USE OF THESES

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THE SOCIAL ECOLOGY OF STUDENT RESIDENCES

A thesis submitted for the degree of Doctor of Philosophy of the Australian National University.

by

MICHAEL ION BOSSLEY

All work described in this thesis has been undertaken solely by the author.

M. I. BOSSLEY

M. I. BOSSLEY
ACKNOWLEDGEMENTS

I should like to express my sincere thanks to Dr. R. Darroch and Dr. S. Boyden for their many helpful comments and criticisms during the planning and implementation of the research described in this thesis.

My wife provided enormous assistance both emotionally and in the drudgery of coding responses and typing drafts. Without her unfailing support this thesis would never have been completed.

Finally I wish to thank the hundreds of students who shared with me their experience of residential life. Without their cooperation this research would have been impossible.
A critical review of the crowding literature is presented and a new, multidimensional variant of the density mediated phenomenological model is derived. It is concluded that in terms of psychological stress the most significant dimension is likely to be social crowding or excessive exposure to others for prolonged periods.

A potential source of information concerning the parameters of the density mediation may exist in the notion of privacy. An extensive multidisciplinary examination of the privacy literature was undertaken and this provided the basis for a new multidimensional perspective on the psychology of privacy. This perspective emphasises the importance of subcultural and situational factors in the achievement of privacy and suggests that valid research into the relationship between privacy and crowding must be carried out in natural settings.

An exploratory study set in student residences was undertaken. This study revealed a number of interesting psychosocial differences between the various types of student residences but failed to discriminate between them on a variety of measures of privacy. Analysis of the data suggested that the psychosocial dynamics of the residences were too poorly understood to permit an adequate study of privacy to be mounted and it was thus decided to further explore the general characteristics of residence life. This further study consisted of an in-depth, longitudinal study of two small residences attached to a non-metropolitan tertiary institution.
and a larger, cross-sectional survey of two of the residences studied in the exploratory study.

The principal findings from these studies are that:

(1) time is a very important variable in the complex psychosocial system that constitutes the residence; and

(2) that different environments influence the interplay of psychosocial characteristics, social behaviour and group structure variables in different ways.

Questions concerning the more subtle aspects of residence life remain but it appears that the systems model originally derived from the exploratory study has general applicability. The relevance of this research for present conceptions of privacy and crowding is discussed. The research findings also have implications for the design and management of student residences and these implications are articulated.
CONTENTS

Chapter 1  Introduction
Chapter 2  The Consequences of Crowding: Literature Review
Chapter 3  Privacy as a Component of the Crowding Experience: A Multidisciplinary Analysis of the Literature
Chapter 4  Crowding, Privacy and the Social Dynamics of Student Residences: An Exploratory Study
Chapter 5  Partial Replication of the Exploratory Study of Toad Hall and Burton Hall
Chapter 6  A Longitudinal Study of Residence Hall Social Dynamics
Chapter 7  Conclusions
Bibliography

Appendix 1. Toad Hall Questionnaire. Exploratory Study.
2. Burton Hall Questionnaire. Exploratory Study.
4. Self Disclosure Scale.
7. Correlation Matrix Analysis.
8. Toad Hall Questionnaire. Follow Up Study.
10. McRae/Clarke Questionnaire.
11. McRae/Clarke Exit Interview Schedule.
12. Design implications for Student Residences.
<table>
<thead>
<tr>
<th>FIGURES</th>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagrammatic</td>
<td>76</td>
<td>Representation of Relationship Between Toad Hall 5 and 10 Person Suites.</td>
</tr>
<tr>
<td>Representation of</td>
<td>79</td>
<td>10 Person Suite: Toad Hall.</td>
</tr>
<tr>
<td>Dormitory Wing:</td>
<td>82</td>
<td>Toad Hall.</td>
</tr>
<tr>
<td>13 Person Suite:</td>
<td>85</td>
<td>C.C.A.E.</td>
</tr>
<tr>
<td>Example of</td>
<td>109</td>
<td>Sociogram: Toad Hall 10 Person Suite.</td>
</tr>
<tr>
<td>Sociogram:</td>
<td>110</td>
<td>Toad Hall 12 Person Suite.</td>
</tr>
<tr>
<td>Schematic</td>
<td>122</td>
<td>Representation of Conceptual Model.</td>
</tr>
<tr>
<td>Schematic</td>
<td>154</td>
<td>Representation of Conceptual Model: Toad Hall.</td>
</tr>
<tr>
<td>Schematic</td>
<td>155</td>
<td>Representation of Conceptual Model: Burton Hall.</td>
</tr>
<tr>
<td>Schematic</td>
<td>162</td>
<td>Representation of one McRae House Suite.</td>
</tr>
<tr>
<td>Schematic</td>
<td>163</td>
<td>Representation of Clarke House Layout.</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

Interest in the psychology of crowding has increased in recent years. This interest is probably a function of many variables but two seem particularly salient: First, the popular media argue (often erroneously and at best simplistically) that there is an increasing level of social malaise in our society and frequently associates this malaise with aspects of urban existence. A potential causal link between the urban lifestyle and social malaise is the notion of "crowding". The term crowding is tinged with pejorative overtones but the nature of its negative consequences are seldom specified. Social scientists are now exploring the many dimensions of the concept of crowding in an attempt to establish the validity of hypotheses postulating relationships between it and various psychological and social effects. Leading figures in the field include Altman (e.g., 1975); Esser (e.g., 1972); Freedman (e.g., 1975); and Stokols (e.g., 1972).

The second issue stimulating research into crowding seems to be the "population explosion". Gross increases in global population inevitably mean a reduction in the available space per person. The relationship between this form of crowding and psychosocial consequences is more tenuous than in the urbanization paradigm. However there is an established body of literature (e.g., Calhoun, 1966; Marsden, 1972) on the reaction of non-human species to such "global" crowding and this has provided the conceptual and empirical basis of many recent studies undertaken with humans.
The disciplinary allegiance of modern crowding researchers tends to be either psychology or sociology, although anthropologists, geographers and other social and natural scientists are becoming increasingly involved. This multidisciplinary concern with crowding has helped soften or even obliterate traditional disciplinary boundaries and helped promote the acceptance of interdisciplinary approaches. One of the more vigorous of these approaches is environmental psychology. Recent significant contributions to the development of environmental psychology include Barker (1968); Canter and Lee (1974); Craik (1970); Proshansky, Ittelson and Rivlin (1970) and Wohlwill and Carson (1972).

Environmental psychology's origins can be traced back along a number of radiating branches. Lewin's field theory (e.g., 1936) provides one of its more important conceptual bases, especially as elaborated in the work of Roger Barker (e.g., 1968). A less obvious, but nevertheless powerful, conceptual force assisting in the genesis of environmental psychology has been the operant conditioning approach spearheaded by Skinner (e.g., 1938). Operant conditioning, being based essentially on the notion of reinforcement contingencies, is environmentally oriented, albeit to very circumscribed components of the total environment.

