appeared to be operating at a nominal level at this stage of transition for the home.

A3.4 Goldacre

Goldacre is a specialist home for 32 residents in an outer London Borough. The home is located at the end of a cul-de-sac in a residential area. It was purpose-built within the previous five years for the care of demented elderly people.

The home has an enclosed secure area where residents can sit outside. There are two floors, and bedrooms, which are on both floors, have frosted glazed sections to the doors and colour coded bedspreads and furnishings. The home centres on a large area for sitting which extends into a dining area. The front door, which is kept locked, has two doors with an "airlock" in between overlooked by the office. This opens directly into the main sitting and dining area and contributes to an institutional atmosphere.

There is a key worker system operating in the home. Because of long term illness among the staff there have been considerable staffing difficulties. Only four agency staff were used over the six month period, however.

A3.5 Airedale House

Airedale House is a non-specialist home for 48 residents set in the same outer London Borough as Viking Lodge and Goldacre. It is set on the outskirts of a modern estate. There are gardens but no secure area outside for residents to wander in.

The home was purpose-built on two floors. During the six month period of the study work began to convert it for group-living. The home naturally divides into four sections as the bedrooms were all located in four corridors. The front door opened into the main seating area, which was large, with an extensive dining area and there was a marked institutional feel to the building.

There was no key worker scheme and no major changes in staffing took place during the six month period.

A3.6 The Copse

The Copse is a county council non-specialist home for 60 residents. It is set in a rural area on the edges of a town and has a day centre attached which some of the residents attend.

Of the ten residents originally selected for the sample, three had died and two had gone into hospital by time 1. It was only possible to find three appropriate other residents so eight residents were selected for the study.

The building was purpose-built between 1941 and 1960. It is run communally and has long corridors and a central dining area. This lends an institutional air to the building, especially as there was a lack of carpeting in the corridors and dining area at the time of the study. There are pleasant grounds but no secure outside area.

The (male) officer-in-charge appeared to take a more distant and administrative role in the care of the residents than was common in most other homes. Another senior member of the staff was interviewed about the sample residents although the officer-in-charge was interviewed about overall home policy. At times this provided an interesting contrast in views. There was no key worker scheme in the home and no major staffing changes took place over the period.

A3.7 Greendale

Greendale is a county council specialist home for 40 residents. It is set on the outskirts of a village on the edge of a modern estate. The pleasant garden area is not secure.

The home was purpose-built within the five years preceding the study and is designed for group-living. Although there are four bedroom sections, the eating areas are shared between two groups so the home divides in effect into two groups. These are separated by a large wide corridor into which the front door opens. Because the living and dining areas open on to this central corridor or hall there appears to be much more movement between the groups by residents than in many other of the group designed homes. Although the home did not feel as institutional as many, the large central area prevented it from having a very domestic atmosphere.

The officer-in-charge of the home was the deputy who had taken over shortly before the study had started. During the six month period the handyman, the only male member of staff, had died. This had affected the staff a great deal and it was thought possible that the residents may have been influenced. Long term illness and annual leave problems had caused staff shortages that had not been made up by agency staff, only one was employed during the period. There was no full scale key worker scheme although some staff were responsible for specific residents' clothes.

A3.8 Thayler House

Thayler House is a specialist county council home for 46 residents set in a rural area outside a small village. Although classified as specialist the home caters largely for mentally handicapped and mentally ill elderly people. This fact, combined with the death of two residents before time 1 resulted in only five sample residents being selected.

The home was purpose-built for group-living on one floor, within five years of the study. There are five groups, one of which consists entirely of people with mental handicap, which is located in a building totally separate to the main home. There are large gardens including a secure enclosed area.

In the main part of the home the front door opens on to a central hallway. The living areas of two of the groups open quite directly on to this area while the two remaining groups are separated both from these groups and each other. The bedrooms are uncharacteristically large for a new home, with several four bedded rooms. They have been designed to make future conversion into smaller rooms possible but at present seem large and institutional. This may have contributed to a hospital-like atmosphere in the home.

There is no key worker scheme in the home and a preponderance of part-time staff, 29 care assistants covered 17 whole time equivalent posts. The difficulty of getting and retaining sufficient staff was a major issue for the officer-in-charge.

A3.9 The Laurels

The Laurels is a non-specialist county council home for 40 residents set in a quiet residential area of a small town. Being non-specialist in an area with a relatively high level of specialist provision there were less people with senile dementia than might have been expected otherwise and only six residents were selected for the sample.

The home is designed for group-living and of all the purpose-built homes it has the most homelike atmosphere when first arriving. This may be due to the small hallway with older furniture and relatively low ceilings. The four groups are set well away from this hallway and each other. There are pleasant gardens but no secure outside area.

During the six month period of the study the home had lost some good staff who were difficult to replace. At time 2 it was noted that a key worker scheme that had lapsed was to be reintroduced.

A3.10 Chaucer Place

Chaucer Place is a specialist county home for 40 residents. It is set in a modern estate on the outskirts of a small town. The single storey home was purpose-built for group-living within five years of the study.

Unlike most homes the office does not overlook the front door and hall. The hall is not large and leads to the four groups which are again well separated from each other. There is a homelike atmosphere to the building. There are pleasant gardens but the enclosed area outside is not secure.

The officer-in-charge did not participate in the study but delegated the task to a senior member of staff who was particularly interested. At the time of the study the home operated a very active key worker scheme and employed some reality orientation techniques. There was a high emphasis on training and involvement of staff.

A3.11 Westgate

Westgate is a non-specialist county home for 40 residents set in a residential area of a large town. When selecting the sample the criteria for inclusion together with the availability of specialist beds in the area resulted in only five residents being included in the study.

The home had been converted from a post-war large dwelling and had an extension added to provide a dining area. There is a secure outside garden area but the home is very unsuitable for physically frail people: for example on the first floor there are odd steps from one corridor to another. The bedrooms often have three or four

beds and are very cramped. However Westgate as a whole has a very homelike atmosphere.

There is no formal key worker scheme although some staff are responsible for some residents' clothes. The staff are very involved in the life of the home however. There is a very active social life which involves staff, residents, relatives and visitors to the home.

A3.12 Victoria House

Victoria House is a non-specialist county home for 40 residents located on the outskirts of a small town. As in Westgate and the Laurels, the nature of the resident population resulted in only seven residents being selected for the sample.

The home was purpose-built during the 1970s and has two storeys dominated by long corridors. There are gardens but no secure area suitable for confused residents who are liable to wander. The front door opens into a small lobby area which is separate from the main body of the home although an office nearby had been converted into a library for residents. The senior staff gave the impression of struggling against the design of the building which was very institutional in nature.

At time 1 of the study there was a certain amount of conflict amongst staff as a relatively new officer-in-charge tried to implement change in the presence of a senior member of staff on the point of retirement. This affected the study in that the returns of the staff questionnaires were much lower than had been hoped for. By time 2 the member of staff had retired and it was felt that the policies were beginning to take effect and that there was an increase in activity and life in the home. Resident meetings and a key worker scheme were being introduced.

A3.13 Centrelea

Centrelea is a non-specialist county home for 43 residents set in a small village.

The nature of the study and policies of the home were such that only four residents were selected for inclusion in the sample.

The home was purpose-built during the 1960s and has pleasant gardens but no secure outside area. The building has three storeys which are dominated by long corridors. Although there is a sitting area on each floor the bulk of the seating is in a series of sitting rooms downstairs. The dining area is at the furthest part of the home. This has been partly responsible for the dominance of wheelchairs in the home. One area is put aside for storing these for staff to get residents to the dining area. The researcher gained a sense that the design of the home was working against good practice.

The officer-in-charge was very involved in the day-to-day care of the residents, to the point of cutting a residents toenails during the researcher's visit. There was no key worker scheme. The home had strong links with the local community. It formed part of the social life of older people living nearby, with afternoon teas and raffles which involved both residents and local people. Part of the home was also converted into a day centre.

APPENDIX 4 DEPENDENCY GROUPS

Introduction

The methods of deriving the dependency groupings used in chapter 6 are briefly described. The CAPE dependency group descriptions can be found in the manual (Pattie and Gilleard, 1979).

A4.1 Booths Self-Care Scale (Booth, 1985)

Residents were classified as severely dependent if they were chairbound and unable to get up without help, or bedfast, or unable to do three of the following without help: wash, dress, feed, bath or use the toilet. Residents were classified as independent if they were ambulant without help from anyone and capable of dressing, feeding, washing and using the toilet unaided. Otherwise residents were classified as moderately dependent.

A4.2 Booths Continence Scale (Booth, 1985)

There was only one question for all residents referring to faecal and urinary continence, question 12 in form A. The four categories were reduced to three categories equivalent to the Booth scale by combining categories 3 (incontinent of urine only) and 4 (incontinent of faeces only) into one "incontinent" category. Otherwise the classifications were virtually identical.

A4.3 DHSS 3 Category Dependency Classification

Residents were classified as substantially dependent if they had one or more of the following characteristics: double incontinence, were mainly or entirely bedfast, unable to feed self or severely confused. They were categorised as minimally dependent if they were continent, mobile without assistance, able to feed themselves and mentally alert. Otherwise they were categorised as moderately dependent.

A4.4 DHSS 4 Category Dependency Classification

This classification is defined in Davies and Knapp, 1978). Residents were classified as heavily dependent if they were substantially dependent according to the DHSS 3 category definition or needed help with mobility and had four of the following characteristics:

- i) Needs help with washing
- ii) Needs help with bathing
- iii) Needs help with dressing
- iv) Needs help with the toilet
- v) Is singly incontinent of urine
- vi) Is moderately confused

Residents were also classified as heavily dependent if they had six or more of the above list of characteristics, i to vi, to which was added:

- vii) Is ambulant with aids or apart from stairs

Residents who were not classified as heavily dependent and needed help to get around and had up to three of the characteristics, i to vi, listed above were classified as appreciably dependent. They were also classified as appreciably dependent if they had four or five of these characteristics, including vii.

If residents were not classified as appreciably dependent they were classified as of limited dependency if they needed help with mobility. If they did not need help but had two or three of the above characteristics, i to vii, they were also classified as of limited dependency. For this study the characteristic of moderate confusion also included mild confusion for this category of limited dependency.

Independent people who did not fall into the above categories were classified as having minimal dependency.

APPENDIX 5 MEASURES OF REGIME

Introduction

The appendix first identifies specific questions which had been hypothesised to reflect aspects of regime but for a variety of reasons proved unworkable in practice. The tables at the end of the appendix give frequencies of items and regime scores insofar as these could be scored.

During the course of interviewing senior staff members about individual residents it became clear that there were a number of difficulties with aspects of the questionnaire. These focussed on problems of definition to a large extent. These had either not been picked up at the pilot stage or amendments made in the light of the pilot results had not succeeded in their objectives. The brackets identify the questionnaire and question under discussion (see Appendix 1 for questionnaires).

A5.1 Financial Control (Form C Q37, Form H Q32)

At the pilot stage difficulties with the item had been identified because of the limited control that appeared to be possible for even the most alert of residents. It was decided therefore to concentrate on the use of money: did residents have their full allowance, or some pocket money, or none at all? However, this again did not appear to work in practice. It was unclear from responses whether residents genuinely could spend money as they wished or whether they were simply given some money to hold. The responses seemed to reflect how the respondents themselves felt about money and its role in a residential care setting rather than practice for that particular resident.

A5.2 Personal Histories and Previous Occupation (Form C Q13, Form H Q7 and Q8)

Difficulties with the area of personal histories had been identified at the pilot stage. It depended on the respondents' own requirements for background information whether they considered the information that the home had was adequate, whatever it's extent. Some respondents felt that the personal background required for the

forms on entry to residential care was all that was necessary. Even using this for a guideline, the amount of information varied depending on the local authority.

It was hoped to counter this difficulty by asking for details of each residents' previous occupation. In establishing this specific item it was hoped to get a more reliable indicator of whether information about the residents background was to hand. It became clear, however, that this item did not reflect the level of information available to, or used by, the care staff. The item was a better indicator of the effectiveness of the methods of information retrieval used by the office staff, than the availability of background information to care staff.

A5.3 Choice of decoration (Form H Q31)

The problem that arose in asking whether residents chose the decor or their room was related to the infrequency of the event. Some homes were so new this had not yet occurred for any resident. Even in the older homes, it was not very frequently that a resident was in a room that needed decorating, and thus in the position to exercise choice. In order to circumvent the difficulty the prompt was used "If their room needed decorating would you let them choose?" In retrospect this did not seem appropriate as the replies reflected assessment of abilities and wishful thinking, rather than care practice. One of the two homes that had a policy of not allowing residents to choose the decor of their rooms did this because the rooms were colour coded as an assistance to residents orientation. The other four homes that had not allowed choice reported that they would do when the opportunity arose.

A5.4 Adjustment to the home (Form H Q4)

Because of the way that the question was phrased some respondents classified residents who had not adjusted to residential care as well adjusted because they were "as well adjusted as they were ever likely to be". In other cases where respondents hesitated over a response and were prompted it became clear that "never likely to adjust" was used as the appropriate code. In retrospect it was clear that the item had been coded inconsistently.

A5.4 Residents living locally before admission (Form C Q2, Form H Q5)

The problem that arose with this question was the definition of "locally". The intention was to establish whether a resident knew the area in which they were now living. Given the tendency of residential homes to appear on new estates with which the residents were not familiar, even if they had lived on the other side of the village all their lives, it became clear that the responses would not reflect the residents experience. Moreover definitions of locally varied between staff based in London boroughs and those in rural areas.

A5.6 Response to Resident behaviour (Form H Q14)

The intention of this question was to establish whether there was any attempt at a coherent policy of positive reinforcement by encouraging appropriate behaviour. It swiftly became evident that in the vast majority of the homes there was not. The question tended to confuse respondents until the prompts revealed the sort of response that was being sought - whereupon, of course, many respondents gave it!

A5.7 Behaviour management (Form H Q12 and Q13)

These questions had been designed and adapted after the pilot stage with the hope that they would pick up on the response of the staff to specific behaviours exhibited by the sample residents. It had been the intention to draw upon these questions to add to or amend the initial scales in terms of the individual care management.

In practice they did not work, as the responses often depended on the circumstances, or there was a variety of response and coding became impossible. The intention had been to rank the responses given to indicate quality of care. What appeared to emerge was that higher quality of care was reflected in a greater variety of response. In homes which appeared to be providing high quality care different care practice used with residents with similar behavioural difficulties reflected an understanding of individual needs.

A more appropriate way to approach this particular problem would be on the basis of open ended questions that could be coded later, with a simultaneous observational study to see to what extent these intended policies, where they existed, were actually carried through in practice.