Another antecedent to the emergence of environmental psychology can be found in the social awareness emerging in academia (e.g., Bartz, 1970; Heimstra and McDonald, 1973). This awareness has often taken the form of applied studies into various disadvantaged sectors of the community in an attempt to delineate the inadequacies of the environments experienced by such people. These studies
typically concentrate on the social environment (e.g., Gans, 1968; Korten, Cook and Lacey 1970) although important studies on the effects of the physical environment have also been published (e.g., Young and Wilmott, 1962).

The reliance upon animal studies in the early crowding research has produced a strong and persistent ethological and ecological bias in much of environmental psychology. The conference proceedings edited by Esser (1971) represent the most obvious watershed of this trend. The ethological perspective continues to have considerable influence methodologically (e.g., Willems and Raush, 1969) and conceptually, the latter input primarily from the journal Man-Environment Systems edited by Esser. The primary conceptual contribution of the ecological perspective is that of viewing the natural world as a dynamic and complex system. The simple linear cause and effect model which still dominates most of experimental psychology is thus replaced by an interactive feedback model. This provides a certain intuitive validity for real world studies but the methodology for its full implementation remains poorly developed. Most environmental psychology studies to date have paid lip service to the ecological model but few have been able to apply it in a sophisticated and complex manner.

Probably the most dominant force to date in the development of environmental psychology comes from social scientists acting in a consultative role to architects and other designers. Influential workers in this genre include Hall (1966); Sommer, (1969, 1972, 1974) and the personnel in the City University of New York Environmental Psychology Program (e.g. Proshansky, Ittelson and
Rivlin, 1970) although numerous earlier seminal papers exist (e.g., Festinger, 1951; Plant, 1930).

Regrettably a certain parochialism has emerged in environmental psychology in that there is little interchange with developments in general psychology, sociology or other social and natural sciences. Thus in recent research into crowding few serious attempts have been made to integrate the findings of the group dynamics or general social psychological literature. (Note that Altman and Taylor (1973) represent a notable exception to this pattern.) One possible reason for this is the tendency for environmental psychology to concentrate somewhat myopically on the physical environment at the expense of other variables acting on the individual. The "social ecology" perspective (e.g., Binder, Stokols and Catalano, 1975; Moos and Insel, 1974) which is emerging shows considerable promise in avoiding this problem. Social ecology, by concentrating on the "milieu" instead of the "environment" keeps attention focussed on the total environment rather than simply the physical environment. The social environment, administrative climate, group morale, and various other non-physical variables, together with the physical environment, are conceived of as comprising the milieu. This wider scope is partly based on a conceptual allegiance to the principles of classical ecology and partly due to the problem-oriented approach favoured by its proponents.

Despite the extensive empirical, impressionistic and theoretical literature on crowding now available there seems to have been little progress toward understanding the phenomena involved. For example, there is considerable conflicting evidence
even on the basic issue of whether crowding produces negative consequences. One possible reason for this confusion may be the inadequacy of current conceptualizations of crowding. Conceptualizations which are either too narrow and/or overly simplistic will almost certainly produce a poor data base for theory construction. The following chapter employs a very general conceptualization of crowding ("the presence of unwanted others") in order to compile a review of the crowding literature with the widest possible scope. This review was then used to construct a new model of crowding which was subjected to experimental investigation.

An exploratory study set in student residences was undertaken and is described in Chapter 4. The principal feature of this study was the failure to discriminate between the two residences on the main privacy measure despite strong indications of major psychosocial differences in the populations of the two residences. It was concluded that failure of the privacy data to discriminate between the two residences was a function of an inadequate understanding of the social dynamics occurring in them. The orientation of the research was consequently changed in an attempt to gain a better understanding of the basic social processes in the two residences.

This change in the orientation of the research from a study of the relationship between crowding and privacy in a natural environment to a study of that environment per se is indicated by the title of this thesis. This change of orientation is congruent with the principles of social ecology outlined earlier. The total dynamics represented by a milieu must be documented before components of the system can be comprehensively understood.
It would have been desirable to undertake this broader social ecological study and then return to the original aim of this thesis, the study of privacy and crowding, armed with a comprehensive knowledge of the experimental setting. This was impossible for a variety of personal and situational reasons which culminated in the author moving to another institution.

The literature and exploratory study suggested that an important component in the social ecology of student residences might be time. The presence of two small student residences at this new institution permitted a longitudinal study to be mounted. This study was designed to complement the cross-sectional study undertaken on the Canberra residences.

The literature review of crowding and privacy undertaken for this thesis was commenced in early 1973 and completed about a year later. The basic model used to guide the later research was constructed according to this literature and refined according to data obtained in the exploratory study. This whole process extended over the years 1973 to 1976 and meant that important work on privacy and crowding published since 1973 was difficult to incorporate into this thesis. That is, the conceptual model used to guide this research was based on literature surveyed as at 1973 and it would have been historically inaccurate and academically dishonest to attempt to modify the model at the time of writing this thesis.

Fortunately research published since 1973 has not contradicted the essential features of the model derived at that time. The hypothesised relationship between privacy and crowding has been affirmed in an excellent extended analysis by Altman (1975). Although there is substantial overlap between the author's model
and Altman's there is one important difference. Altman's model of crowding is based primarily on social invasions and is thus essentially unidimensional. The author's multidimensional conception includes social crowding and two forms of spatial crowding. The author's model represents a synthesis of Stokols' (1972) conception with that of Altman's even though it was derived before the publication of Altman's (1975) work.

It should be noted that both Altman and Stokols as well as other writers have made contributions since 1973 not foreshadowed by the author's model. However all of these contributions may be regarded as refinements of the model. For example Stokols' (1976) idea of primary and secondary environments and personal and neutral thwartings are essentially definitions of the broad environmental and social parameters of the model.

Altman's view of privacy as a dialectical phenomenon and his suggestion that some coping mechanisms are so demanding that their very implementation generates stress are both interesting suggestions which can be accommodated by the author's model.

Valins and Baum (1973) studied the experience of crowding within student residences and concluded that social factors accounted for most of the crowding effect detected. This finding is consistent with Altman's (1975) model and offers direct empirical support for one aspect of the author's model. The Valins and Baum paper was not available at the time this model was constructed.

In summary it can be argued that, although the model used to guide the research described in the following chapters was devised without benefit of recent theoretical and empirical advances, the resulting research is in no way incompatible with contemporary work in the area.
CHAPTER 2

THE CONSEQUENCES OF CROWDING: LITERATURE REVIEW

This review will include both human and animal crowding research. Animal studies are important in the study of human crowding partly for historical reasons and partly because present ethical guidelines permit their use in experiments in which it would not be possible to use human subjects.

The surge of interest in crowding in the social sciences began in the mid 1960's and at that time the bulk of the research used animal subjects. Inevitably the behaviour of various species under a variety of crowding conditions was extrapolated to humans. If this exercise were nothing other than an interim phenomenon which was discarded as soon as human studies became available it would probably have but slight relevance for a present day examination of crowding. However the impact of this early dependence on animal studies is still clearly discernable in the contemporary human literature and necessitates its inclusion in the review.

Curiously, the use of non-human species in experimental studies of crowding appears to have rapidly declined and recent animal studies are now rarely mentioned in the social science literature dealing with crowding. This may be partly a consequence of the severe criticisms levelled at the early animal crowding literature on the basis of cavalier behavioural extrapolation across species. It may also be partly a function of an increasing sophistication which engenders avoidance of terms such as crowding in favour of less colorful terms.
Animal Studies

There appear to be two major lines leading to the recent study of animal crowding. These are the population ecology approach and the spacing behaviour (territoriality) approach.

The population ecology approach. Beginning in about 1925 Pearl and his coworkers spent many years studying the population dynamics of artificially confined samples of Drosophilla (the fruit fly) and Tribolium (the flour weevil). The parameters of population growth under a wide variety of conditions were investigated and the generality of the "logistic curve" established. The logistic curve described the typical S shaped curve relating total population to time. Pearl discovered, in essence, that even when food was not a limiting factor, population growth slowed down and eventually ceased.

A considerable literature now exists on the application of the logistic curve to both laboratory and natural populations. Although most of this literature is generally supportive of the logistic curve the heuristic value of the concept has begun to appear increasingly limited.

Probably the major shortcoming of the logistic approach was exposed by Lack (1954) who argued that the principle problem for population biology was not the establishment phase (i.e., the S) of the population but its maintenance at some optimal level. Drawing on a wide variety of population material from various species (particularly birds) Lack noted that although fluctuations occur there is nevertheless a definite tendency for the population
numbers to return to a stable level. This phenomenon was also investigated by Allee, Emerson, Park and Schmidt (1949) in more labile populations (e.g., the snowshoe hare) and by other ecologically oriented workers. The consequence of this shift of attention from growth curves to established populations was an emphasis on the importance of limiting factors in natural populations: factors such as predation, disease and lack of food. This latter factor was widely considered to be the most important in natural populations.

In 1962 V.C. Wynne-Edwards published his monumental "Animal Dispersion in Relation to Social Behaviour" and significantly affected modern studies of animal populations. Wynne-Edwards' central thesis, meticulously substantiated by an abundance of data from a diversity of species, is elegantly simple. It is based on the observation that if food were the limiting factor in natural populations one would expect to find the bulk of the individuals making up that population in a state of partial starvation. This is patently not the case in virtually all species living in relatively stable natural ecosystems. Wynne-Edwards argued that there must be another limiting factor, namely social conventions, and that these must work to limit population levels before the food supply is depleted. These social conventions were termed "density dependent brakes" and consist mainly of territorial and dominance heirarchy types of social arrangements.

Some evidence is also available concerning the existence of more directly acting forms of density dependent brakes. These mainly take the form of (hypothesised) psychological reactions to increased population density operating via an intervening construct.
such as stress. The best known of these studies concerns a population of Sika deer confined to an island in the St. Lawrence estuary (Christian, Flyger and Davis, 1960). The deer were introduced to the island in 1916 and their numbers gradually increased until, for no apparent reason, large numbers began to die. In the absence of disease, parasites and food and water shortages the authors concluded that excessive population density had produced stress, exemplified particularly by adrenal hyperactivity, and that the deaths occurred as a direct consequence of this stress.

The undoubted classic of the animal crowding literature is Calhoun's publication relating to what he calls "behavioural sinks" (Calhoun, 1962). This study involved confining freely breeding rats in finite "universes" containing unlimited amounts of food and water. As the population density increased "behavioural pathologies" began to appear. At the time the experiment was terminated these pathologies included increased aggression, homosexuality, disrupted care of young, and even a kind of hippy drop-out which Calhoun termed "beautiful ones". The parallels to the behaviours perturbing modern urban man are so obvious it is not surprising that the study has become well known.

The Spacing Behaviour Approach

Ardrey (1966) and Lorenz (1966) in two very popular and influential though often criticised books drew on the rapidly accumulating knowledge concerning animal spacing behaviour and argued that much of human aggressive behaviour (and some other antisocial behaviours) could be attributed to territorial violations.
The concept of territoriality has a long history in ornithology but Howard (1920) is usually recognised as the first major worker in the area. In its classical form the concept refers to a geographical area defended by a male (and possibly his mate) against conspecific intruders. A bewildering array of variations on this theme have now been documented in both birds and other species, including mammals (Carpenter, 1958). This variety has caused one major worker in the area to offer the following as a definition of territoriality:

"a non random distribution of animals in space, arising from the spacing behaviour of animals to neighbours rather than from discontinuities in the environment" (McBride, 1969 p.7).

Another researcher has even speculated that it may be impossible to define territoriality and implies that the concept lacks validity (Kaufmann, 1971).

The existence of such definitional problems and the hazards of intraspecific extrapolation have driven most modern crowding workers away from animal studies. This shift in focus, while understandable given the problems outlined above, may have proceeded too far. Continuing development in general ecology and in particular the study of free ranging primates is likely to provide further refinements of spacing behaviour concepts applicable to human crowding phenomena. The legacy of the territorial concept is still apparent in modern human crowding research in the form of studies on individual spacing. These studies, particularly the ones following the lead of Sommer (1969) and Hall (1966), represent one of the major themes in human crowding research. This work also
draws on another, less publicised, facet of animal spacing behaviour attributed to Hediger (1950). This approach, still lacking an overall name, concentrates on the intraindividual distances maintained within flocking (or contact) species. It is thus applicable to humans during "non-territorial" phases of their movements in space, for example, when people are in a public place such as a lift or a waiting room.

Human Studies

The terminological diversity evident in the crowding literature complicates the preparation of a review. For example, recent crowding bibliographies (e.g. Choldin and McGinty, 1972; Zlutenik and Altman, 1972) cover phenomena described variously as overpopulation; social density; proxemics; crowding; personal space; interpersonal distance; overcrowding; and territoriality.

This terminological diversity is compounded by usage inconsistency. Thus personal space, territoriality and proxemics are used interchangeably by some authors and with great specificity by others: terms such as population density are used to denote a negative situation by some and in a neutral manner by others.

A categorical schema based on current terminology may be confusing. An alternative schema is suggested by a natural dichotomy occurring in the literature. This dichotomy is based on the duration of the person's exposure to conditions of crowding. On the one hand there are studies of an hour or so in duration and on the other there are studies of persons living more or less permanently under crowded conditions. This durational distinction
permits the crowding studies to be dichotomised into "short term crowding" (STC) involving exposure of subjects to eight hours or less of crowding; and "long term crowding" (LTC) where the duration of exposure is greater than eight hours.

Short Term Crowding

While the cut off point for STC has been set at 8 hours the majority of the studies in this genre are no longer than an hour in duration, and very often less. There does not appear to be a basis for further categorisation of STC on the time dimension but there do appear to be two rather distinct types of crowding represented in the literature.