Table A5.1 Questions included in Regime Scales - Frequency of positive response

<u>Home Level</u>	<u>Yes</u> (No.)	<u>Resident Level</u>	<u>Yes</u> (%)
Integration:			
Most residents well-adjusted?	9	Well adjusted to the home?*	84
Do staff eat with residents?	1	Has special staff friendship?	27
Confused eat with alert?	6	Has friend among residents?	36
Alert accept confused?	5	Joins in communal activities?	76
Confused share all lounges?	10		
Privacy:			
Can residents lock bedrooms?	1	Can lock bedroom?	10
Have lockable drawer/etc.	3	Has lockable drawer, etc.	19
Private room for visitors?	6	Has single bedroom?	61
Freedom:			
Free use of own bedrooms?	12	Allowed free use of bedroom?	95
Free use of communal areas?	12	Allowed in all communal areas?	97
Free use of grounds?	13	Allowed free use of grounds?	27
Allowed out of home?	8	Allowed out of home?	6
Front door kept unlocked?	11		
Background:			
Most residents lived locally?*	8	Lived locally?*	45
Do most residents retain GP?	5	Retained own GP?	25
Personal histories taken?*	12	Previous occupation known?	73
Bring in furniture?	8	Regular (monthly) visitors?	64
		Goes out with rels/friends?	11
		Holidays with rels/friends?	3
Planned Care:			
Pre-admission visit usual?	11	Visited home pre-admission?	69
Care plan/policy usual?	3	Has care plan/policy?	54
Personal histories taken?*	12	Have useful personal history? *	50
Regular case conferences?	7	Planned response to behaviour?*	70
Regimentation:			
Set bedtimes?	1	Goes to bed at time set by staff?	31
Set getting up time?	10	Gets up at time set by staff?	100
Bathtimes set by staff?	10	Is bathed at time set by staff?	100
Routine toileting?	8	No choice which staff bathes?	100
Set breakfast time?	6		
Control:			
Choice: colour scheme?*	7	Allowed to choose colour scheme?*	68
Control of finances?*	6	Control of personal finances?*	45
Choice of daily clothing?	12	Choice of daily clothing?	64
Choice of new clothes?	13	Choice of new clothes?	71
Residents' telephone?	11		
Alcohol sold in home?	5		
Choice of menu?	2		
Residents' committee?	1		

* Reliability of item questionable

Table A5.2 Home Level Activities

	DAILY	MORE THAN WEEKLY	WEEKLY	MONTHLY	2-3 MONTHLY	1-2 PER YEAR	LESS OFTEN	NEVER
Live entertainment by outside groups				4	5	3	1	
Live entertainment by staff		2	3	1	4	3		
Day or evening outing for groups			2	4	5	2		
Group therapy	1	1	4					7
Dancing/Music and movement			4		2	1		6
Other physical exercise		1	4					8
Other clubs, groups		2	4	1				6
Other activities		1	1	1				10

Table A5.3: Resident participation in activities.

	DAILY	MORE THAN WEEKLY	WEEKLY	MONTHLY	2-3 MONTHLY	1-2 PER YEAR	LESS OFTEN	NEVER
Day outings?		1	4	6	8	10	1	74
Home outings?				11	18	49	3	23
Attend outside clubs?		3		2		1		98
Go to church service?			3	6	2	1		92
Attend service in home?			16	23	6			59
Attend group therapy?	10	5	4	3				82
Attend home clubs?		2	9	6	1			86
Garden			1				1	102
Sew/knit	6	1	2	5	3	1		86
Craftwork			1	1	1	1		94
Tend house plants			3	1		1		99
Jigsaws/puzzles		1	1	2	1	1		98
Play cards/dominoes		1	12	4			1	86
Read	29	4	6	2				63
Watch TV	63	7	7	3				24
Ballroom dancing	1	1	15	9	6	1		71
PE		7	16	8			1	72
Hairdresser			25	54	14	1		10
Other	1	3	19	1				79

Table A5.4 Regime Scale Scores

	Mean Score	
	Homes	Residents
Integration	3.1	2.2
Privacy	0.8	0.8
Stimulation	14.6	15.2
Freedom	4.3	2.3
Background	2.5	2.2
Planned Care	2.7	1.7
Regimentation	2.6	0.3
Control	4.4	2.5

APPENDIX 6 SHELTERED CARE ENVIRONMENT SCALE (SCES)

Table A6.1 shows the number of completed SCES forms for each group in each home. Table A6.2 contrasts the partial correlations of the sub-scales obtained from the "whole home" assessments in the study with the partial correlations for facilities in the USA. Table A6.3 shows the results of cluster analysis of the homes using the SCES scales and using the "quick cluster" command in SPSS-X.

Table A6.1 Number of SCES Questionnaires completed

Home	Type of Assessment	Number of respondents
Pondlea	Whole home	7
	Group A	4
	Group B	6
Haddock Lodge	Whole home	14
Viking Lodge	Whole home	9
	Group A	6
	Group B	6
Goldacre	Whole home	12
Airedale House	Whole home	10
	Demented residents	8
The Copse	Whole home	8
	Demented residents	12
Greendale	Whole home	10
	Group A	9
	Group B	9
Thayler House	Whole home	5
	Group A	13
The Laurels	Whole home	5
	Group A	8
	Group B	7
Chaucer Place	Whole home	7
	Group A	7
	Group B	6
	Group C	7
Westgate	Whole home	20
Victoria House	Whole home	4
	Demented residents	6
Centrelea	Whole home	10
	Demented residents	9
Total no. of staff		244

Table A6.2: SCES Subscale Partial Correlations for US Establishments and Study Homes

	Cohesion	Conflict	Independence	Self-Expl.	Organisation	Res. Infl.	Phys. Conf.
Coh	-	-.15	.63	.60	.61	.49	.06
Conf	-.28	-	-.02	.05	-.40	.09	.16
Ind	.50	-.21	-	.54	.35	.54	.04
SE	.13	.35	.10	-	.36	.52	.14
Org	.59	-.45	.35	-.03	-	.17	-.08
RI	.11	.07	.17	.18	.05	-	.10
PC	.52	-.46	.33	-.04	.57	.01	-

Correlations above the diagonal are for study facilities (number of staff=118), those below the diagonal are for facilities in the USA (number of staff = 826). The normative data has been adjusted for type of facility (Moos and Lemke, 1984).

Table A6.3 Cluster Analysis of Homes

Clusters resulting from a non-hierarchical method using the values of the SCES sub-scales to obtain a pre-selected number of cluster centres.

	<u>Rankings of scores on SCES sub-scales</u>					
	Coh	Con	Org	SE	Ind	RI
<u>Group 1</u>						
Pondlea						
Haddock Lodge						
Chaucer Place	1	1	1	1	1	1
Westgate						
<u>Group 2</u>						
Viking Lodge						
Goldacre						
Airedale House	2	2	2	2	2	2
The Copse						
Greendale						
Thayler House						
The Laurels						
Victoria House						
Centrelea						
<u>Group 1</u>						
Pondlea						
Haddock Lodge						
Chaucer Place	1	2	1	1	1	1
Westgate						
<u>Group 2</u>						
Goldacre						
Airedale House	2	3	2	2	2	3
The Copse						
Greendale						
Thayler House						
The Laurels						
Victoria House						
Centrelea						
<u>Group 3</u>						
Viking Lodge	3	1	3	2	3	2

Table A6.3 Quick Cluster Analysis of Homes Continued:

	<u>Rankings of scores on SCES sub-scales</u>					
	Coh	Con	Org	SE	Ind	RI
<u>Group 1</u>						
Pondlea						
Haddock Lodge						
Westgate	1	3	1	1	1	1
<u>Group 2</u>						
Goldacre						
Airedale House	3	4	3	3	3	4
Greendale						
Thayler House						
Victoria House						
<u>Group 3</u>						
Viking Lodge	4	1	4	3	4	3
<u>Group 4</u>						
Centrelea						
The Copse	2	2	2	2	2	2
The Laurels						
Chaucer Place						
<u>Group 1</u>						
Pondlea						
Haddock Lodge						
Westgate	1	3	1	1	1	1
<u>Group 2</u>						
Goldacre						
Airedale House	4	5	4	3	3	4
Greendale						
Victoria House						
<u>Group 3</u>						
Viking Lodge	5	1	5	4	4	3
<u>Group 4</u>						
Centrelea						
The Copse	3	2	3	2	2	2
The Laurels						
Chaucer Place						
<u>Group 5</u>						
Thayler House	2	4	2	5	5	5

Table A6.3 Quick Cluster Analysis of Homes Continued:

	<u>Rankings of scores on SCES sub-scales</u>					
	Coh	Con	Org	SE	Ind	RI
<u>Group 1</u>						
Pondlea						
Haddock Lodge						
Westgate	1	3	1	1	1	1
<u>Group 2</u>						
Goldacre						
Airedale House	5	6	5	4	5	6
<u>Group 3</u>						
Viking Lodge	6	2	6	5	4	3
<u>Group 4</u>						
Centrelea						
The Copse	4	4	3	3	3	4
The Laurels						
Greendale						
Victoria House						
<u>Group 5</u>						
Thayler House	3	4	2	6	6	5
<u>Group 6</u>						
Chaucer Place	2	1	4	2	2	1

See table 8.1 for definitions of sub-scales.

Coh	Cohesion	SE	Self exploration
Con	Conflict	Ind	Independence
Org	Organisation	RI	Resident Influence

These results with very minor differences were repeated when Ward's method was used or city block used as a measure of distance.

APPENDIX 7 COMPLEXITY ANALYSIS VARIABLES

Table A7.1 below describes the variables used in the analysis of the effect of the complexity of design of homes on residents' ability to find their way around.

Table A7.1 Variables in Analysis of Effect of Complexity of Design

(n=104 unless otherwise specified)

Name	Range	Description	Mean	SD
FIND	0-8	0= can't find way around home	4.97	3.01
OR1	0-9	0= low orientation	2.14	2.11
MAB	0-11	0= low mental ability	4.52	3.92
PD	1-12	1= physically able	7.33	2.41
PDRUG	0-6	number of types of psycho drug	0.75	1.01
A	3,23	no. of simple decisions on route	11.80	5.98
B	0,3	no. of elaborate decisions on route	0.67	1.01
EXIT	2 17	no. of points on route which could take them out of their usual territory	6.74	3.41
DOOR	3,30	av. no. doors per corridor on route	10.92	4.51
LENG	7,180	the total length of the route (metres)	72.24	45.90
LIGHT	3-9	3= dark	6.23	1.79
ZONE	11,24	no. of different zones in the home	17.37	3.50
STOREY	1,3	no. of different storeys	1.74	0.46
GROUP	0,1	1= home designed for group living	0.49	0.50
BED	0,1	1= distinctive bedroom on entry	0.27	0.45
BDOOR	0,1	1= clearly labelled bedroom door	0.24	0.43
LOUNGE	0,1	1= labelled/colour coded lounge	0.10	0.30
WC	0,1	1= labelled/colour coded WC door	0.40	0.49

It had been hoped to rate the decision points on a simple three point scale. This was intended to pick up how confusing each point appeared to be. However, during the course of the analysis, it was found that the writer's assessment of the "confusingness" of the decision points was not reflected in the resident's ability to find their way around and therefore was excluded as too highly correlated with the number of decision points. Similarly the number of landmarks appeared to reflect the route length rather than the presence of navigational aids.

A stepwise analysis using the variables in table A7.1 for all residents resulted in the equation shown in table A7.2.

Table A7.2 Analysis of Complexity of Design - All Homes

Variable	Coefficient	t value
Orientation	0.4	2.0 **
Mental Ability	0.1	2.0 **
Physical disability	-0.6	-6.1 ***
Zones	0.3	3.9 ***
B decisions	0.7	2.9 ***
Light	0.4	2.5 **
Exits	-0.2	-2.6 **
Constant	1.6	0.5 n/s

Dependent variable = Find

$R^2 = .51$

Adjusted $R^2 = .46$

$n = 103$

ns $p > .10$

* $p < .10$

** $p < .05$

*** $p < .01$

Out of interest it was decided to check whether the inclusion of the psychomotor test score would affect the resulting analysis. The variables included in the analysis of all residents remained the same although the mental ability score was replaced by the psychomotor test score. For residents in communal homes psychomotor score was not included and the equation that resulted was the same as that reported in chapter 9.

For residents in group homes mental ability was again excluded, together with the number of doors per corridor. If the number of doors per corridor is forced back into the equation the resulting t statistic is 1.4 ($p=.17$). The overall explanatory power of the equation was the same. Some doubt has been cast upon the usefulness of the psychomotor test (Hamilton, 1982) and it was decided to use the model which incorporated mental ability.

APPENDIX 8 ANALYSIS OF MODEL

Tables A8.1 to A8.6 describe the variables used in the analysis and their distributions. Table A8.7 shows the results of the Goldfeld-Quandt test and the subsequent printouts and diagrams describe analysis of the residuals.

Table A8.1 Descriptions and Source of Data

All instrumentation can be found in Appendix 1.

Name	Description	Q'aire	Q
Outcome			
CHAP	Change in level of Apathy	G	7-11
CHSD	Change in level of social disturbance	G	14-18
CHOR	Change in level of orientation	F	I/O scores
CHAS	Change in level of Agitation-smile index	G	19-20
Personal Characteristics			
AP	Level of Apathy, time 1	G	7-11
SD	Level of Social Disturbance, time 1	G	14-18
OR1	Level of Orientation, time 1	F	I/O scores
AS	Agitation -smile index, time 1	G	19-20
MAB	Level of Mental ability, time 1	F	MAB score
CHMAB	Change in level of mental ability	F	MAB scores
PD	Physical disability, time 1	G	1-6
CD	Communication difficulties, time 1	G	12-13
DEP	Depression, time 1	G	B2-3
CHDEP	Change in depression	G	B2-3
DEAF	Hearing difficulties	G	Hearing
LSTAY	Length of stay	A	10(5)
AGE	Age	A	10(2)
SEX	Sex	A	10(3)
Individual Environment			
FIND	Ability to find way around the home	H	9
PDRUG	Number of Psychotropic drugs	G	23
ACTIVE	Rate of engagement in activities	H	48,50,52,53
VISITORS	Frequency of visitors	H	47
FRIENDS	Friends in the home (staff/resident)	H	37,41
SETBEDTM	Bedtime set by staff	H	15
CAREPLAN	Formal care plan/policy for resident	H	8
OUTSIDE	Resident has access to grounds	H	19
SINGLE	Single room	H	25
LOCKER	Private place can lock small items	H	30
CLOTHES	Chooses what to wear each day	H	33
CHBED	Change of bedroom in six month period	J	4
PERSONAL	Personalisation of bedroom	I	4
RMAREA+	Square metres of bedroom space	I	3

Group Level Environment (All SCES sub-scales)

COH	Cohesion	D	*
CON	Conflict	D	*
IND	Independence	D	*
SE	Self Exploration	D	*
ORG	Organisation	D	*
RI	Resident Influence	D	*
PC	Physical Comfort	D	*

Home Level Environment

SPECIAL+	Specialist or integrated home	A	6
DAY	Day Care clients in the home	C	74
PSSTAY	Percentage of short stay residents	A	10(6)
PCONF	Percentage of residents moderately or severely confused	A	10(14)
TURNOVER	Resident turnover	E	5
COMACT	Rate of home organised activities	C	42
RESREG	Restrictive regime		See Chapter 6
POSREG	Positive regime		See Chapter 6
HCHAIR	Over 75% of residents have "own chair" in communal space	C	37
LIGHT+	Lighting level in the home	B	13
QUIET	Level of noise in the home (high score=quiet)	B	11
STAFF+	Level of staff functioning	B	1-5
TSLEFT	Staff turnover	E	5
SICKRATE	Average days sick per staff member	E	5
CSRATIO	Care staff-resident ratio	A	3,9
SWQ	Percentage of staff with social work qualification	D	8
NQ	Percentage of staff with nursing qualification	D	8
INSERV	Percentage of staff with in service training	D	8
ANYQ+	Percentage of staff with any qualification	D	8

Notes on Variables for table A8.1

* The derivation of SCES scores can be found in the MEAP Supplementary Manual (Moos and Lemke, 1984)

+ Variables excluded from re-run of analysis on the basis of evidence of high correlations with other independent variables.