The first type consists of studies concerned with the use of interpersonal space. Typically interpersonal distance is the dependent variable. These studies fall generally into the area known as "personal space" or "proxemics". As discussed earlier these notions are derived more or less directly from studies of animal spacing behaviour. The voluminous research which has appeared on this topic in the past ten years makes a comprehensive literature survey beyond the scope of the present work. The selective review contained in Tables 2.1 to 2.3 isolates the main features of the research to date.
The research methods used in the studies described in Tables 2.1 to 2.7 are as follows:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Method</th>
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<tbody>
<tr>
<td>Field</td>
<td>Naturalistic unobtrusive field study approach.</td>
</tr>
<tr>
<td>Field/Manip</td>
<td>A combination of naturalistic setting and experimental manipulation.</td>
</tr>
<tr>
<td>Lab/Unaware</td>
<td>Laboratory studies in which the subject is presumed to be unaware that the interpersonal distance is being measured. This lack of awareness may be achieved by deceit, distraction or both.</td>
</tr>
<tr>
<td>Lab/Aware</td>
<td>Laboratory studies in which the subject is fully aware of the dependent variables under investigation. These studies usually employ instructions which ask the subject to verbalise his or her reactions to the proximity of another individual.</td>
</tr>
<tr>
<td>Figures</td>
<td>Manipulation of figures to represent real situations. The usual procedure is to ask the subject to place figures in a tableau so that they represent, for example, two friends talking. Relative distances are hypothesised to vary in the same proportion as real life distances.</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Method</td>
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</tr>
<tr>
<td>Actors</td>
<td>This method involves the subject stage directing the location of real models (i.e., actors).</td>
</tr>
<tr>
<td>P&amp;P</td>
<td>Pen and paper tests, usually in diagrammatic form, which require the subject to indicate where he/she would be located relative to other individuals.</td>
</tr>
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TABLE 2.1

SHORT TERM CROWDING: Personal space and Proxemic Studies

(Psychological Independent Variables)

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eberts (1972)</td>
<td>Personality Questionnaire scores</td>
<td>Conversation distance</td>
<td>Lab/Unaware</td>
<td>Two CPI scales significant. High self acceptance and high sociability with smaller conversation distance.</td>
</tr>
<tr>
<td>Horowitz et. al. (1964)</td>
<td>Diagnostic category (Schizophrenic and normal)</td>
<td>Approach distance</td>
<td>Lab/Unaware</td>
<td>Schizophrenics have a larger approach distance.</td>
</tr>
<tr>
<td>Meisels and Guardo (1969)</td>
<td>Development (age)</td>
<td>Interpersonal distance for figures</td>
<td>Figures</td>
<td>IPD norms discernable down to about 9 years of age.</td>
</tr>
<tr>
<td>Pederson (1973)</td>
<td>Personality Questionnaire Scores</td>
<td>Interpersonal distance for social interaction</td>
<td>Figures</td>
<td>Smaller IPDs associated with low scores for aggression; high tolerance for ambiguity; more</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
<td>METHOD</td>
<td>RESULTS</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sewell and Heisler (1973)</td>
<td>Personality Questionnaire Scores</td>
<td>Conversation distance</td>
<td>Lab/Unaware</td>
<td>&quot;Exhibitionism&quot; and &quot;Impulsivity&quot; negatively correlated with IPD.</td>
</tr>
<tr>
<td>Tolor (1968)</td>
<td>Diagnostic category (Emotionally disturbed and normal children)</td>
<td>Interpersonal distance</td>
<td>Figures</td>
<td>No clear differences between groups</td>
</tr>
<tr>
<td>Williams (1971)</td>
<td>Introversion-Extraversion</td>
<td>Conversation distance</td>
<td>Lab/Unaware, Lab/Aware and Pen and Paper</td>
<td>Introverts prefer a larger IPD for close interactions.</td>
</tr>
</tbody>
</table>
TABLE 2.2

SHORT TERM CROWDING: Personal Space and Proxemics Studies

(Sociocultural Independent Variables)

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aiello and Jones (1971)</td>
<td>Culture (Puerto Rican, Black, White children.)</td>
<td>Conversation distance</td>
<td>Field</td>
<td>Puerto Ricans converse closest; blacks intermediate; white furtherest.</td>
</tr>
<tr>
<td>Felipe and Sommer (1966)</td>
<td>Intrusion (seating)</td>
<td>Latency for moving</td>
<td>Field</td>
<td>Most subjects moved within a few minutes.</td>
</tr>
<tr>
<td>Feshback and Feshback (1963)</td>
<td>Fear (children)</td>
<td>Interpersonal distances within a group</td>
<td>Field</td>
<td>Fear producing stories produce contraction in size of group.</td>
</tr>
<tr>
<td>Fry and Willis (1971)</td>
<td>Status (age)</td>
<td>Reaction to intrusion</td>
<td>Field</td>
<td>Adults respond positively to a child of 5 intruding; neutrally to a child of 8; negatively to a child of 10 years.</td>
</tr>
<tr>
<td>Guardo and Meisels (1971)</td>
<td>Praise - reproof (from parents of child subjects)</td>
<td>Interpersonal distance</td>
<td>Field</td>
<td>Children maintain greater IPD under reproof conditions.</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
<td>METHOD</td>
<td>RESULTS</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hartnett et al</td>
<td>Sex</td>
<td>Approach distance</td>
<td>Lab/Unaware</td>
<td>Females exhibit smaller approach distances.</td>
</tr>
<tr>
<td>(1970)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jones (1971)</td>
<td>Culture. (Black,</td>
<td>Conversation distance</td>
<td>Field</td>
<td>No significant distance or orientation differences.</td>
</tr>
<tr>
<td></td>
<td>Puerto Rican, Italian, Chinese)</td>
<td>and orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kleck</td>
<td>Stigma (epilepsy)</td>
<td>Conversation distance</td>
<td>Lab/Unaware</td>
<td>Subjects have greater conversation distance from stigmatized decoys.</td>
</tr>
<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Leibman (1970)</td>
<td>Culture. (Black and white)</td>
<td>Seating choice with respect another</td>
<td>Field</td>
<td>White females sit furtherest from white males.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little (1965)</td>
<td>Relationship (Friend acquaintance, stranger)</td>
<td>Interpersonal distance</td>
<td>Figures</td>
<td>Increasing intimacy of relationship associated with reduced IPD.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lott and Sommer</td>
<td>Status (academic)</td>
<td>Seating choice</td>
<td>P &amp; P</td>
<td>Subjects (students) sit furtherest from high and low status peers.</td>
</tr>
<tr>
<td>(1965)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McBride et al</td>
<td>Approach distance</td>
<td>GSR</td>
<td>Lab/Aware</td>
<td>Reaction no different between 1 and 3 feet but reduced at 9 feet.</td>
</tr>
</tbody>
</table>

TABLE 2.2 (Cont.)
<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>McDowell (1972)</td>
<td>Intrusion (standing)</td>
<td>Conversation distance</td>
<td>Lab/Unaware</td>
<td>Subject retreats when Experimenter approached closer than 48 cm.</td>
</tr>
<tr>
<td>Pellegrini and Empey (1970)</td>
<td>Sex</td>
<td>Conversation distance</td>
<td>Lab/Unaware</td>
<td>Females converse at a closer distance than do males.</td>
</tr>
<tr>
<td>Watson and Graves (1966)</td>
<td>Culture. (White American, Arabs)</td>
<td>Conversation distance and orientation</td>
<td>Lab/Unaware</td>
<td>Arabs sat much closer and confronted each other more directly.</td>
</tr>
<tr>
<td>Willis (1966)</td>
<td>Interpersonal attraction</td>
<td>Conversation</td>
<td>Field</td>
<td>Friends are approached more closely than strangers.</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
<td>METHOD</td>
<td>RESULTS</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aiello (1972)</td>
<td>Interpersonal distance</td>
<td>Eye contact</td>
<td>Lab/Unaware</td>
<td>Increasing eye contact with distance exhibited only by males. Females display curvilinear relationship.</td>
</tr>
<tr>
<td>Argyle and Dean (1965)</td>
<td>Interpersonal distance</td>
<td>Eye contact</td>
<td>Lab/Unaware</td>
<td>Eye contact increases with greater IPD.</td>
</tr>
<tr>
<td>Baxter (1970)</td>
<td>Location (inside or outside building)</td>
<td>Interaction distance</td>
<td>Field</td>
<td>Location interacts with culture. Mexicans closer outside; Blacks closer inside; Anglos no difference.</td>
</tr>
<tr>
<td>Desor (1972)</td>
<td>Architectural features</td>
<td>Maximum number of people in a room to be just less than crowded</td>
<td>Figures</td>
<td>Rectangularity (versus squareness) and number of doors decrease number of people assigned to room to meet criteria.</td>
</tr>
<tr>
<td>Horowitz et al (1964)</td>
<td>Direction of approach</td>
<td>Shape of interpersonal distance boundary</td>
<td>Lab/Unaware</td>
<td>Front and rear of body have larger IPD zone.</td>
</tr>
<tr>
<td>Little (1965)</td>
<td>Setting for conversation (street corner; lobby, waiting room; unspecified)</td>
<td>Conversation distance</td>
<td>Figures, Actors</td>
<td>Degree of acquaintance and setting both influence distance.</td>
</tr>
</tbody>
</table>
### Table 2.3 (Cont.)

<table>
<thead>
<tr>
<th>Author</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sommer (1962)</td>
<td>Distance between chairs</td>
<td>Chair choice for comfortable</td>
<td>Lab/Unaware</td>
<td>At 3 feet or less subjects prefer to face each other. At greater than 3 feet side by side preferred.</td>
</tr>
</tbody>
</table>
### TABLE 2.4

**SHORT TERM CROWDING:** Ballistic crowding studies

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowerman (1973)</td>
<td>Density of crowd on</td>
<td>Walking speed of</td>
<td>Field</td>
<td>Increasing density produces faster walking speeds.</td>
</tr>
<tr>
<td></td>
<td>a footpath</td>
<td>individuals in crowd</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in a laboratory</td>
<td>Co-operation</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(17.5 or 4 sq. ft.</td>
<td>Interpersonal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>per person)</td>
<td>attraction</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Subjective response</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>in a room (18 or</td>
<td>Severity of sentence</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>6.25 sq. ft. per</td>
<td>in a mock jury.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>person) Noisy or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>quiet.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(male and female in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>same sex groups (13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 4 sq. ft. per</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>person.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in a playroom. (92,</td>
<td>Time in interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50 or 40 sq. ft. per</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>child). Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>were autistic,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>brain damaged or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>normal.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUTHOR</td>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
<td>METHOD</td>
<td>RESULTS</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Loo (1972)</td>
<td>Density of children in a playroom (50 or 15 sq. ft. per child)</td>
<td>Aggression</td>
<td>Field</td>
<td>Increasing density produced less aggression and less group involvement.</td>
</tr>
<tr>
<td>McGrew (1970)</td>
<td>Density of children in a playroom (89, 77, 51 and 39 sq. ft. per child)</td>
<td>Interpersonal distance</td>
<td>Field</td>
<td>At lower density tendency for children to huddle and thus decrease IPDs.</td>
</tr>
<tr>
<td>Preiser (1972)</td>
<td>Density of children in a nursery (40 or 26 sq. ft. per child)</td>
<td>Aggression, Number of interactions, Posture, Use of objects</td>
<td>Field</td>
<td>Increasing density decreases number of interactions and increases use of single person objects (e.g., piano). No clear density-aggression relationship.</td>
</tr>
<tr>
<td>Sherrod (1974)</td>
<td>Confinement of a group (8 people) in a small or large room. (19 or 4½ sq. ft. per person)</td>
<td>Task performance Post Crowding frustration tolerance</td>
<td>Lab/Unaware</td>
<td>No decrement in task performance with increasing density. Frustration tolerance reduced following crowding.</td>
</tr>
<tr>
<td>Sommer and Becker (1971)</td>
<td>Density of adults in a lecture room</td>
<td>Rating scale of ventilation; room size</td>
<td>Field</td>
<td>Increasing density produces more complaints concerning room size and ventilation.</td>
</tr>
<tr>
<td>Stokols et al (1973)</td>
<td>Adults of both sexes at either 21 or 6 sq. ft. per person</td>
<td>Subjective response Communication content Task performance</td>
<td>Lab/Unaware</td>
<td>Increasing density produces increase in subjective crowding and decreases in feeling of</td>
</tr>
</tbody>
</table>
TABLE 2.4 (Cont.)

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tucker and Friedman (1971)</td>
<td>Population size of campus (35,000; 8,000; 1,200)</td>
<td>Number of persons in freely forming in canteen</td>
<td>Field</td>
<td>Increasing size produces smaller groups particularly for males.</td>
</tr>
<tr>
<td></td>
<td>Size of campus not specified therefore density not known.</td>
<td></td>
<td></td>
<td>freedom and room spaciousness. No effect on performance or communication content.</td>
</tr>
</tbody>
</table>
TABLE 2.5
LONG TERM CROWDING: Simulation Studies and Field Experiments

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahearn et al (1969)</td>
<td>Not strictly specified. (Living in air raid shelter for 24-48 hrs. at density of 6-10 sq. ft. per person)</td>
<td>Defections</td>
<td>Field/Manip</td>
<td>More non medical defectors with higher density. Other variables; no significant difference within the narrow density range.</td>
</tr>
<tr>
<td>Altman and Haythorn (1967)</td>
<td>Dyads of sailors kept in closed environment for 10 days. Personality types varied within dyad. Control group in barracks.</td>
<td>Spatial behaviour</td>
<td>Field/Manip</td>
<td>Isolated subjects displayed increase in territorial like behaviour and withdrawal over confinement period. Effects magnified by incompatible personalities.</td>
</tr>
<tr>
<td>Hammes and Osborne (1965)</td>
<td>Similar to Ahearn et al above. Four studies reported ranging in duration from 4 days to 2 weeks</td>
<td>Inhabitants criticisms and comments</td>
<td>Field/Manip</td>
<td>Concludes that &quot;8 sq. ft. per person, exclusive of storage, although uncomfortable, would appear to be adequate for the community fall-out shelter.&quot;</td>
</tr>
<tr>
<td>Paulus et al</td>
<td>Prisoners in living environs for minimum of 30 days. Social density (indivs. per living unit) and spatial density (31-84 sq. ft. per person) varied.</td>
<td>Task performance Affective response</td>
<td>Field/Manip</td>
<td>Some evidence of negative consequences associated with both density measures. Poorly reported study.</td>
</tr>
</tbody>
</table>
TABLE 2.5 (Cont.)