ACTIVE, COMACT and VISITORS were computed as monthly frequencies by recoding the questions:

Daily=30, >weekly=10, weekly=4, monthly=1, 2-3 monthly=.5, >yearly=.1, less often=.01, never=0.

DEP was estimated by summing the codes of the two questions which relate to depression and anxiety. This indicator is not well validated although it has been used in previous work (Davies and Challis, 1986).

Table A8.2 Description of Variable Values and Distributions

(n=104 unless otherwise specified)

Name	Range	Description	Mean	SD
Personal Characteristics				
AP	0-10	0= low apathy	7.09	1.91
SD	0-9	0= low social disturbance	3.33	2.25
OR1	0-9	0= low orientation	2.14	2.11
AS	0-4	0= low agitation	1.78	0.99
MAB	0-11	0= low mental ability	4.52	3.92
CHMAB	-8-7	-8= decline in mental ability	-0.30	2.50(n=78)
PD	1-12	1= physically able	7.33	2.41
CD	0-4	0= no communication difficulties	1.00	1.10
DEP	2-8	2= not depressed	4.14	1.58
CHDEP	-1-1	-1= decrease in depression	0.03	0.32(n=79)
DEAF	0,1	0= can hear with or without aid	0.11	0.31
LSTAY	0.5-10	years in residential care	3.19	2.15
AGE	68-97	years old	83.04	5.90
SEX	1,2	1= male 2=female	1.88	0.33
Individual Environment				
FIND	0-8	0= can't find way around home	4.97	3.01
PDRUG	0-6	number of types of psycho drug	0.75	1.01
ACTIVE	0-55	monthly level of activity	14.59	15.45
VISITORS	0-30	number of visits per month	3.49	5.60
FRIENDS	0,1	1= has friend (staff or resident)	0.52	0.50
SETBEDTM	0,1	1= bedtime is set by staff	0.31	0.47
CAREPLAN	0,1	1= care plan/policy exists	0.54	0.50
OUTSIDE	0,1	1= allowed in grounds	0.41	0.50
SINGLE	0,1	1= single bedroom	0.60	0.49
LOCKER	0,1	1= has lockable drawer/cupboard	0.18	0.39
CLOTHES	0,1	1= chooses daily clothes	0.64	0.48
CHBED	0,1	1= has changed bedroom during study	0.08	0.27(n=79)
PERSONAL	0,1	1= bedroom personalised	0.38	0.49
RMAREA	2,11	Square metres	8.95	2.13
Home Level Environment				
SPECIAL	0,1	1= specialist home	0.52	0.50
DAY	0,1	1= day care clients in home	0.60	0.49
PSSTAY	0-7.7	% residents short stay	3.50	2.75
PCONF	5.1-100	% residents confused	40.74	33.90
TURNOVER	0.4-1.4	turnover of residents (1=100%)	0.91	0.24
COMACT	0.7-48	monthly activities organised	15.24	12.78
RESREG	0,1	1= restrictive regime	0.24	0.43
POSREG	0,1	1= positive regime	0.33	0.47
HCHAIR	0,1	1= >75% residents use one chair	0.57	0.50
LIGHT	3-9	3= dark	6.23	1.79
QUIET	6-10	6= noisy	7.80	1.19
STAFF	2-12	2= poor staff functioning	8.57	2.97
TSLEFT	0-0.2	prop'n of staff left during study	0.06	0.06
SICKRATE	0.6-5.3	average sick days per care staff	2.41	1.34
CSRATIO	0.2-0.4	care staff per resident	0.32	0.05
SWQ	0-20	% staff with SW qualification	5.79	6.19
NQ	0-30	% staff with SEN/SRN	12.73	7.63
INSERV	5.6-57.1	% staff with in service training	25.51	14.45
ANYQ	7.1-78.6	% staff with any training	36.91	19.19

Table A8.3 Frequency distribution of change in social disturbance

Value	No	%
-6.00	1	1.3
-4.00	2	2.5
-3.00	6	7.6
-2.00	9	11.4
-1.00	12	15.2
.00	19	24.1
1.00	14	17.7
2.00	11	13.9
3.00	2	2.5
4.00	1	1.3
5.00	2	2.5
TOTAL	79	100.0

Table A8.4 Frequency distribution of change in apathy

Value	No	%
-4.00	1	1.3
-3.00	4	5.1
-2.00	4	5.1
-1.00	14	17.7
.00	22	27.8
1.00	15	19.0
2.00	13	16.5
3.00	4	5.1
4.00	2	2.5
TOTAL	79	100.0

Table A8.5 Frequency distribution of change in orientation

Value	No	%
-4.00	1	1.3
-3.00	1	1.3
-2.00	8	10.3
-1.00	15	19.2
.00	31	39.7
1.00	14	17.9
2.00	6	7.7
3.00	1	1.3
5.00	1	1.3
TOTAL	78	100.0

Table A8.6 Frequency distribution of change in Agitation-Smiling index

Value	No	%
-2.00	5	6.3
-1.00	21	26.6
.00	27	34.2
1.00	19	24.1
2.00	7	8.9
TOTAL	79	100.0

Goldfeldt-Quandt Test

The Goldfeld-Quandt test is used to test heteroskedasticity, that is whether the variance in the residuals increases or decreases with the value of the observed dependent variable. The ratio of sum of squared residuals for the divided sample (taking the first and last third of the observations) has an F distribution with n_1-k and n_2-k degrees of freedom. Two separate regression analyses were used to establish the value of the sum of squared residuals for each set of observations. The test was carried out for CHSD and CHAS. The method of defining the break in the sample was to include only those observations which had values greater than or less than zero. This excluded approximately a third of the observations for the two analyses tested and resulted in very similar sample sizes. This did not apply to the

CHAP and CHOR analyses, for which two clearly defined samples of equal size could not be established. In such situations the test is not valid (the more observations there are in a sample the more variation is possible).

Table A8.7 Goldfeldt-Quandt Test Results

Dependent variable	n ₁	n ₂	K	GQ F Stat
Change in social disturbance	28	29	9	1.16 n/s
Change in agitation-smiling index	25	24	7	1.38 n/s

n = number of residents

ns p > .10
 * p < .10
 ** p < .05
 *** p < .01

Table A8.7 gives the results of the analysis for the other three equations. The null hypothesis was that the variance of the error term for the two sets of observations were equal (homoskedasticity). The test results indicate that the null hypothesis should not be rejected ($p > .1$) for both equations.

Table A8.8 Analysis of Variance of Residuals of Change in Social Disturbance

Condition	n	Mean Residual	F Stat	p
Specialist home	45	0.18	1.00	.33
Non Specialist home	34	-0.13		
Restrictive regime	20	0.18	0.24	.62
Non restrictive regime	59	<0		
Group living	39	-0.05	0.37	.54
Communal	40	0.14		
High staff functioning*	43	0.07	0.03	.86
Low staff functioning	36	0.01		

n = number of residents

* Defined as a score >9 on staff functioning assessment

Table A8.9 Analysis of Variance of Residuals of Change in Apathy

Condition	n	Mean Residual	F Stat	p
Specialist home	45	0.03	0.05	.83
Non Specialist home	34	-0.03		
Restrictive regime	20	0.02	>0	.95
Non restrictive regime	59	<0		
Group living	39	-0.06	0.20	.66
Communal	40	0.06		
High staff functioning*	43	-0.08	0.42	.52
Low staff functioning	36	0.10		

n = number of residents

* Defined as a score >9 on staff functioning assessment

Table A8.10 Analysis of Variance of Residuals of Change in Orientation

Condition	n	Mean Residual	F Stat	p
Specialist home	44	0.04	0.19	.67
Non Specialist home	34	-0.06		
Restrictive regime	20	-0.10	0.25	.62
Non restrictive regime	58	0.03		
Group living	38	0.07	0.38	.54
Communal	40	-0.07		
High staff functioning*	42	-0.04	0.14	.71
Low staff functioning	36	0.05		

n = number of residents

* Defined as a score >9 on staff functioning assessment

Table A8.11 Analysis of Variance of Residuals of Change in Agitation-Smiling index

Condition	n	Mean Residual	F Stat	p
Specialist home	45	>0	0.03	.87
Non Specialist home	34	0.03		
Restrictive regime	20	0.04	0.03	.86
Non restrictive regime	59	0.01		
Group living	39	-0.12	2.4	.12
Communal	40	0.14		
High staff functioning*	43	-0.02	0.17	.68
Low staff functioning	36	0.05		

n = number of residents

* Defined as a score >9 on staff functioning assessment

Change in Socially Disturbed Behaviour: Distribution of Residuals.

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
09:25:49 PSSRU (UNIV. KENT)

VMS V5.0

*** MULTIPLE REGRESSION ***

Equation Number 1 Dependent Variable.. CMSD

Residuals Statistics:

	Min	Max	Mean	Std Dev	N
*PRED	-3.5642	3.7545	-.1184	1.4802	79
*RESID	-2.7545	3.8394	-.0425	1.3819	79
*ZPRED	-2.3343	2.6009	-.0107	.9981	79
*ZRESID	-1.9346	2.6967	-.0298	.9706	79

Total Cases = 104

Durbin-Watson Test = 2.27802

Outliers - Standardized Residual

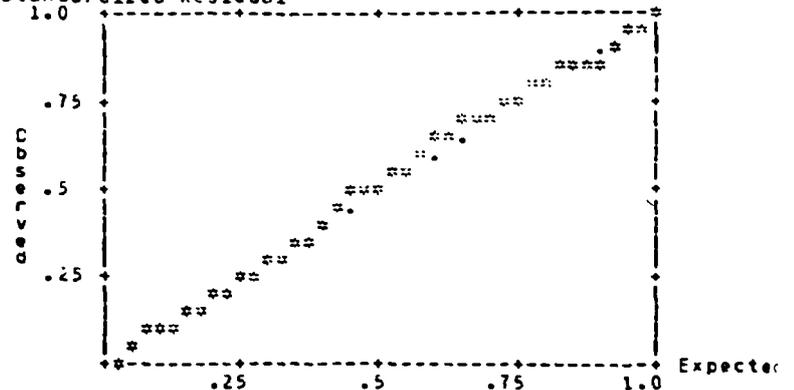
Case #	HOME	#ZRESID
43	5	2.69668
7	1	2.35692
47	5	-1.93463
79	12	1.83846
101	15	1.83606
32	4	1.73272
2	1	-1.71090
59	8	1.62123
66	8	-1.57669
53	7	1.56345

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
09:25:49 PSSRU (UNIV. KENT)

Histogram - Standardized Residual

N	Exp N	Out	(* = 1 Cases, . : = Normal Curve)
0	.06	Out	
0	.12	3.00	
1	.31	2.67	#
1	.70	2.33	::
2	1.44	2.00	:::
3	2.64	1.67	:::
4	4.33	1.33	:::
4	6.37	1.00	:::
8	8.59	.67	:::
10	9.90	.33	:::
10	10.40	.00	:::
13	3.30	-.33	:::
8	8.59	-.67	:::
8	8.57	-1.00	:::
5	4.33	-1.33	:::
5	2.64	-1.67	:::
1	1.44	-2.00	:::
0	.70	-2.33	:::
0	.31	-2.67	:::
0	.12	-3.00	:::
0	.06	Out	

Normal Probability (P-P) Plot
Standardized Residual



Change in Apathy: Distribution of Residuals.

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:45:54 PSSRU (UNIV. KENT)

VMS V5.0

***** MULTIPLE REGRESSION *****

Equation Number 2 Dependent Variable.. CHAP

Residuals Statistics:

	Min	Max	Mean	Std Dev	N
*PRED	-2.2589	3.3416	.2894	1.1363	79
*RESID	-2.7740	2.5027	.0017	1.1874	79
*ZPRED	-2.2673	2.6802	-.0161	1.0038	79
*ZRESID	-2.1654	1.9537	.0013	.9269	79

Total Cases = 104

Durbin-Watson Test = 2.53775

Outliers - Standardized Residual

Case #	HOME	*ZRESID
81	12	-2.16541
44	5	-2.07266
83	12	-2.05707
91	13	-1.95366
12	2	-1.95312
53	7	1.93085
80	12	1.91653
31	4	1.90660
11	2	1.69033
4	1	1.42725

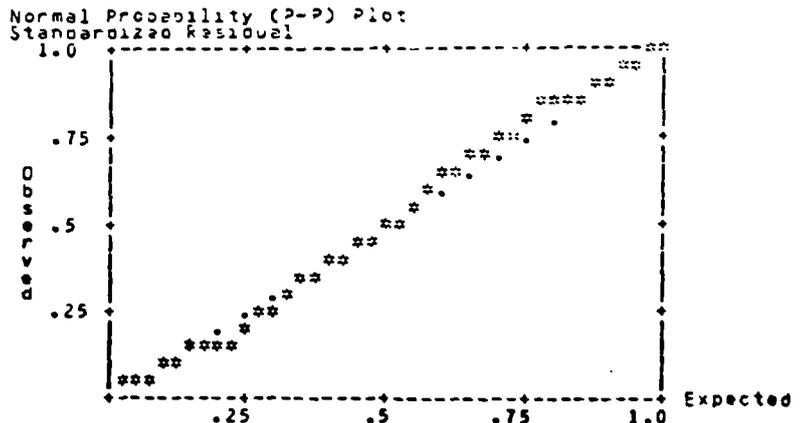
21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:45:54 PSSRU (UNIV. KENT)

Histogram - Standardized Residual

(# = 1 Cases, . : = Normal Curve)

N	Exp N	Out
0	.06	Out
0	.12	3.00
0	.31	2.67
0	.70	2.33
4	1.44	2.00 :###
1	2.64	1.67 #.
4	4.33	1.33 ###:
4	6.37	1.00 ####
10	8.39	.67 #####:##
9	9.90	.33 #####:.
13	10.46	.00 #####:###
13	9.90	-.33 #####:###
9	8.39	-.67 #####:##
4	6.37	-1.00 #####:
4	4.33	-1.33 #####:
0	2.64	-1.67 #####:
4	1.44	-2.00 #####:
0	.70	-2.33 #####:
0	.31	-2.67 #####:
0	.12	-3.00 #####:
0	.06	Out

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:45:54 PSSRU (UNIV. KENT)



Change in Orientation: Distribution of Residuals.