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith and Haythorn (1972)</td>
<td>A 2x2x2x2 factorial design expt.:</td>
<td>Mainly subjective self reports on a number of affective responses</td>
<td>Field/Manip</td>
<td>During 21 day duration of expt. an increase in most affective negative responses. Three-man groups exhibit less stress generally. Crowdedness more stressful for 3-man groups. Less crowded groups show more hostility. Almost every possible interaction significant.</td>
</tr>
</tbody>
</table>
TABLE 2.6  
LONG TERM CROWDING: Naturalistic Studies

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson (1972)</td>
<td>Not specified. By implication cultural differences in space use.</td>
<td>Apparent stress</td>
<td>Field</td>
<td>Traditional Chinese cultural norm of high density living produces no apparent adverse consequences.</td>
</tr>
<tr>
<td>Draper (1973)</td>
<td>Not specified. By implication almost any culture other than one studied (Kalihari bushmen) camp density approx. 188 sq. ft. per person</td>
<td>Physical and social stress</td>
<td>Field</td>
<td>No adverse effects evident.</td>
</tr>
</tbody>
</table>
| Munroe and Munroe (1972) | Home range density of 3 African tribes  
  a) 1440 per sq. mile  
  b) 691 per sq. mile  
  c) 253 per sq. mile | Affiliative behaviour and response to family roles | Field  | Increasing density produces less affiliation and less favourable response to family. |
### Table 2.7

**LONG TERM CROWDING: Survey Studies**

<table>
<thead>
<tr>
<th>Author</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Method</th>
<th>Results</th>
</tr>
</thead>
</table>
| Booth and Johnson (1975) | Children under following conditions:  
  a) persons per room  
  b) time in env. plus design features  
  c) composite neighbourhood crowding | Presence of disease  
  Growth Patterns  
  School performance | Interview  
  Medical exam.  
  Parents' reports | Overall minimal effect from crowding |
| Eoyang (1974) | Students in housing units  
  a) Number per unit (2-5)  
  b) Bedroom sharing  
  c) Amount of time spent in unit  
  d) Demog. variables | Stated satisfaction | Interview  
  Questionnaire | Occultants per unit contributes most variance to satisfaction. Degree of sharing some effect. Time spent in unit and demographic variables showed little effect. |
| Galle et al (1972) | Population density in various areas of Chicago  
  a) Persons/acre  
  b) Persons/room  
  c) Persons/housing unit  
  d) Housing units/structure  
  e) Structure/acre | Fertility  
  Mortality  
  Care of young  
  Aggression  
  Psychiatric disorder | Questionnaire  
  Census data | No sig. correlation between ground density and any dependent variable. Persons per room most important factor in physical health, fertility and juvenile delinquency. Psychiatric disorder correlates most highly with rooms per unit (i.e. isolation) |
<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>INDEPENDENT VARIABLE</th>
<th>DEPENDENT VARIABLE</th>
<th>METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lantz (1953)</td>
<td>Size of home town</td>
<td>Referral to mental hygiene clinic</td>
<td>Demographic data from medical reports</td>
<td>The larger the home town the greater the probability of being referred to clinic.</td>
</tr>
<tr>
<td>Mitchell (1971)</td>
<td>Population density in Hong Kong</td>
<td>Attitudes to housing, Emotional stress, Social relationships</td>
<td>Questionnaire, Survey admin. by Chinese students</td>
<td>A variety of density effects demonstrated. These include: increase in emotional stress when sharing with another household, especially at higher floor levels; higher densities reduces parent/child interactions and interactions with neighbours.</td>
</tr>
<tr>
<td>Schmitt (1957)</td>
<td>Honolulu data on Population/acre, Household size, Couples without own house, Units per structure, Persons/room</td>
<td>Juvenile delinquency, Adult crime</td>
<td>Census data</td>
<td>Overall popn/acre and persons per room showed consistent correlation with both dependent variables. Couples without own house correlate more with adult crime. Household size and single unit dwellings correlate with more delinquency.</td>
</tr>
<tr>
<td>Schmitt (1966)</td>
<td>Honolulu data for Population/acre, Persons/room, Household size</td>
<td>Death rate, Suicide, TB, VD</td>
<td>Census data</td>
<td>Separate independent variables show only weak correlation with dep. variables. Combining variables produces more</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>INDEPENDENT VARIABLE</td>
<td>DEPENDENT VARIABLE</td>
<td>METHOD</td>
<td>RESULTS</td>
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</tr>
<tr>
<td></td>
<td>d) Couples without own house</td>
<td>Psychiatric hospital admissions</td>
<td></td>
<td>significant effect. E.g., persons per room plus persons/acre correlate 0.8 with psychiatric hospital admissions.</td>
</tr>
<tr>
<td></td>
<td>e) Units in structure</td>
<td>Illegit. birth rate</td>
<td>Juv. delinq. rate</td>
<td>Prison admission rate</td>
</tr>
</tbody>
</table>
The principle points to emerge from an analysis of the personal space/proxemics literature (Tables 2.1 to 2.3) are as follows:

The variety of measurement techniques and the means of operationalizing the spatial variable makes comparisons between the studies difficult. This heterogeneity has been lamented by recent researchers (e.g., Duke and Nowicki, 1972) and hopefully future research will concentrate on more widely accepted methods.

Although some trends do seem to emerge the overall state of the literature is one of confusion.

Probably the major point to be made is that violation of "normal" interpersonal distances (with "normality" being a function of personality, sociocultural and environmental variables) reliably produces evasive behaviour and/or as an affective state such as anxiety or anger.

One of the most consistent effects within the cultural groups tested is for females to have smaller interpersonal distance (IPD) norms than males.

The variation in IPD's which appears to be a function of psychological, sociocultural and environmental variables suggests that IPD is but one of a constellation of nonverbal communications involved in social interaction. This case has been well stated by Argyle (e.g., 1969) and is usually termed equilibrium theory. Changes in one component of the constellation can be compensated for.
by changes in another. Thus increases or decreases in IPD can be counter-balanced by changes of posture, orientation, eye contact and other non-verbal behaviours. It is possible that there is an idiosyncratic choice of compensatory behaviours of IPD norm violation and this makes the analysis of violation consequences extremely difficult, particularly if the compensatory behaviours differ in the success with which they overcome stress.

The assumption that there is an innate territorial basis for IPD maintenance seems unwarranted on the basis of the available evidence. The individual, sociocultural and situational variability indicates a learned basis for IPD norms (see Duke and Nowicki, 1972; Epstein and Karlin, 1975). It remains possible, of course, that a deeper, more general innate social component underlies the whole interpersonal spacing phenomenon so that learning dictates only the absolute value of the IPD.

The effects of prolonged IPD violation have yet to be investigated. It would be interesting to study a situation involving IPD violation over a number of hours or, perhaps even more interestingly, short sessions spread over a number of days. It seems likely that adaptation in the form of the establishment of new IPD norms appropriate to the situation at hand would occur and thus produce a rapid decline in the level of stress experienced. If this supposition is correct the contribution of IPD norm violation to the experience of crowding stress may be negligible.

The other main approach to the study of crowding over short periods of time involves the confinement of more or less freely
moving individuals in a limited space. For want of a better term this model of crowding will be termed "ballistic crowding" as it is based on the assumption that crowding limits the behaviour of individuals by producing obstacles in the form of other peoples' bodies. Thus if each individual in a crowded situation is seen as an object following some course the more obstacles he encounters in that course the greater the degree of crowding he experiences.

One important aspect of the ballistic crowding model is that it suggests an alternative consequence to the experience of crowding from that implicit in the IPD norm violation model. Thus if IPD norms are learned the stress produced by their violation is likely to be connected with such psychological processes as expectancy disruption, relearning and so on. If, on the other hand, one uses a ballistic model the predicted consequences of crowding would be goal blocking and probably frustration. The behavioural correlates of frustration are still barely understood but one of the more frequently hypothesised consequences (e.g., Berkowitz, 1969) is aggression. This is in line with the crowding stress syndrome established by the media.

A representative sample of the ballistic crowding studies appears in Table 2.4. The major points to be derived from the ballistic studies are:

Increasing density usually leads to a decrease in social interaction. This withdrawal seems to be mediated by sex in that males show the effect more strongly than females. There is some evidence to suggest that withdrawal may be associated with decreased interpersonal attraction.
The decrease in social interaction seems to produce less overt aggression.

Task performance is generally unimpaired by density. This finding is one of the most consistent in the literature but has been criticised recently on a number of grounds by Paulus, Annis, Seta, Schkade and Matthews (1976).

Sherrod (1974) provides data indicating that subjects may be able to cope with crowded conditions and display unimpaired task performance but that this ability incurs certain psychological costs. This line of research is consistent with Glass and Singer's (1972) studies which indicate a "psychic debt" accrues during adaptation to noise stress.

The concepts and methods employed in the ballistic studies display great variety and this makes the detection of overall trends difficult. It does seem, however, that the type and duration of crowding subjects have been exposed to in the laboratory has little immediate serious psychological consequence.

Overall, the short term crowding literature provides little empirical support for a condemnation of "crowding". The violation of interpersonal distance norms in daily life is a rare occurrence because these norms are so well established. Even when these norms cannot be maintained (e.g., in a crowded lift) compensatory behaviours such as avoidance of eye contact and body posture seem capable of keeping stress to a minimum. The fact that IPD violation
types of crowding seem to produce little in the way of "behavioural pathologies" suggests it is not sufficient as an operational definition of crowding.

The ballistic studies also indicate that little adverse reaction occurs to this form of crowding but this conception seems intuitively more likely to produce an adverse reaction if the experience is prolonged. The behavioural after effects described by Sherrod (1974) are also indicative of a more generalized stress response in the form of frustration which is consistent with the "common sense" view of responses to crowding.

In very broad terms it is suggested at this stage that IPD violation is probably a poor analog for crowding but that ballistic crowding is possibly a useful concept in this connection. Certainly one of the common experiences of urban life is goal blocking in the form of traffic jams, busy footpaths, queues, commuting distances and the like.

Long Term Crowding

Most of the studies of long term crowding have been carried out in the demographic tradition. The two main exceptions to this rule are the "simulation" studies of Altman and his coworkers and the work of Hammes' group with fallout shelter confinement studies. A few studies using naturalistic observation techniques have also been published.

Altman and his colleagues (see Altman and Taylor, 1973, for a more complete coverage) have carried out a large number of studies of
small groups of men maintained in a closed environment for various periods up to a maximum of 21 days. These studies, ostensibly concerned with simulating the conditions of life on submarines, are essentially long term experiments in the traditional psychological sense which make use of naturalistic observational techniques.

Hammes' work (e.g., Hammes and Osborne, 1966) has been concerned with simulating the experiences of confinement in a fallout shelter in order to determine the minimal environment (including the psychosocial) that must be provided for survival. The work of this group is methodologically similar though less sophisticated than that undertaken by the Altman group.

A representative sample of this genre of crowding research is set out in Table 2.5.

Examination of the research summarised in Table 2.5 indicates that:
People are able to live at densities down to about 8 sq. ft. per person for up to 2 weeks without serious overt behavioural pathologies developing. This finding may be slightly deceptive in that it seems to involve the utilization of rather severe coping responses. Smith and Haythorn (1972) for example, detect considerable negative affect developing during a 3 weeks confinement period.

The compatibility of the individuals involved is an important variable in the development of withdrawal and feelings of hostility. This is an unsurprising finding but the compatibility variable is ignored in a great deal of crowding research.
Although three-man groups reported more stress at higher densities the three-man groups were generally less prone to stress than the dyads. As the authors note this finding counters the maxim that "three is a crowd" and suggests there may be more to crowding in this situation than simple ballistic obstruction.

A major shortcoming of all of these studies is that the subjects are all more or less aware of the (limited) duration of the experiment and this possibly keeps much of the stress at a covert level, or even prevents it from occurring.

Overall these studies suggest that some degree of stress develops in confined groups living at fairly high densities but that this stress is not overtly expressed during the confinement period.

The naturalistic studies (see Table 2.6) are diverse and difficult to interpret. The major point which can be made from them is that cultural variables seem to be of major importance in determining the consequences of high density living. Certainly some cultures seem to function well at densities which would be considered excessive by others.

The demographic or survey style studies represent a long tradition in the crowding research. Some of the more recent studies concerned primarily with crowding are set out in Table 2.7. The main conclusions from this research are:
There is a suggestion that some measures of density may have additive effects. This notion is intuitively appealing but more evidence is needed before it can be accepted.

The overall relationship between density (however measured) and behaviour pathology, stress, etc. remains unclear. Perhaps the one safe conclusion which can be drawn is that increasing densities beyond the cultural norm generally produces some form of social withdrawal. Some cultures seem to have evolved more effective coping mechanisms than others and the cultural variable looms as a most important one in crowding research.

The study by Gallee, Gove and McPherson (1972) provides a tantalising suggestion that the degree of withdrawal may in some way be linked with psychiatric disorder. Unfortunately the study is not able to discriminate between the two most obvious explanations: either than individuals most susceptible to psychiatric disorder are most sensitive to the stresses of high density living: or that high density living induces social withdrawal which in turn produces psychiatric symptoms.

Theories of Crowding

The empirical research reviewed above suggests that the simple density-based conceptualizations of crowding are not sufficient to explain the facts at hand. There are a number of alternative possibilities. One of these is that crowding is not a unidimensional concept. This view is implicit in the treatment of the research in the present paper. One possibility is that crowding may consist of three main dimensions. These could be termed interpersonal distance norm violation; ballistic crowding; and long term crowding.
Probably a better term for the latter variety would be social crowding in order to suggest that living with other people under confined conditions produces some degree of stress. As yet this position has not been articulated in the literature though a number of recent papers allude to the possibility of crowding being a multidimensional phenomenon (e.g., Paulus, Cox, McCain and Chandler, 1975).