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
10:46:08 PSSRU (UNIV. KENT)

VMS V5.0

***** MULTIPLE REGRESSION *****

Equation Number 3 Dependent Variable.. CHDR

Residuals Statistics:

	Min	Max	Mean	Std Dev	N
*PRED	-2.0759	2.5036	-.0513	.9140	78
*RESID	-2.1699	3.0853	.0000	1.0159	78
*ZPRED	-2.2152	2.7954	.0000	1.0000	78
*ZRESID	-2.0072	2.8539	.0000	.9397	78

Total Cases = 104

Durbin-Watson Test = 2.12799

Outliers - Standardized Residual

Case #	HOME	*ZRESID
28	3	2.85395
61	8	2.80852
11	2	2.53875
100	14	2.30918
18	2	-2.00722
94	14	-1.95140
29	3	-1.78782
2	1	-1.47308
51	7	-1.44742
91	13	-1.44707

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
10:46:08 PSSRU (UNIV. KENT)

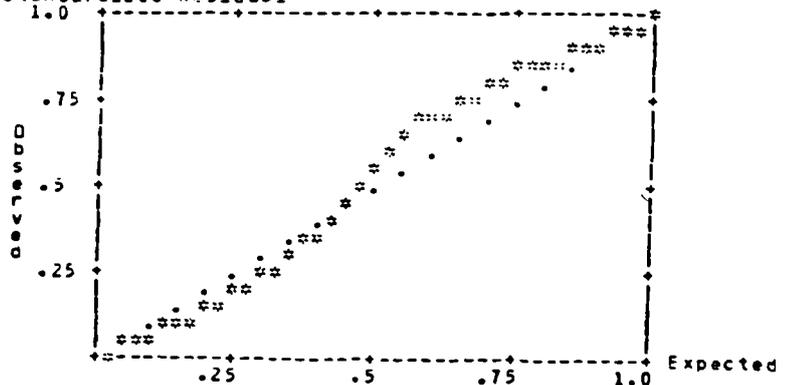
Histogram - Standardized Residual

M Exp N (* = 1 Cases, . : = Normal Curve)

0	.06	Out
1	.12	3.00 #
2	.30	2.67 ##
1	.70	2.33 :
0	1.42	2.00 .
0	2.61	1.67 .
3	4.28	1.33 ###
3	6.29	1.00 ####
7	8.28	.67 #####
8	9.77	.33 #####
21	10.32	.10 #####
12	9.77	-.33 #####
10	8.28	-.57 #####
2	6.29	-1.00 ##
5	4.28	-1.33 ##
1	2.61	-1.67 #
2	1.42	-2.00 #
0	.70	-2.33 .
0	.30	-2.67 .
0	.12	-3.00 .
0	.06	Out

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
10:46:08 PSSRU (UNIV. KENT)

Normal Probability (P-P) Plot
Standardized Residual



Change in Agitation-Smiling Index: Distribution of Residuals.

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:46:21 PSSRU (UNIV. KENT)

VMS V5.0

*** MULTIPLE REGRESSION ***

Equation Number 4 Dependent Variable.. CHAS

Residuals Statistics:

	Min	Max	Mean	Std Dev	N
*PRED	-1.9141	1.9888	.0102	.7619	79
*RESID	-1.4791	1.6117	.0151	.7438	79
*ZPRED	-2.5139	2.5779	-.0034	.9940	79
*ZRESID	-1.9153	2.0869	.0195	.9631	79

Total Cases = 104

Durbin-Watson Test = 2.21823

Outliers - Standardized Residual

Case #	HOME	*ZRESID
48	5	2.08695
67	8	2.04011
5	1	-1.91531
52	7	-1.87375
99	14	1.76168
53	7	1.65964
39	4	-1.57035
30	4	-1.55143
7	1	1.54227
35	4	1.52490

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:46:21 PSSRU (UNIV. KENT)

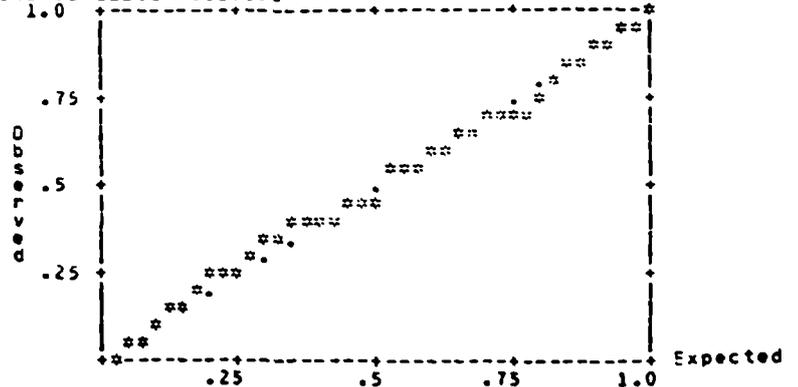
Histogram - Standardized Residual

N Exp N (* = 1 Cases, . : = Normal Curve)

0	.06	Out
0	.12	3.00
0	.31	2.67
0	.70	2.33
2	1.44	2.00
4	2.64	1.67
3	4.33	1.33
10	6.37	1.00
5	8.39	.67
14	9.90	.33
12	10.46	.00
6	9.90	-.33
8	8.39	-.67
7	6.37	-1.00
7	4.33	-1.33
2	2.64	-1.67
0	1.44	-2.00
0	.70	-2.33
0	.31	-2.67
0	.12	-3.00
0	.06	Out

21-Feb-89 SPSS-X RELEASE 3.1 FOR VAX/VMS
 10:46:21 PSSRU (UNIV. KENT)

Normal Probability (P-P) Plot
 Standardized Residual



APPENDIX 9 LISREL ANALYSIS

Table A9.1 shows the values of the coefficients in the model using different assumptions and estimation techniques.

Table A9.1: Stability of estimates of coefficients across estimation methods

COEFF	SPSS-X	ML	2SLS	GLS	ULS	IV	ULS *
<u>CHSD</u>							
DEP	0.19	0.19	0.19	0.19	0.19	0.19	0.06
LSTAY	0.11	0.11	0.11	0.11	0.13	0.13	0.03
SD	-0.61	-0.61	-0.61	-0.61	-0.61	-0.61	-0.53
CD	-0.29	-0.29	-0.29	-0.29	-0.28	-0.28	-0.24
PREG	-0.21	-0.21	-0.21	-0.21	-0.22	-0.22	-0.22
QUIET	-0.34	-0.36	-0.34	-0.36	-0.30	-0.30	-0.23
TURNOVER	0.25	0.27	0.25	0.27	0.23	0.23	-0.06
PDRUG	0.22	0.23	0.22	0.23	0.23	0.23	0.14
CLOTHES	-0.18	-0.16	-0.18	-0.16	-0.14	-0.14	-0.05
<u>CHAP</u>							
DEP	-0.01	-0.01	-0.01	-0.01	-0.03	-0.03	-0.21
LSTAY	0.08	0.08	0.08	0.08	0.06	0.06	>0.0
AP	-0.71	-0.71	-0.71	-0.71	-0.68	-0.68	-0.43
OR1	-0.22	-0.22	-0.22	-0.23	-0.22	-0.22	-0.05
PREG	-0.23	-0.22	-0.23	-0.22	-0.23	-0.23	-0.28
SSICK	0.23	0.25	0.23	0.25	0.23	0.23	0.10
CRATO	-0.23	-0.25	-0.23	-0.25	-0.23	-0.23	-0.18
NQ	0.28	0.31	0.28	0.31	0.27	0.27	0.09
PDRUG	0.18	0.20	0.18	0.20	0.20	0.20	0.04
FIND	-0.35	-0.35	-0.35	-0.35	-0.36	-0.36	-0.02
<u>CHOR</u>							
DEP	-0.04	-0.04	-0.04	-0.04	-0.05	-0.05	0.09
LSTAY	0.18	0.18	0.18	0.18	0.14	0.13	-0.01
OR1	-0.64	-0.65	-0.64	-0.65	-0.64	-0.64	-0.23
MAB	0.59	0.60	0.59	0.60	0.57	0.57	0.15
PREG	0.21	0.20	0.21	0.20	0.16	0.16	-0.12
QUIET	0.45	0.44	0.45	0.44	0.39	0.39	0.18
NQ	0.46	0.46	0.46	0.46	0.42	0.42	0.17
STAFFTURN	-0.52	-0.51	-0.52	-0.51	-0.45	-0.45	-0.08
VISITORS	0.24	0.24	0.24	0.24	0.22	0.22	0.18

* Non-convergent ULS when measurement error included in the model.

The t statistics for the models shown in chapter 11 are given in tables A9.2 and A9.3.

Table A9 1 Structural Equation Model - t-statistics

	DEPENDENT VARIABLE		
	<u>CHSD</u>	<u>CHAP</u>	<u>CHOR</u>
<u>Personal Characteristics</u>			
Depression	1.97	-0.12	-0.38
L Stay	1.14	0.80	1.64
S Disturb	-6.91	-.-	-.-
Apathy	-.-	-6.27	-.-
Orientation	-.-	-1.97	-5.01
Comm. Diff.	-3.08	-.-	-.-
Mental ability	-.-	-.-	4.59
<u>Environment Characteristics</u>			
Positive Regime	-2.08	-1.97	1.68
Quiet	-3.11	-.-	3.57
Turnover of Residents	1.94	-.-	-.-
Staff sickness	-.-	2.19	-.-
Care staff/res ratio	-.-	-2.19	-.-
% SRN/SEN	-.-	2.78	3.83
Staff turnover	-.-	-.-	-3.70
Psycho drugs	2.31	1.96	-.-
Chooses what to wear	-1.74	-.-	-.-
Find	-.-	-2.94	-.-
Frequency of visitors	-.-	-.-	2.35
R ²	.56	.48	.45

Total Coefficient of determination = 0.873

Chi-square with 26 df = 17.16 (p=.904)

Goodness of Fit Index = 0.980

Adjusted Goodness of Fit Index = 0.822

Root mean square residual = 0.017

Increase in Outcome measures - definitions:

CHSD: Increase in socially disturbed behaviour

CHAP: Increase in apathetic behaviour

CHOR: Increase in orientation

Table A9.2 No Environmental Effect Model - t-statistics

	DEPENDENT VARIABLE		
	<u>CHSD</u>	<u>CHAP</u>	<u>CHOR</u>
<u>Personal Characteristics</u>			
Depression	1.92	-0.67	0.79
L Stay	1.09	0.18	-0.36
S Disturb	-5.88	-.-	-.-
Apathy	-.-	-4.14	-.-
Orientation	-.-	-1.70	-3.81
Comm. Diffs.	-2.60	-.-	-.-
Mental ability	-.-	-.-	3.49
R ²	.40	.24	.22

Total Coefficient of determination = 0.654

Chi-square with 42 df = 94.26 (p=0.000)

Goodness of Fit Index = 0.915

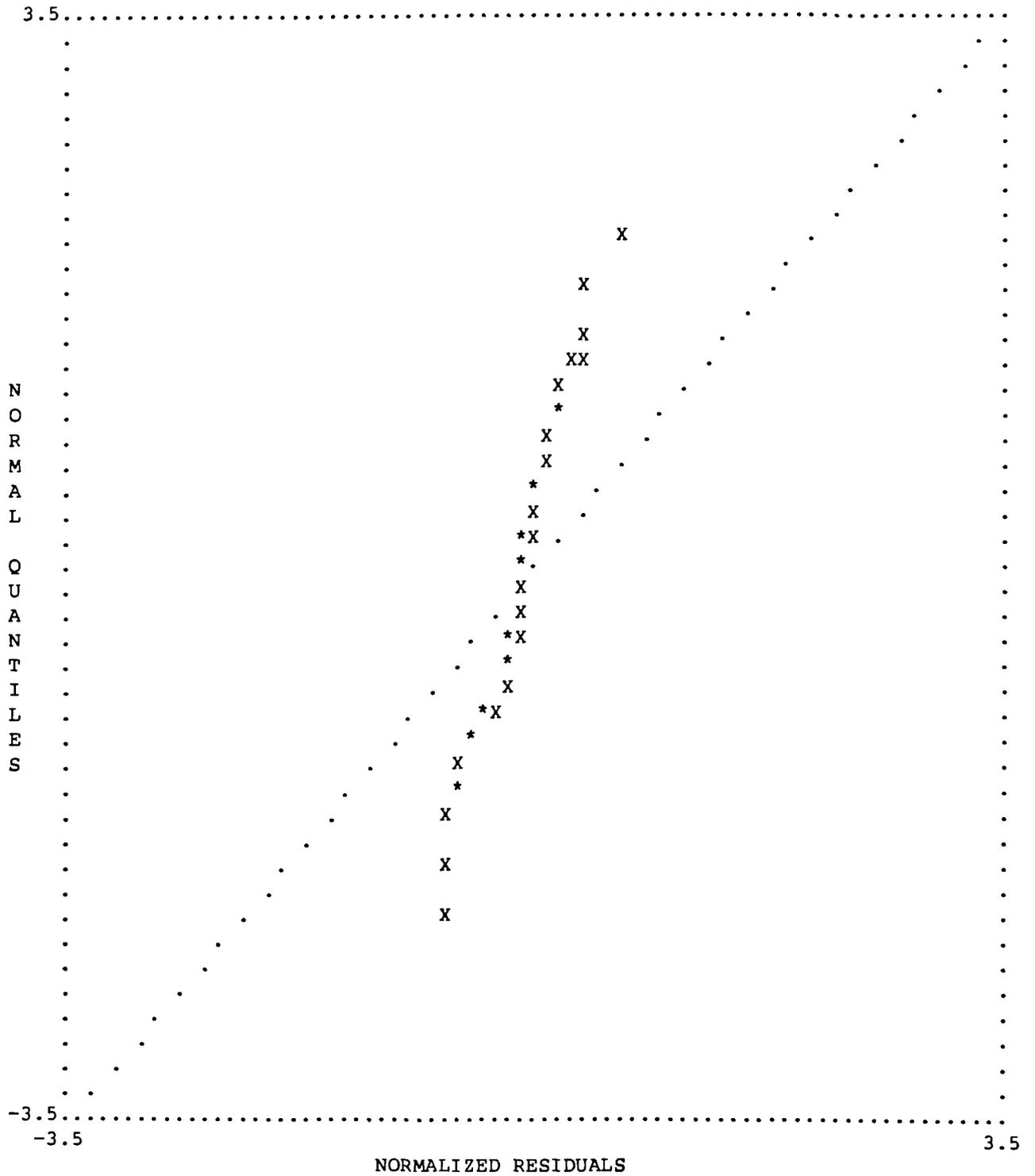
Adjusted Goodness of Fit Index = 0.532

Root mean square residual = 0.048

Diagram A9.1. Q-Q Plot of Normalised Residuals

STEPWISE REG VARIABLES

QPLOT OF NORMALIZED RESIDUALS



REFERENCES

- Age Concern (1984), "Reminiscence as Therapy", a Discussion Paper.
- Akesson, H. (1969), "A population study of senile and arteriosclerotic psychoses", Hum. Hered., 19, 546-566.
- Allen, I. (1983), Short-Stay Residential Care for the Elderly, Policy Studies Institute, London.
- Allen, I. (1984), "The Future of Local Authority Residential Care: A research perspective" in Policy Studies Institute, Residential Care for the Elderly: Present Problems and Future Issues, pp. 64-78, discussion paper No 8, PSI, London.
- Allen, I. (1986) "Short stay residential care and other uses of local authority homes for the elderly" in K. Judge and I. Sinclair (eds.), Residential Care for Elderly People, HMSO, London.
- Allport, G. (1937) Personality a Psychological interpretation Hall, New York.
- American Psychiatric Association (1980), Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, American Psychiatric Association, Washington DC.
- Amster, L. and Kraus, H. (1974), "The Relationship between Life Crises and Mental Deterioration in Old Age", International Journal of Aging and Human Development, 5, 51-5.
- Archea, J. (1982), "Conceptual and methodological conflicts in applied interdisciplinary research on environment and aging" in M. Lawton, P. Windley and T. Byerts (eds.) Aging and the Environment, Theoretical Approaches, Springer, New York.

- Argyle, N., Jestice, S., Brook, C. (1985), "Psychogeriatric patients: their supporters' problems", Age and Ageing, 14, 355-360.
- Arie, T. and Jolley, D. (1982), "Making services work" in R. Levy and F. Post (eds.), The Psychiatry of Late Life, Blackwell Scientific Publications, Oxford.
- Atherton, J. (1984), 'One step at a time' Social Work Today, 19/11/84.
- Atherton, J. (1986), Professional Supervision in Group Care Settings, Tavistock, London.
- Atkinson, D., Bond, J. and Gregson, B (1986), "The dependency characteristics of older people in long term institutional care" in C. Phillipson, M. Bernard and P. Strang (eds.), Dependency and Interdependency in Old Age - Theoretical Perspectives and Policy Alternatives, Croom Helm, London
- Baltes, M , Burgess, R and Stewart, R (1980), "Independence and dependence in self-care behaviours in nursing home residents: an operant-observation study", International Journal of Behavioural Development, 3, 489-500.
- Baltes, M., Honn, S., Barton, E , Orzech, M and Lago, D. (1983), "On the social ecology of dependence and independence in elderly nursing home residents: a replication and extension," Journal of Gerontology, 38, (5), 556-64.
- Barclay, P. (1982), Social Workers, their Roles and Tasks, Institute for Social Work, Bedford Square Press, London.
- Barton, R. (1966), Institutional Neurosis, 2nd Ed. Wright, Bristol.

- Beck, P. (1982), "Two successful interventions in nursing homes: the therapeutic effects of cognitive activity", The Gerontologist, 22 (4), 378-383.
- Bennett, R. (1963), "The meaning of institutional life", The Gerontologist, 3, 97-116.
- Berger, P. and Berger, B. (1976), Sociology: a Biographical Approach, Penguin, Harmondsworth
- Bergmann, K., Foster, E., Justice, A., Matthews, V. (1978), "Management of the demented elderly patient in the community", British Journal of Psychiatry, 132, 441-449.
- Bergmann, K. and Jacoby, R (1982), "The limitations and possibilities of community care for the elderly demented" in Elderly people in the community - their service needs Research contributions to the development of policy and practice, pp. 141-168, DHSS, London
- Bergmann, K., Manchee, V, woods, R (1984), "Effect of Family Relationships on Psychogeriatric Patients" Journal of the Royal Society of Medicine, 77, 840-844
- Berkman, L. and Syme, S (1979) "Social networks, host resistance and mortality: a nine year follow up of Alameda county residents", American Journal of Epidemiology, 109, 186-204
- Berman, S and Rappaport, M (1984), "Social Work and Alzheimer's disease; Psychosocial Management in the Absence of Medical Cure", Social Work in Health Care, 10 (2), pp. 53-70.
- Bishop, Y., Fienberg, S and Holland, P. (1975), Discrete Multivariate Analysis, Theory and Practice, MIT Press, Cambridge, Massachusetts.
- Bland, R. and Bland, R. (1983), "Recent Research in Old People's Homes: A Review of the Literature", Research, Policy and Planning, 1 (1), 16-24.

- Blau, P. (1964), Exchange and Power in Social Life, John Wiley, New York.
- Blessed, G., Tomlinson, B. and Roth, M. (1968), "Association between Quantitative Measures of Dementia and Senile Change in Cerebral Grey Matter of Elderly Subjects", British Journal of Psychiatry, 114, 797-811.
- Blenkner, M. (1967), "Environmental Change and the Ageing Individual", The Gerontologist, 7 (2), part 1, 101-05
- Bollerup, T. (1975), "Prevalence of mental illness among 70 year-olds domiciled in nine Copenhagen Suburbs" Acta Psychiatr Scand 51, 327-339.
- Boosma, A. (1983), "Non-convergence, improper solutions, and starting values in LISREL maximum likelihood estimation", Psychometrika, 50, 229-242.
- Booth, T. (1983), "The Rising Tide", Community Care, 10/3/83.
- Booth, T. (1985), Home Truths, Old Peoples Homes and the Outcome of Care, Gower, Aldershot
- Booth, T. (1986), "Institutional Regimes and Induced Dependency in Homes for the Aged", The Gerontologist, 26 (4), 418-423.
- Booth, T. (1986a), Regimes and Residential Outcomes in C. Phillipson, M. Bernard and P. Strang (Eds), Dependency and Interdependency in Old Age - Theoretical Perspectives and Policy Alternatives, Croom Helm, London.
- Booth, T., Barritt, A., Berry, S., Martin, D., Melotte, C., Phillips, D. (1982), "A Confused Mixture", Community Care, 2/12/82.

- Booth, T. and Phillips, D. (1987), "Group living in homes for the elderly: a comparative study of the outcomes of care", British Journal of Social Work, 17, 1-20.
- Botwinick, J. (1977), "Intellectual Abilities" in J. Birren and K. Schaie (eds.) Handbook of the Psychology of Aging, 580 - 605, Van Nostrand Reinhold, New York.
- Botwinick, J. (1978), Aging and Behaviour, Springer, New York.
- Botwinick, J. and Storandt, M. (1980), "Recall and recognition of old information in relation to age and sex", Journal of Gerontology, 35, 70-6.
- Bouling, A. and Bleathman, C. (1982), "The need for nursing and other skilled care in local authority residential homes for the elderly", Clearing House for Local Authority Social Services Research, 17, 9, 1-65.
- Bower, H. (1967), "Sensory stimulation and the treatment of senile dementia", Medical Journal of Australia 1, 1113-9.
- Bowker, L. (1981), "The Humanization of Geriatric Facilities", International Journal of Rehabilitation Research, December, 4 (4), 553-554
- Brearley, C. (1977), Residential Work with the Elderly, Routledge and Kegan Paul, London.
- Brody, M. (1942), "The measurement of dementia", Journal of Mental Science 88, 317- 27.
- Burling, T., Lentz, E., Wilson, R. (1956), The Give and Take in Hospitals, Putnam, New York.

Cameron, D. (1941), "Studies in senile nocturnal delirium", Psychiatry Quarterly, 15, 47-53.

Campbell, A., McCosh, L., Reinken, J., Allan, B. (1983), "Dementia in old age and the need for services", Age and Ageing, 12, 11-16.

Cantor, D. and Cantor, S. (1979), "Designing for therapeutic environments: a review of research" John Wiley, Chichester and New York.

Carey, B. and Hansen, S , (1985-86), "Social work groups with institutionalized Alzheimers disease victims" Special issue. Social Work and Alzheimers Disease; Practice Issues with victims and their families, Journal of Gerontological Social Work, 9, (2), 15-25

Carp, F. (1978-9), "Effects of the living environment on activity and use of time", International Journal of Human Aging and Human Development, 9, 75-91.

Carp, F. (1976), "Urban life style and life-cycle factors" in M. Lawton, R. Newcomer and T. Byerts (eds), Community Planning for an Aged Society, Dowden, Hutchinson and Ross, Stroudsburg, Philadelphia.

Centre for Policy on Aging (1984), "Home Life: a Code of Practice for Residential Care", CPA, London.

Challis, D. (1981), "The measurement of outcome in social care of the elderly" Journal of Social Policy, 10 (2), 179-208.

Challis, D. and Davies, B. (1986), Case Management in Community Care, Gower, Aldershot.

Chown, S. (1972), Human Ageing, Penguin, Harmondsworth.

Chow, G. (1983), Econometrics, McGraw-Hill, New York.

Clarke, M., Clarke, S., Odell, A., Jagger, C. (1984), "The elderly at home: health and social status", Health Trends, 16, 3-7.

Clough, R. (1981), Old Age Homes, Allen and Unwin, London.

Cochran, W. (1977), Sampling Techniques, third edition, John Wiley and Sons, Chichester and New York.

Coleman, P. (1986), Ageing and Reminiscence Processes, John Wiley and Sons, Chichester and New York

Cook, T and Campbell, D. (1979), Quasi-Experimentation, Design and Analysis Issues for Field Settings, Rand McNally College Publishing Company, Chicago.

Corleyn, S. (1982), "Some relationships between global amnesias and the memory impairment in Alzheimers Disease" in S. Corlain, Davisk, J. Growden, E. Usdin, R. Wurtman (eds.), "Alzheimers Disease: Report of Progress in Research" (Ageing, vol 19), Raven Press, New York, 149-64.

Craig, J. (1983), "The growth of the elderly population" Population Trends, 32, 28-33.

Craik, F. (1977), "Age differences in human memory" in Handbook of the Psychology of Aging, J. Birren and K. Schaie (eds.), 384-420. Van Nostrand Reinhold, New York.

- Cummings, E., Dean, L., Newall, D., McCaffrey, I. (1960), "Disengagement: A tentative theory of ageing" in S. Chown (ed.), Human Ageing, Penguin, Harmondsworth.
- Darton, R. (1983) "Residential accommodation for the elderly, 1970-81", PSSRU Discussion Paper 277/2, Personal Social Services Research Unit, University of Kent at Canterbury.
- Darton, R. (1986a), "Methodological Report of the PSSRU Survey of Residential Accommodation for the Elderly, 1981" PSSRU Discussion Paper 422, Personal Social Services Research Unit, University of Kent at Canterbury.
- Darton, R. (1986b), "PSSRU Survey of Residential Accommodation for the Elderly 1981. General Characteristics of the Surveyed Homes", PSSRU Discussion Paper 423, Personal Social Services Research Unit, University of Kent at Canterbury.
- Darton, R. (1986c), "PSSRU Survey of Residential Accommodation for the Elderly, 1981. Design Features and Facilities Provided by the Surveyed Homes", PSSRU Discussion Paper 424, Personal Social Services Research Unit, University of Kent at Canterbury
- Darton, R. (1986d), "PSSRU Survey of Residential Accommodation for the Elderly, 1981. Characteristics of the Residents", PSSRU Discussion Paper 426, Personal Social Services Research Unit, University of Kent at Canterbury.
- Darton, R. and Knapp, M. (1984), "The cost of residential care for the elderly: the effects of dependency, design and social environment", Aging and Society, 4 (2),15 7-83.
- Darton, R. and Wright, K. (1989), "PSSRU/CHE Survey of Residential and Nursing homes: Preliminary Information on the characteristics of homes and residents

and patients in non-statutory homes, and comparisons with the public sector", PSSRU Discussion Paper 617, Personal Social Services Research Unit, University of Kent at Canterbury.

David, T., Moos, R. and Kahn, J (1981), "Community integration among elderly residents of sheltered care settings", American Journal of Community Psychology, 9 (5), 513-526.

Davies, B. and Knapp, M. (1978), "Hotel and dependency costs of residents in old people's homes", Journal of Social Policy, 7 (1), 1-22.

Davies, B. and Knapp, M. (1981), Old Peoples' Homes and the Production of Welfare, Gower, Aldershot.

Dawson, P and Reid, D. (1987), "Behavioural Dimensions of Patients at Risk of Wandering", The Gerontologist, 27 (1), 104-107.

DeLong, A. (1974), "Environments for the Elderly", Journal of Communications, 24 (4), 101-102.

De Zoysa, A and Blessed, G (1984), "The Place of the Specialist Home for the Elderly Mentally Infirm in the Care of Mentally Disturbed Old People", Age and Aging, 13, 218-223

Department of Health (1989), Kenneth Clarke's Statement to Parliament on the Future Arrangements for Community Care, Press Release, 12 July 1989.

Department of Health and Social Security (1973), Residential Accommodation for the Elderly, Local Authority Building Note Number 2, HMSO, London.

Department of Health and Social Security (1975), The Census of Residential Accommodation: 1970. I. Residential Accommodation for the Elderly and Younger Physically Handicapped, HMSO, London.

Department of Health and Social Security (1977), "Residential Homes for the Elderly: Arrangements for Health Care, A Memorandum of Guidance", DHSS, London.

Department of Health and Social Security (1979), "Residential Care for the Elderly in London", Social Work Service: London Region, London.

Department of Health and Social Security (1981), Growing Older, HMSO, London.

Donabedian, A. (1980), The Definition of Quality and Approaches to its Assessment, Health Administration Press, Michigan

Donabedian, A. (1982), The Criteria and Standards of Quality, Health Administration Press, Michigan.

Douglas, R and Payne, C (1985), Developing Residential Practice, National Institute for Social Work, London.

Douglas, R. and Payne, C (1987), Learning about Caring, National Institute for Social Work, London.

Douglas, R. and Payne, C. (1988), Organising for Learning, National Institute for Social Work, London.

Dowd, J. (1980), Stratification Amongst the Aged, Brookes-Cole, Monterey, California.

Duncan, O. (1969), "Some linear models for two wave two-variable panel analysis"
Psychological Bulletin, 1969, 72 (3), 177-182.

Durgin, J. (1982), "The pharmacist's evaluation", Geriatric Nursing, January/February,
31-33.

Edwards, A. and Wine, D. (1963), "Personality changes with age: their dependency on
concomitant intellectual decline" in S. Chown (ed.), Human Ageing, Penguin,
Harmondsworth.

Edwards, C. and Sinclair, I. (1980), "Debate: segregation versus integration", Social
Work Today, 11: 40, 24.

Essenmoller, E. (1956), "Individual traits and morbidity in a Swedish rural
population", Acta Psychiatrica Scandinavica, Supplement, 100.

Evans, G., Hughes, B., Wilkin, D. (1980), "Issues in Residential Care of the Elderly",
Research Report, Psychogeriatric Unit, University Hospital of South Manchester.

Evans, G., Hughes, B., Wilkin, D., Jolley, D. (1981), "The Management of Mental and
Physical Impairment in Non-specialist Residential Homes for the Elderly",
Research Report, Psychogeriatric Unit, University Hospital of South Manchester.

Everitt, B. (1984), An Introduction to Latent Variable Models, Chapman and Hall,
New York.

Fairhurst, E. (1978), "Talk and the Elderly in Institutions" paper presented to the
Annual Conference of the British Society of Social and Behavioural Gerontology.

Feier, C. and Leight, G. (1981), "A Communication-cognition program for elderly
nursing home residents", The Gerontologist, 21, (4), 408-416.

- Feil, N. (1972), "A New Approach to Group Therapy with Senile Psychiatric Aged", Paper presented at the International Gerontological Conference, Puerto Rico.
- Feil, N. (1985), "Resolution: the final life task", Journal of Humanistic Psychology, 25 (2), 91-105.
- Felce, D. and Jenkins, J (1979), "Engagement in activities by old people in residential care", Health and Social Services Journal, 2/11/79.
- Ferm, L. (1974), "Behavioural activities in demented geriatric patients", Gerontologia Clinica, 16, 185-94
- Ferris, S , Crook, T., Sathananthan, G. (1976), "Reaction time as a diagnostic measure in senility", Journal of the American Geriatrics Society, 24, 29-33.
- Ferry, G. (1987), "The Genetic Roots of Dementia", New Scientist, 12/3/87, pp.20-21..
- Filer, R and O'Connell, D. (1964), "Motivation of aging persons in an institutional setting" in S Chown (ed), Human Ageing, Penguin, Harmondsworth.
- Fleishman, R., Rosin, A , Tomer A., Schwartz, R. (1987), "Cognitive impairment and the quality of care in long-term care institutions" in Comprehensive Gerontology, 1, 18-23.
- Folsom, J. (1968), "Reality orientation for the elderly patient", Journal of Geriatric Psychiatry, 1, 291-300.
- Gilhooly, M. (1984), "The social dimension of senile dementia" in I. Hanley and J. Hodge (eds.), Psychological Approaches to the Care of the Elderly, Methuen, London.

Gilleard, C. (1982), "Stresses and Strains Amongst Supporters of the Elderly Infirm Day Hospital Attenders", unpublished interim report, Psychogeriatric Day Centre Research Project, Department of Psychiatry, University of Edinburgh.

Gilleard, C. (1989), "Losing One's Mind and Losing One's Place: a Psycho-social Model of Dementia" paper presented to British Society of Gerontologists Conference at Nottingham.

Gilleard, D. and Pattie, A. (1977), "The Stockton Geriatric Rating Scale: A Shortened Version with British Normative Data", British Journal of Psychiatry, 131, 90-4.

Gilleard, C. and Pattie, A. (1978), "The effect of location on the elderly mentally infirm: relationship to mortality and behavioural deterioration", Age and Aging, 7, 1, pp. 1-6.

Glenwick, D.S. and Whitbourne S (1977), "Beyond despair and disengagement: A transaction model of personality development in later life", International Journal of Aging and Human Development, 8 (3), pp. 261-267.

Godlove, C., Dunn, G. and Wright, H. (1980), "Caring for old people in New York and London: the 'nurses' aide' interviews" Journal of the Royal Society of Medicine, 72, 713-23.

Goffman, E. (1961) Asylums: Essays on the Social Situation of Mental Patients and other Inmates, Doubleday.

Goldberg, D. (1972), The Detection of Psychiatric Illness by Questionnaire, OUP, London.

- Goldberg, D. and Hillier, V. (1979), "A scaled version of the general health questionnaire", Psychological Medicine, 9, 139-145.
- Goldberg, E. and Connelly, N. (1982), The Effectiveness of Social Care for the Elderly: an Overview of Recent and Current Evaluative Research, Heinemann, London.
- Gopelrud, E. (1979), "Unexpected consequences of deinstitutionalization of the mentally disabled elderly", American Journal of Community Psychology, 7 (3), pp. 315-328.
- Gray, B. and Isaacs, B. (1979), Care of the Elderly Mentally Infirm, Tavistock, London.
- Green, W. (1989), "Buildings for the Neighbourhood Care of Elderly People with Dementia" Help the Aged, HMSO, London.
- Greenberg E., Hagnell, O., Jesjö, L., Mittelman, M. (1976), "The rising prevalence of chronic brain syndrome in the elderly", paper presented at Symposium on Society, Stress and Disease Aging and Old Age, Stockholm.
- Greene, V. and Monahan, D. (1982), "The impact of visitation on patient well being in nursing homes", The Gerontologist, 22 (4), 418-423.
- Greene, J., Smith, R., Gardiner, M. and Timbury, G. (1982), "Measuring behavioural disturbance of elderly demented patients in the community and its effect on relations. A factor analytic study", Age and Aging, 11, 121-126.
- Greenwell, S. (1989), "Whose name is it anyway? An action research project surrounding the development of a residential and day-care facility for older people", Continuing Education in Social Work, University of Bath, Bath.

Griffiths, R. (1988), Community Care: Agenda for Action, HMSO, London.

Gubrium J. (1972), "Towards a Socio-Environmental Theory of Ageing", The Gerontologist, (12) 1, pp. 281-284.

Gurland, B. (1981), "The Borderlands of Dementia; The Influence of Sociocultural Characteristics on Rates of Dementia Occurring in the Senium" in N. Miller and G. Cohen (eds.) "Clinical Aspects of Alzheimer's Disease and Senile Dementia", Aging 15, 61-80, (Raven Press, New York).

Gurland, B., Dean, L., Cross, P. and Golden, R. (1980), "The Epidemiology of Depression and Dementia in the Elderly: The use of multiple indicators of these conditions" in J. Cole and Barrett (eds.), Psychology in the Aged, Raven Press, New York.

Gurland, B., Kuriansky, J., Sharpe, L., Simon, R., Stiller, P. and Birkett, P. (1977) "The Comprehensive Assessment and Referral Evaluation (CARE) - Rationale, Development and Reliability", International Journal of Aging and Human Development, 8 (1), 9-42.

Gurland, B., Copeland, J., Kuriansky, J., Kellaheer, M., Sharpe, L. and Dean, L. (1983), The mind and mood of aging. mental health problems of the community elderly in New York and London, Croom Helm, London

Halbur, B. and Fears, N. (1986), "Nursing personnel turnover rates turned over: potential positive effects on resident outcomes in nursing homes", The Gerontologist, 26 (1), 70-76.

Hamilton, M. (1960), "A Rating Scale for Depression", Journal of Neurology, Neurosurgery and Psychiatry, 23, 56-62.

- Hamilton, M. (1967), "Development of a rating scale for primary depressive illness" British Journal of Social and Clinical Psychology, 6, 278-296.
- Hamilton, M. (1974), "General Problems of Psychiatric Rating Scales (Especially for Depression" in Pichot, P. (ed.), Psychological Measurements in Psychopharmacology, Mod. Prob. Pharmacopsychiat, 7, 125-138, Paris.
- Hamilton, M (1982), "Use of rating scales in geriatric patients", Gerontology, 28, 42-48.
- Handschu, S. (1973), "Profile of the nurses aide: expanding her role as a psycho-social companion to the nursing home", The Gerontologist, 13, 315-17.
- Hanley, I. (1981), "The use of signposts and activity training to modify work disorientation in elderly patients", Journal of Behaviour Therapy and Experimental Psychiatry, 12 (3), pp. 241-247.
- Hanley, I (1984), "Theoretical and practical considerations in reality orientation therapy with the elderly" in I Hanley and J. Hodge (eds.) Psychological Approaches to the Care of the Elderly, Croom Helm, London.
- Hanley, I. and Hodge, J. (1984), Psychological Approaches to the Care of the Elderly Croom Helm, London.
- Hanley, I., McGuire R and Boyd W (1981), "Reality orientation and dementia: a controlled trial of two approaches", British Journal of Psychiatry, 138, 10-14.
- Hanson, J. (1971), Residential Care Observed, NISW and Age Concern, London.

- Hasegawa, K. (1974), "Aspects of community mental health care of the elderly in Japan", International Journal of Mental Health, 8, 36-49.
- Hasegawa, K. (1982), "The Report of the Health Status of the Aged in Kanagawa Prefecture" Section of Health, Kanagawa, Kenya.
- Harkins, S., Chapman, C., Eisdorfer, C. (1979), "Memory loss and response bias in senescence", Journal of Gerontology, 34, 66-72.
- Harris, H. and Lipman, A. (1980), "Social symbolism and space usage in daily life", Sociological Review 28, (2), pp. 415-428.
- Harris, H., Lipman, A., Slater, R. (1977), "Architectural design: the spatial location and interaction of old people", Gerontology, 23, 390-400.
- Haug, M., Belgrave, L., Grattan, B. (1984), "Mental health and the elderly: factors in stability and change over time", Journal of Health and Social Behaviour, 25, 2, pp. 100-113.
- Havinghurst, R. (1968), "Personality and patterns of ageing", The Gerontologist, 8, 20-23
- Hayduk, L. (1987), Structural Equation Modeling with LISREL, Johns Hopkins University Press, Baltimore, Maryland.
- Health Advisory Service (1982), The Rising Tide: Developing Services for Mental Illness in Old Age, NHS Health Advisory Service, London.
- Hegeman, C. and Tobin, S. (1988), "Enhancing the autonomy of mentally impaired nursing home residents", The Gerontologist, 28, Supplement, pp. 71-75.

- Helson, H. (1964), Adaptation Level Theory, Harper and Row, New York.
- Henderson, A. (1986), "The epidemiology of Alzheimer's Disease", British Medical Bulletin, 42 (1), 3-10.
- Henderson, A. and Huppert, F. (1984), "The problem of mild dementia", Psychological Medicine, 14 (1), pp. 5-12.
- Henwood, M. and Wicks, M. (1984), "The Forgotten Army", Family Policy Studies Centre, London.
- Hickey, T. and Hodgson, J. (1974), "Constructural and Developmental Issues in the Evaluation of Adult Learning: Training in Applied Gerontology as an Example" in J. Gubrium (ed.), Late Life: Communities and Environmental Policy, Charles C. Thomas, Springfield, Illinois
- Hicks, C. (1988), Who Cares: Looking After People at Home, Virago Press, London.
- Hillier, B., Burdett, R., Reponis, J., Penn, A. (1987), "Creating life: or does architecture determine anything?" Architectural Behaviour, 3, 233-250.
- Hirschfeld, M. (1978), "Families Living with Senile Brain Disease", dissertation submitted in partial satisfaction of the requirements of Doctor of Nursing Science, University of California, San Francisco.
- Hitch, D. (1970), "An Experiment in Residential Care", County Councils Gazette, September.
- Hodge, J. (1984), "Towards a behavioural analysis of dementia" in I. Hanley and J. Hodge (eds.), Psychological Approaches to the Care of the Elderly, Croom Helm, London.

- Holden, U. and Sinebruchow, A. (1978), "Reality Orientation Therapy: A Study investigating the value of this therapy in the rehabilitation of elderly people", Age and Aging, 7, 83-89.
- Holden, U. and Woods, R. (1982), Reality Orientation: Psychological Approaches to the 'Confused' Elderly, Churchill Livingstone, Edinburgh.
- Holland, T., Konick, A., Buffum, W., Smith, M. and Petchers, M. (1981), "Institutional Structure and Resident Outcomes", Journal of Health and Social Behaviour, 22, 433-444.
- Horn, J. and Donaldson, G. (1976), "On the myth of intellectual decline in adulthood", American Psychologist, 31, 707-9.
- Hounslow, London Borough of (1982), "The need for nursing and other skilled care in Local Authority Residential Homes for the elderly", Social Services Research, 9.
- Hughes, B. and Wilkin, D. (1980), "Residential Care of the Elderly: A Review of the Literature", Research Report, Psychogeriatric Unit, University Hospital of South Manchester,
- Hughes, D., Berg, L., Danziger, W., Coben, L. and Martin, R. (1982), "A New Clinical Scale for the Staging of Dementia", British Journal of Psychiatry, 140, 566-572.
- Hunt, M. and Roll, M. (1987), "Simulation in Familiarizing Older People with an Unknown Building", The Gerontologist, 27 (2), 169-175.
- Imber, V. (1977), "A classification of staff in homes for the elderly", Statistics and Research Report to DHSS, HMSO, London.

- Ineichen, B. (1987), "Measuring the rising tide: how many dementia cases will there be by 2001?", British Journal of Psychiatry, 150, 193-200.
- Inglis, J. (1962), "Psychological practice in geriatric problems", Journal of Mental Science, 108, 669-74.
- Institute of Medicine (1977), "The Elderly and Functional Dependency: A Policy Statement", National Academy of Sciences, Washington DC.
- Isaacs, B. (1979), "The evaluation of drugs in Alzheimer's disease" Age and Aging, 8 (1), pp.1-7.
- Ittleton, W. (1982), "Some Issues Facing a Theory of Environment and Behavior" in M. Lawton, P. Windley and T. Byerts (eds.), Aging and the Environment, Theoretical Approaches, Springer, New York
- Jenkins, J., Felce, D., Powell, E., Lunt, B. (1977), "Measuring Client Engagement in Residential Settings for the Elderly", Research Report 120, Health Care Evaluation Team, Wessex Regional Health Authority.
- Johnson, C., Maclaren, S. and McPherson, F. (1981), "The comparative effectiveness of three versions of 'classroom' Reality Orientation" Age and Aging, 10, pp. 33-35.
- Jöneskog, K. and Sorböm, D. (1986), LISREL Users Guide, University of Uppsala, Sweden.
- Judge, K. and Sinclair, I. (eds.) (1986) Residential Care for Elderly People: Research Contributions to the Development of Policy and Practice, DHSS, HMSO, London.

- Kahana, E. (1974), "Matching Environments to Needs of the Aged: a conceptual scheme" in J. Gubrium, (ed) Late Life. Communities and Environmental Policy, Charles C. Thompson, Springfield, Illinois.
- Kahana, E. (1982), "A congruence model of person environment interaction" in Aging and the Theoretical Approaches, M. Lawton, P. Windley and T. Byerts (eds.) Springer, New York.
- Kahana, E., Liang, J., Felton, B. (1980), "Alternative Models of Person-Environment fit: Prediction of Morale in Three Homes for the Aged", Journal of Gerontology, 33 (4), 584-595.
- Kane, R. and Kane, R. (1981), Assessing the Elderly. A Practical Guide to Measurement, Lexington Books, Lexington, Massachusetts.
- Kaminskay, M. (ed)(1984), The Uses of Reminiscence, The Hawarth Press, New York.
- Karasawa, A. (1980), "The Report on the Health Status of the Aged in Tokyo", Metropolitan Government, Tokyo.
- Kasznik, A., Garron, D., Fox, J. (1979), "Differential effects of age and cerebral atrophy upon span of immediate recall and paired associated learning in older patients suspected of dementia", Cortex, 15, 285-95.
- Katz, S., Ford, A., Moskowitz, R., Jackson, B., Jaffe, M. (1963), "Studies of Illness in the Aged", Journal of the American Medical Association, 185, 12.
- Kay, D., Beamish, P. and Roth, M. (1964), "Old age mental disorders in Newcastle-Upon-Tyne: Part I, A study of prevalence" British Journal of Psychiatry, 110, 146-159.

Kay D., Beamish, P. and Roth, M (1964), "Old age mental disorders in Newcastle-Upon-Tyne: Part II. A study of possible social and medical causes", British Journal of Psychiatry, 110, 668-682.

Kay, D., Bergman, K., Foster E., McKechnie, A., Roth, M. (1970), "Mental illness and hospital usage in the elderly: a random sample follow up", Comprehensive Psychiatry, 11, 20-35.

Keen, J. (1989), "Interiors: Architecture in the Lives of People with Dementia", International Journal of Geriatric Psychiatry, 4, 255-272.

Kellaher, L. (1986), "Determinants of Quality of Life in Residential Settings for Old People", in K. Judge and I. Sinclair (eds.), Residential Care for Elderly People, HMSO, London

Kimball, A., Townsend, J and Bird, M (1974), "Elderly persons homes; a study of various aspects of regime and activities in elderly persons homes and their effect upon residents", Mimeograph, Social Services Department, Cheshire.

King, R., Raynes, N., Tizard, J. (1981), Patterns of Residential Care, Routledge and Kegan Paul, London.

Kirby, H. and Harper, R. (1988), "Team assessment of geriatric mental patients (II): Behavioural dynamics and psychometric testing in the diagnosis of functional dementia due to hysterical behavior", The Gerontologist, 28, (2), 260-262.

Kleban, M., Lawton, M., Brody, E , Moss, M. (1976), "Behavioural observations of the mentally impaired aged: those who decline and those who do not", Journal of Gerontology, 31, 333-339.

- Kleemier, R. (1961), "The use of meaning of time in special setting" in R. Kleemier (ed), Aging and Leisure, Oxford University Press, New York.
- Knapp, M. (1977), "The Activity Theory of Aging, An Examination in the English Context", The Gerontologist, 17, (6), pp. 553-559.
- Knapp, M., (1980), "Outcomes, Quality of Life and Social Environment: an Exploratory Study of the Process of Production in Old People's Homes" PSSRU Discussion Paper 154, Personal Social Services Research Unit, University of Kent at Canterbury.
- Knapp, M. and Harissis, K. (1981), "Staff vacancies and turnover in British old people's homes", The Gerontologist, 21 (1), 76-84.
- Korte, S (1966), "Designing for Old People: The role of residential homes" The Architectural Journal, 19 October
- Kuh, D. and Boldy, D. (1981), "The evaluation of short term care for the elderly provided in residential homes", Institute of Biometry and Community Medicine, University of Exeter, Exeter.
- Kushlick, A. and Blunden, R. (1974), "Proposals for Setting up and Evaluation of an Experimental Service for the Elderly", Research Report 107, Health Care Evaluation Team, Winchester.
- Kuypers, J. (1972), "Internal-external locus of control, ego functioning and personality characteristics in the old", The Gerontologist, 12, 168-73.
- Lawrence, R. (1982), "Domestic Space and Society: A Cross Cultural Study", Comparative Studies in Society and History, 24 (1), 104-30.

- Lawton, M. (1974), "Psychology of Aging" in W. Brier (ed.), Aging: Its Challenge to the Individual and Society, Fordham University Press, New York.
- Lawton, M. (1979a), "Environmental Change: The Older Person as Imitator and Responder", mimeo, Philadelphia Geriatric Centre, Philadelphia.
- Lawton, M. (1979b), "Therapeutic environments for the aged", in D. Cantor and S. Cantor, Designing for Therapeutic Environments, John Wiley, Chichester and New York.
- Lawton, M. (1981) "Sensory deprivation and the effect of the environment on management of the patient with senile dementia" in N. Miller and G. Cohen (eds.) Clinical Aspects of Alzheimers Disease and Senile Dementia, (Ageing, 15) Raven Press, New York.
- Lawton, M. (1982), "Competence, Environmental Press and the Adaptation of Older People" in M. Lawton, P. Windley, and T. Byerts (eds.), Aging and the Environment, Theoretical Approaches, Springer, New York.
- Lawton, M. (1983), "Environment and other determinants of well being in older people", The Gerontologist, 23 (4) pp. 349-57.
- Lawton, M., Nahemow, L. (1973), "Ecology and the Aging Process" in C. Eisdorfer and M. Lawton (eds.), The Psychology of Adult Development and Ageing, American Psychological Association, Washington DC.
- Lawton, M., Windley, P. and Byerts, T. (eds.)(1982), Aging and the Environment, Theoretical Approaches, Springer, New York.
- Leech, S. and Witte, K. (1971), "Paired associate learning in elderly adults as related to pacing and incentive conditions", Developmental Psychology, 5, 180.

- Lemke, S., and Moos, R. (1980), "Assessing the institutional policies of sheltered care settings", Journal of Gerontology, 35 (1), 96-107.
- Lemke, S., Moos, R. (1981), "The supra-personal environments of sheltered care settings", Journal of Gerontology, 36 (2), 233-43.
- Lemke, S. and Moos, R. (1987), "Measuring the social climate of congregate residences for older people: Sheltered Care Environment Scale", Psychology and Aging, 2 (1), 20-29.
- Leng, N. (1982), "Behavioural Treatment of the Elderly", Age and Aging, 11, 235-243.
- Levin, E., Sinclair, I. and Gorbach, P. (1983), "The Supporters of Confused Elderly Persons at Home", National Institute for Social Work, London.
- Levin, E., Sinclair, I. and Gorbach, P. (1989), Families, Services and Confusion in Old Age, Gower, Aldershot.
- Levy, R. and Post, F. (1982), The Psychiatry of Late Life, Blackwell Scientific Publications, Oxford.
- Lewin, K. (1935), Dynamic Theory of Personality, McGraw-Hill, New York.
- Lieberman, M. (1961), "Relationship of Mortality Rates to Entrance to a Home for the Aged", Geriatrics, 16, 515-19.
- Lieberman, M. (1974), "Relocation Research and Social Policy" in J. Gubrium (ed.), Late Life, Communities and Environmental Policy, Charles C. Thompson, Springfield.

- Lipman, A. (1968), "A socio-architectural view of life in 3 homes for old people", Gerontologica Clinica, 10, 88-101.
- Lipman, A. (1971), Professional ideology: 'community' and 'total' architecture, ART 1 (3), April, pp. 39-49.
- Lipman, A. (c.1983), "Schematic Route Diagrams", unpublished paper.
- Lipman, A. and Harris, H. (1980), "Environmental Psychology - a Sterile Research Enterprise?", Built Environment, 6, (1), pp. 68-74.
- Lipman, A. and Slater, R. (1976), "Building high to avoid confusing the elderly confused", Health and Social Services Journal, 84 (4507), September 11, pp. 1634-1653.
- Lipman, A. and Slater, R. (1977a), "Homes for old people: towards a positive environment", The Gerontologist, 17, 146-56.
- Lipman, A. and Slater, R. (1977b), "Status and Spatial Appropriation in Eight Homes for Old People", The Gerontologist, 17, 250-255.
- Lipman, A., Slater, R. and Harris, H. (1979), "The quality of verbal interaction in homes for old people", Gerontology, 25, 275-84.
- Lowenthal, M. (1965), "Antecedents of Isolation and Mental Illness in Old Age", Archives of General Psychiatry, 12, 245-54.
- McCormack, D. and Whitehead, A. (1981), "The effect of providing recreational activities on the engagement levels of long stay geriatric patients", Age and Aging 10, 287-291.

MacDonald, A., Mann, A., Jenkins, R., Richard, L., Godlove, D., Rodwell, G. (1982), "An attempt to determine the impact of four types of care upon the elderly in London by the study of matched groups", Psychological Medicine, 12, 193-200.

McFadyen, M. (1984), "The measurement of engagement in the institutional elderly" in I. Hanley and J. Hodge (eds.), Psychological Approaches to the Care of the Elderly, Croom Helm, London.

McFadyen, M., Prior, T. and Kindness, K. (1982), in R. Taylor and A. Gilmore (eds.), "Engagement: an important variable in the institutional care of the elderly" in Current Trends in British Gerontology, Proceedings of the 1980 Conference of the British Society of Gerontology", Gower, Aldershot.

McLannahan, L. and Risley, T. (1974), "Design of Living Environments for Nursing Home Residents. Recruiting Attendance in Activities", The Gerontologist, 14, 236-40.

McPherson, F., Gamsu, C., Kiemle, G., Ritchie, S., Stanley, A. and Tregaskis, D. (1985), "The concurrent validity of the survey version of the Clifton Assessment Procedure for the Elderly (CAPE)", British Journal of Clinical Psychology, 24, 83-91.

MacLennan, W. (1987), "Dementia and Immobility", Age and Aging 16, 1-9.

Maddala, G. (1986), Econometrics, McGraw-Hill, New York.

Mahendra, B. (1985), "Depression and dementia: the multi-faceted relationship", Psychological Medicine 15, 227-236.

Mann, A., Graham, N. and Ashby, D. (1984), "Psychiatric illness in residential homes for the elderly: a survey in one London Borough" Age and Aging, 13, 257-256.

Markson, E. and Cumming, J. (1974), "Social consequences of physical impairments in an ageing population", The Gerontologist, 9, 39-46.

Mathematical Institute, University of Kent (1982), "An approach to assessing the needs of the elderly", Social Services Research No 2, University of Kent at Canterbury.

Meacher, M. (1972), Taken for a Ride, Longman, London.

Medical Research Council (1987), "Report from the MRC Alzheimers Disease Workshop", Medical Research Council, London.

Melman, K. (1971), "Predictable Drug Reactions: Causes and Cures", New England Journal of Medicine, 284 (24), 1361-8

Meteyard, B. (1985), "When a Home is not a Home?", Community Care, 584, 24/10/85, 20-23.

Millard, P. and Smith, C. (1981), "Personal belongings - a positive effect?", The Gerontologist, 21 (1), pp. 85-90.

Miller, E. (1971), "On the nature of memory disorder in pre-senile dementia", Neuropsychologia, 10, 133-6.

Miller, E. (1973), "Short Term and Long Term Memory in pre-senile dementia", Psychological Medicine, 3, 221-4.

Miller, E. (1977a), Abnormal Ageing: The Psychology of Senile and Pre-senile Dementia, John Wiley, London.

- Miller, E. (1977b) "A note on visual information processing in senile dementia"
British Journal of Social and Clinical Psychology, 16, pp. 99-100.
- Miller, A. (1985), "A study of dependency of elderly patients in wards using
different methods of nursing care", Age and Ageing, 14, 132-138.
- Ministry of Health (1955), Circular 3/55, HMSO, London.
- Ministry of Health (1962), "Local Authority Building Note No 2: Residential
Accommodation for Elderly People", HMSO, London.
- Ministry of Health (1973), "Local Authority Building Note No 2: Revision.
Residential Accommodation for Elderly People", HMSO, London.
- Monsour, N , Robb, S. (1982), "Wandering behaviour in old age: a Psychosocial
Study", Social Work, 27, 411-416.
- Moos, R. (1972), "British Psychiatric Ward Treatment Environments", The British
Journal of Psychiatry, 120, 559, June, pp. 635-43.
- Moos, R. (1974), Evaluating Treatment Environments. A Social Ecological Approach,
John Wiley, New York.
- Moos, R. (1975), "Evaluating and Changing Community Settings" Paper presented to
American Psychological Association, Chicago.
- Moos, R. (1976), The Human Context: Environmental Determinants of Behaviour, John
Wiley, New York.
- Moos, R. (1980), "Evaluating the Environments of Residential Care Settings",
International Journal of Therapeutic Communities, 114, 211-225.

Moos, R., Gauvain, M., Lemke, S., Max, W., Mehren, B. (1979), "Assessing the social environments of sheltered care settings", The Gerontologist 19 (1), 74-82.

Moos, R. and Igra, A. (1980), "Determinants of the Social Environments of Sheltered Care Settings", Journal of Health and Social Behavior, 21 (March), 88-98.

Moos, R. and Lemke, S. (1980), "Assessing the Physical and Architectural Features of Sheltered Care Settings", Journal of Gerontology, 35 (4), 571-583.

Moos, R. and Lemke, S. (1984), "Multiphasic Environmental Assessment Procedure (MEAP) Manual", Social Ecology Laboratory, Stanford University, Palo Alto, California.

Moos, R. and Lemke, S. (1985), "Specialised Living Environments for Older People" in J. Birren and K. Schaie (eds.), Handbook of The Psychology of Aging, Van Nostrand Reinhold, New York.

Moos, R., Lemke, S. and David, T. (1987), "Priorities for design and management in residential settings for the elderly" in V. Regnier and J. Pynoos (eds.), Housing the Aged: Design Directives and Policy Considerations, New York: Elsevier.

Morgan, R. (1965), "Note on the Psychopathology of Senility: Senescent Defence Against the Threat of Death", Psychological Reports, 17, 305-6.

Moscovitch, M. (1982), "A Neuropsychological Approach to Perception and Memory in Normal and Pathological Aging" in F. Cruik and S. Trehub, (eds.), Aging and Cognitive Processes, Plenum Press, New York, 55-78.

Mueller, D. and Atlas, L. (1972), "Resocialization of regressed elderly residents: a behavioural management approach", Journal of Gerontology, 27, 390-92.

Munn, A. (1984), "Guiding them through the maze", Community Care, 541, 6/12/84, pp. 21-22.

Murphy, E. (1983), "The Prognosis of Depression in Old Age", British Journal of Psychiatry, 142, 111-119.

Murray, H. (1938), Exploration in Personality, Oxford University Press, New York.

Mushet, G. (1985), "Coping with Chronic Dementia", Health and Social Services Journal, 4978, 12/12/85, 1566-1567.

Neill, J., Sinclair, I., Gorbach, P. and Williams, J. (1988), A Need for Care? Elderly Applicants for Local Authority Homes, Gower, Aldershot.

Nelson, M. and Paluk, R. (1980), "Territorial markings, self concept and mental status of the institutionalized elderly", The Gerontologist, 20 (1), pp. 96-98.

Netten, A. (1989), "The Effect of Design of Residential Homes in Creating Dependency Among Confused Elderly Residents: A Study of Elderly Demented Residents and their Ability to Find their Way Around Homes for the Elderly", International Journal of Geriatric Psychiatry, 4, 143-153.

Neugarten, B. (1964), "A Developmental View of Adult Personality" in Relations of Development and Ageing, J. Binne (ed.), Charles C. Thomas, Springfield, Illinois.

Newman, O. (1972), "Defensible Space", Architectural Press, London.

Newroth, A. and Newroth, S. (1980), "Coping with Alzheimers Disease: A Growing Concern", National Institute on Mental Retardation, Downsview, Ontario.

- Nielson, J. (1962), "Geronto-psychiatric period-prevalance investigation in a geographically delimitated population", Acta Psychiatrica Scandinavica, 38, 307-330.
- Nolen, N. (1987), "Activity Programming for Withdrawn Confused Residents", Activities, Adaptation and Aging, 9 (4), 45-55.
- Norman, A. (1984), Bricks and Mortals: design and lifestyle in old peoples homes, Report No. 4, Centre for Policy on Ageing, London.
- Norman, A. (1987), Severe Dementia, the provision of long stay care, Report No. 7., Centre for Policy on Ageing, London.
- Norris, A. and Abu El Eileh, M. (1982), "Reminiscence Groups", Nursing Times, 78, 1368-9.
- Nowakowski, L. (1985), "Accent capabilities in disorientation", Journal of Gerontological Nursing, 11 (9), 15-20.
- Nuffield Foundation (1947), "Old People: a Report of a Survey Committee on the Problems of Ageing and the Care of Old People, 1947", under the chairmanship of B Seebohm Rowntree, published 1980 by Nuffield Foundation.
- O'Conner, D., Pollitt, P., Hyde, J., Fellows, T., Miller, N., Brook, C., Reiss, B. and Roth, M. (1989), "The prevalance of dementia as measured by the Cambridge Mental Disorders of the Elderly Examination", Acta Psychiatrica Scandinavica, 79, 190-198.
- Office of Health Economics (1979), Dementia in Old Age, HMSO, London.

- Ohta, R. and Ohta, B. (1988), "Special Units for Alzheimer's Disease Patients Patients: A Critical Look" The Gerontologist, 28 (6), 803-808.
- Palmore, E. and Luikhert, C. (1972), "Health and social factors related to life satisfaction", Journal of Health and Social Behaviour, 13, 68-80.
- Parker, R. (1981), "Tending and Social Policy" in E. Goldberg. and S. Hatch (eds.), A New Look at the Personal Social Services, Discussion Paper No. 4, Policy Studies Institute, London.
- Pasmanick, B., Roberts, D., Lemken, P. and Krueger, D. (1957), "A survey of mental disease in an urban population. I. Prevalence by age, sex and severity of impairment", American Journal of Public Health, 47, 923-929.
- Pattie, A. (1988) "Measuring levels of disability - the Clifton Assessment Procedures for the Elderly" in Wattis, J and I. Hindmarch (eds.), Psychological Assessment of the Elderly, Churchill Livingstone, Edinburgh.
- Pattie, A. and Gilleard, C. (1975), "A brief psychogeriatric assessment schedule - validation against psychiatric diagnosis and discharge from hospital", British Journal of Psychiatry, 127, pp. 489-493.
- Pattie, A. and Gilleard, C. (1976), "The Clifton Assessment Schedule - further validation of a psychogeriatric assessment schedule", British Journal of Psychiatry, 129, 68-72.
- Pattie, A. and Gilleard, C. (1978a), "The two year predictive validity of the Clifton Assessment Schedule and the shortened Stockton Geriatric Rating Scale" British Journal of Psychiatry, 133, 457-60.

- Pattie, A. and Gilleard, C. (1978b), "Admission and adjustment of residents in homes for the elderly", Journal of Epidemiology and Community Health, 32, 212-4.
- Pattie, A. and Gilliard, C. (1979), Manual of the Clifton Assessment Procedures for Elderly (CAPE), Hodder and Stoughton, Sevenoaks, Kent.
- Pattie, A., Gilleard, C. and Bell, J. (1979), "The Relationship of the Intellectual and Behavioural Competence of the Elderly and Future Needs from Community, Residential and Hospital Services", Research Report, Department of Clinical Psychology, Clifton Hospital, York.
- Peace, S. (1986), "The Design of Residential Homes: An Historical Perspective" in K. Judge, and I. Sinclair, (eds.), Residential Care for Elderly People, HMSO, London.
- Peace, S., Hall, J. and Hamblin, G., (1979), "The Quality of Life in Residential Care", Report No 1, Survey Research Unit, Polytechnic of North London, London.
- Peace, S., Kellaheer, L. and Willcocks, D. (1982), "A Balanced Life? A Consumer Study of Residential Life in 100 Local Authority Old People's Homes", Research Report No. 14, Survey Research Unit, Polytechnic of North London, London.
- Peace, S. and Willcocks, D. (1986), "Changing the Environment in Old People's Homes" in K. Judge and I. Sinclair (eds.), Residential Care for Elderly People, HMSO, London.
- Personal Social Services Council (PSSC) (1977), "Residential Care Reviewed", Personal Social Services Council, London.
- Persson, G. (1980), "Prevalance of mental disorders in a 70 year-old urban population", Acta Psychiatria Scand, 62, 119-139.

- Peterson, R., Knapp, T., Rosen, J. and Pither, B. (1977), "The effects of furniture arrangement on the behaviour of geriatric patients", Behaviour Therapy, 8, 464-7.
- Phillipson, C., Bernard, M., Strang, P. (eds.) (1986), Depending and interdependency in Old Age - Theoretical Perspective and Policy Alternatives, published in association with British Society of Gerontology, Croom Helm, London.
- Phillipson, C. and Strang, (1987). "Training and Education for an Ageing Society", working papers on health and older people no. 3, Health Education Council and University of Keele, Keele.
- Pincus, A. (1968), "The Definition and Measurement of the Institutional Environment in Homes for the Aged", The Gerontologist, 8 (3), 207-10.
- Pincus, A. and Wood, V (1970), "Methodological issues in measuring the environment in institutions for the aged and its impact on residents", International Journal of Ageing and Human Development, 1, 117-20.
- Policy Studies Institute (1984), Residential Care for the Elderly: Present Problems and Future Issues, Discussion Paper 8, PSI, London.
- Popper, K. (1972), Objective Knowledge: An Evolutionary Approach, Clarendon Press, Oxford, England.
- Preston, G. (1986), "Dementia in Elderly Adults: prevalence and institutionalisation" Journal of Gerontology, 41 (2), 261-267.
- Rabins, P., Merchant, A. and Nestadt, G. (1984), "Criteria for diagnosing reversible

- dementia caused by depression: validation by 2 year follow up". British Journal of Psychiatry, 144, May, 488-492.
- Rapoport, A. (1982), The Meaning of the Built Environment: A Non-verbal Communication Approach, Sage, Beverly Hills, California.
- Ransen, D. (1981), "Long term effects of two interventions with the aged: an ecological analysis" Journal of Applied Developmental Psychology, Spring, 2 (1), 13-27.
- Reichard, S., Livson, F. and Peterson, P. (1962), Aging and Personality, Wiley, New York.
- Reifler, B., Cox, G. and Hanley, R. (1981), "Problems of mentally ill elderly as perceived by patients, families and clinicians", The Gerontologist, 21 (2), 165-170.
- Retsinas, J. and Garrity, P. (1985), "Nursing Home Friendships", The Gerontologist 25 (4), 376-381.
- Robinson, B., Anderson, G., Cohen, F., Gazdik, W., Karpel, L., Miller, A., Stein, J. (1980), SIR Users' Manual: Version 2, SIR Inc. USA.
- Rodstein, M., Savitsky, E., Starkaman, R. (1976), "Initial Adjustment to a Long Term Care Institution: Medical and Behavioural Aspects", Journal of American Geriatrics Society, 24, 65-71.
- Roth, M. (1955), "The Natural History of Mental Disorder in Old Age", Journal of Mental Science, 101, 281-301.

- Rothwell, N., Britton, P. and Woods, R. (1983), "The Effects of Group Living in a Residential Home for the Elderly", British Journal of Social Work, 13 (6), 639-643.
- Sands, D. and Suzuki, T. (1983), "Adult Day Care for Alzheimer's Patients and their Families", The Gerontologist, 23 (1), pp. 21-23.
- Sanford, J. (1975), "Tolerance of Debility in Elderly Dependents by Supporters at Home; Its Significance for Hospital Practice", British Medical Journal, 3, 471-473.
- Savage, R., Britton, P., Bolton, N (1973), Intellectual Functioning in the Aged, Methuen, London.
- Savage, R., Gaber, L., Britton, P., Bolton, N., Cooper, A. (1977), Personality and Adjustment in the Aged, Academic Press, London.
- Schooler, K. (1970), "Effect of Environment on Morale", The Gerontologist, 10, 194-7.
- Schwab, M., Rader, J. and Dean, J. (1985), "Relieving the anxiety and fear in dementia", Journal of Gerontological Nursing, 11 (5), 8-15.
- Scott Long, J. (1983a), Confirmatory Factor Analysis, Sage Publications, London and Beverly Hills, California.
- Scott Long, J. (1983b), "Covariance Structure Models in An Introduction to LISREL Sage Publications.
- Scottish Action on Dementia (1986), "Principles Relating to the Design of Residential Environments for Dementia Sufferers", Discussion Paper.

- Shanas, E., Townsend, P., Wedderburn, D., Henning, F., Milhoj, P. and Stenhower, J. (1968), Old People in Three Industrial Societies, Routledge and Kegan Paul, London.
- Shaw, S. and Opit, L. (1976), "Need for supervision in the elderly receiving long term prescribed medication", British Medical Journal, 1 (28), 505-7.
- Sinclair, I. (1988), "Residential Care for Elderly People" in I. Sinclair (ed.) Residential Care, The Research Reviewed, NISW, London.
- Simpson, A. (1971), "The Success of Home Close: A new design in residential homes for the elderly", Cambridge and Isle of Ely Social Services Department.
- Sinnott, J. (1977), "Sex Role Inconstancy, Biology and Successful Aging: A Dialectical Model", The Gerontologist, 17, 459-63.
- Slater, R. (1989), "Inducing change in residential care: an Australian attempt", Paper given at British Society of Gerontology conference, University of Nottingham.
- Snyder, L., Rupprecht, P., Pyrek, J., Brekhus, S., Moss, T. (1978), "Wandering", The Gerontologist, 18, (3) 272-280
- Social Services Inspectorate (1985), "Inspection of Local Authority Care for Elderly Mentally Disordered People", DHSS, London.
- Somner, R. (1969), Personal Space. The Behavioural Basis of Design, Prentice Hall, Englewood Cliffs, New Jersey.
- Somner, R., Ross, H. (1958), "Social Interaction on a geriatric ward", International Journal of Social Psychiatry, 4, 128-33.

Sperbeck, D. and Whitbourne, S. (1981), "Dependency in the institutional setting: a behavioural training program for geriatric staff", The Gerontologist, 21 (3), pp. 268-275.

SPSS Inc (1988), SPSS-X User's Guide, 3rd Edition, SPSS Inc, McGraw Hill, New York.

Stephens, M. and Willems, E. (1979), "Every day behaviour of older persons in institutional housing: some implications for design", Environmental Design Research Association, No. 10, 344-348.

Stern, G. (1970), People in Context, Wiley, New York.

Stilwell, J., Hassall, C. and Rose, S. (1984), "Changing demands made by senile dementia on the National Health Service" Journal of Epidemiology and Community Health, 38, 131-133.

Tabactinick, B. and Fidell, L. (1983), Using Multivariate Statistics, Harper and Row, New York.

Thomas, N. (1981), "Design, management and resident dependency in old people's homes" in E. Goldberg and N. Connelly (eds.), Evaluative Research in Social Care, Heinemann Educational Books Ltd., London.

Thompson E.G and Eastwood M.R. (1981), "Survivorship and Senile Dementia" Age and Aging, 10 (1), 29-32.

Tinsley, H., Tealf, J., Colbs, S., Kaufman, N. (1985), "A system of classifying leisure activities in terms of the psychological benefits of participation reported by older persons", Journal of Gerontology, 40 (2), 172-178.

- Tobin, S. and Lieberman, M. (1976), Last Home for the Aged, Jossey-Bass, San Francisco and London.
- Townsend, J. and Kimbell, A. (1975), "Caring regimes in elderly persons' homes", Health and Social Service Journal, 11/10/75.
- Townsend, P. (1981), "The structured dependency of the elderly", Ageing and Society, 1 (1), 5-28.
- Townsend, P. (1962), The Last Refuge, Routledge and Kegan Paul, London.
- Vardon, V. and Blessed, G. (1986), "Confusion Ratings and Abbreviated Mental Test Performance: a Comparison", Age and Ageing 15, 139-144.
- Verwoerd, A. (1981), Clinical Geropsychiatry, Williams and Wilkins, London.
- Van Amdovoort-Jones, G. (1985), "Validation therapy: A companion to reality orientation", The Canadian Nurse, March.
- Victor, C. (1987), Old Age in Modern Society: a textbook of Social Gerontology, Croom Helm, London.
- Wade, B., Sawyer, L. and Bell, J. (1983), "Dependency with Dignity", Occasional Papers in Social Administration No 68, Bedford Square Press, London.
- Wade, B., Finlagson, J., Bell, J., Bowling, A., Bleathman, C., Gilleard, C., Morgan, K., Cole, P., Hammond, M., Eastman, M. (1986), "Drug Use in Residential Settings" in K. Judge and I. Sinclair (eds.), Residential Care for Elderly People, HMSO, London.

Wagner, G. (1988), "Residential Care, a Positive Choice", Report of the Independent Review of Residential Care, National Institute of Social Work, HMSO, London.

Warrington, E. and Sanders, H. (1971), "The Fate of Old Memories", Quarterly Journal of Experimental Psychology, 24, 432-42.

Weihstock, C. and Bennet, R. (1971), "From 'waiting on the list' to becoming a 'newcomer' and 'old timer' in a home for the aged: Two studies of socialization and its impact upon cognitive functioning", Aging and Human Development, 2, 46-58

Weingartner, H., Kaye, W., Smallberg, S., Ebert, M., Gillin, J. and Sitaram, N. (1981), "Memory Failures in Dementia", Journal of Abnormal Psychology, 90, 187-96.

Weschler, D. (1955), Manual for the Weschler Adult Intelligence Scale, The Psychological Corporation, New York.

West, P., Illsley, R. and Kehman, A. (1984), "Public preferences for the care of dependency groups", Social Science and Medicine, 18 (4), 287-295.

Wilkin, D. and Hughes, B. (1987), "Residential Care of Elderly People: the Consumers' View", Aging and Society, 7 (2), pp. 175-201.

Wilkin, D., Jolley, D. (1979), "Behavioural Problems Among Old People in Geriatric Wards, Psychogeriatric Wards and Residential Homes 1976-1978". Research Report, Psychogeriatric Unit, University Hospital of South Manchester.

Wilkin, D., Mashiah, R. and Jolley, D. (1978), "Changes in behavioural characteristics of elderly population of local authority homes and long stay hospital wards, 1976-7", British Medical Journal, 14/11/78, 1274-6.

- Willcock, G. (1988), "Recent Research into Dementia", Age and Aging, 17 (2), 13-86.
- Willcocks, D. (1986), "Residential Homes as Community Care: A Future Place for Old People's Homes in the Community They Serve" in K. Judge and I. Sinclair (eds.), Residential Care for Elderly People, HMSO, London.
- Willcocks, D., Peace, S., Kellaheer, L. with Ring, A. (1982), "The Residential Life of Old People: A study of 100 local authority homes, vol 1", Research Report No 12, Survey Research Unit, Polytechnic of North London.
- Willcocks, D, Peace, S. and Kellaheer, L. (1987), Private Lives in Public Places, Tavistock, London.
- Williams, R., Reeve, W., Ivisa, D. and Kavanagh, D. (1987), "Use of Environmental Manipulation and Modified Informal Reality Orientation with Institutionalised Confused Elderly Subjects: a Replication", Age and Aging, 16, 315-318.
- Wilson, R., Kaszniak, A., and Fox, J. (1981), "Remote memory in senile dementia", Cortex, 17, 41-8.
- Wilson, R., Bacon, L., Fox, J. (1983), "Primary memory and secondary memory in dementia of the Alzheimer type", Journal of Clinical Neuropsychology, 5, 97-104.
- Wittels, I. and Botwinick, J. (1974), "Survival in Relocation", Journal of Gerontology 29, 440-3.
- Wohlwill, J. (1966), "The physical environment: a problem for a psychology of stimulation", Journal of Social Issues, 22 (4), 29-38.
- Wolk, S. and Telleen, S. (1976), "Psychological and Social Correlates of Life

Satisfaction as a Function of Residential Constraint", Journal of Gerontology, 31 (1), 89-98.

Woods, R. (1979), "Reality Orientation and Staff Attention: A Controlled Study", British Journal of Psychiatry, 134, 502-7.

Woods, R. (1981), "Continuous reaction time in senile dementia", paper presented at 12th International Conference of Gerontology, Hamburg.

Woods, R. (1989), Alzheimer's Disease: Coping with a Living Death, Souvenir Press, London.

Woods, R. (1982), "The Psychology of Ageing: assessment of defects and their management" in R. Levy and F. Post (eds.), The Psychiatry of Late Life, Blackwell Scientific Publications, Oxford

Woods, R. and Britton, P. (1977), "Psychological approaches to the treatment of the elderly", Age and Aging, 6, 104-112.

Woods, R. and Britton, P. (1985), Clinical Psychology with the Elderly, Croom Helm Ltd., London

Woolfensberger, W. (1977), "The principles of normalisation in human services", National Institute of Mental Retardation, Toronto.

Wyvern Partnership (1979), "An Evaluation of the Group Unit Design for Old People's Homes", Wyvern Partnership/Social Services Unit, University of Birmingham, Birmingham.

Zarit, S., Zarit, J. and Reever, K. (1982), "Memory training for severe memory loss:

effects on senile dementia patients and their families", The Gerontologist, 22
(4), pp. 373-377.