The most popular theoretical approach in the existing literature is a density mediated model. Two similar but independently developed mediated density models appeared in the literature during 1972 and these still command the most allegiance. Both models have as their crucial feature the notion that density effects are psychologically mediated and that the degree of response to crowding is contingent upon psychological state. The two models differ principally in the mediation parameters nominated. Stokols (1972) uses a spatial framework and argues that various personal, social and environmental factors produce a subjective impression of spatial restriction and that it is this which constitutes crowding. Stokols, Rall, Pinner and Schopler (1973) have operationalized these factors and provide data generally in support of the model. The fact that Stokols conceives of crowding as being mediated by limitations of space suggests it corresponds to ballistic crowding. The main consequence of spatial limitation would be the inability of the individual to achieve a desired goal because others block his or her passage to that goal. The Stokols model thus seems most applicable to the ballistic dimension isolated earlier though it could also operate in a long term crowding situation as well.
Desor (1972) suggests that being crowded is the result of being subjected to excessive "social stimulation" and is similar to Milgram's (1970) notion of stimulus overload. The Desor model is thus quite tenuously tied to the spatial dimension. Other variables suggested by Desor include the architectural environment and the social situation. Social overload conditions are unlikely to occur in the short term and when they do occur are situation specific. Most people, in fact, actively search out high "density" social situations such as parties from time to time and these situations may become aversive when prolonged. It seems reasonable to pair the Desor model with the long term (social) dimension of crowding isolated earlier.

Both the Desor and Stokols models have had considerable impact on the subsequent crowding research and most current empirical work consists of attempts to define more precisely the nature of the hypothesised mediation process. This usually takes the form of compiling a list of mediating variables. As yet this list is still vague but one variable is emerging as a particularly significant one. This is the expectation of the subject in the crowded situation. It is found variously in the form of perceived control (Sherrod, 1972) and anticipated activities (Baum and Koman, 1976). It seems reasonable to include expected duration of exposure to crowding under this variable but empirical investigation of this is as yet lacking.

Although a formal model is yet to appear recent studies are increasingly distinguishing between "density crowding" and "social crowding" (e.g. Baum and Koman, 1976; Paulus et al., 1975) that is, crowding which results from spatial factors is distinguished from crowding resulting from interpersonal factors.
Conclusions

The literature suggests that crowding is not a unitary phenomenon. Personal space/proxemic crowding, ballistic crowding and social crowding all appear to have different causes and different consequences. This multidimensional nature of crowding has yet to be formally articulated and the failure to recognise the various facets of crowding is possibly a major cause of confusion in the literature.

The theoretical bases of both the personal space/proxemic and the ballistic forms of crowding appear to be quite clear. In the former the major component is norm violation (and possibly the violation of innate spatial preferences) and in the latter the frustration paradigm seems to be appropriate. However the mechanisms controlling the experience of social crowding remain obscure. The Stokols/Desor phenomenological models have generated considerable research and their heuristic worth is not in doubt. Unfortunately their models do not specify the mediating variables central to the operation of the model and this means that the selection of independent variables is still made on an arbitrary basis. One of the most common correlates of prolonged social crowding is the experience of loss of privacy. A potential source of information concerning the operation of the variables influencing the experience of crowding may be the phenomenon of privacy.
CHAPTER 3

PRIVACY AS A COMPONENT OF THE CROWDING EXPERIENCE:
A Multidisciplinary Analysis of the Literature

Speculation on the relationship between privacy and crowding is not new. As long ago as 1930 Plant argued that privacy was an important aspect of crowding and many other similar arguments have since appeared.

The first attempts to develop a formal model relating privacy and crowding appears to have been Proshansky, Ittelson and Rivlin's (1970) paper "Freedom of Choice and Behaviour in a Physical Setting". (This paper is one of the most seminal in the recent crowding literature in that it also represents an important precursor to the phenomenological models of Desor and Stokols discussed above.) The Proshansky et al. discussion is developed around the analysis offered by Westin (1968).

Despite these and other attempts to define and evaluate the concept of privacy a comprehensive review of the literature relating to it has yet to appear, although Altman's (1975) monograph has gone a long way toward providing such a survey. The present review was, however, completed prior to the publication of Altman's work. It is possibly significant that this review and the model derived from it are quite similar to Altman's. The essentially multidisciplinary nature of the concept is reflected in the extensive literature contained in the legal, political science, architectural, sociological, psychological, anthropological and other journals. This multidisciplinarity has made compiling a complete review a difficult exercise. It is possible but unlikely that important work
has been overlooked, particularly in the legal and architectural literature.

The review that follows will examine the literature on privacy from three basic perspectives: the cultural; the environmental; and the individual. These approaches will then be integrated in order to produce a research model.

The Anthropology of Privacy

Although privacy patterns would seem to be a useful cultural variable for ethnographic study there are remarkably few studies dealing directly with the topic. This omission is difficult to understand when one considers the vivid biographical descriptions of cultural variations in privacy requirements which have been experienced by anthropologists in the field. Thus Mead (1966) has described the difficulties an American faces in adapting to life in a society which lives in houses without walls (The Samoans). Anderson (1972) working in Asia and Briggs (1970) living with Eskimos describe similar privacy intrusions.

An article by Roberts and Gregor (1971) laments the lack of privacy studies and offers a fairly detailed description of the privacy patterns in two very different cultures: one characterised by very low privacy behaviour (the Mehinacu of Brazil); the other placing great stress on privacy (the Zuni of New Mexico).

Their description of the Mehinacu stresses the high observability and lack of auditory privacy afforded by the architecture and geography of their villages. However this lack of physical support
to the achievement of privacy is overcome, at least to some extent, by a number of social institutions. These include the exclusion of women from the men's meeting house; social etiquette forbidding one tribal member from entering the house of another (extended) family kinsman, or for an individual to trespass into those parts of the house belonging to his inlaws; and the erection of real and symbolic barriers around individuals undergoing status change (e.g., initiation, childbirth, death.)

As well as these institutions tribesmen make use of the surrounding jungle and its many concealed paths to effect extra-marital assignations, to avoid being seen returning home empty handed in the event of an unsuccessful hunting expedition, and so on.

Rapoport (1969), in discussing another Amazonian tribe (the Yagua) living under very similar conditions to the Mehinacu, describes an even more institutionalized mode of privacy achievement. A person can "absent" himself from the group without breaching etiquette simply by turning away from the centre of the house.

The description Roberts and Gregor offer of the Zuni concentrates almost exclusively on their religious life because, in their opinion, it is the highly secretive nature of their religious groups that explains the perseverance of the Zuni way of life despite centuries of domination by other races. The secrecy surrounding the numerous cults found among the Zuni is reinforced by a number of spatial taboos concerning the entry of uniniates into religious areas. As well as these spatial taboos there is a strong social deterrent to "snooping" because those who are apprehended are
labelled as witches.

Draper's (1973) description of the !Kung Bushmen provides an example of a culture with apparently almost no within-camp privacy. Draper suggests this is made possible by the uninhabited hinterland and easy intertribal migration.

The high population densities (however measured) which are considered characteristic of the Chinese and Japanese peoples suggests a source of ethnographic data on privacy. Thus the sociologist R.E. Mitchell (1971) surveyed the population of Hong Kong in some depth and found that the important variable governing complaints of lack of space and privacy was not the gross number of people living in the dwelling but the number of households contained in it (i.e., sharing with non kinsmen). Whether this finding means that intra family privacy has some special function or is more simply a function of "use crowding" is difficult to know. However an interesting paper by Anderson (1972) which examines some of the traditional Chinese norms governing social behaviour does offer some clues concerning their perceptions and uses of privacy. Perhaps the most salient of these is that one of the principle indicators of family economic status is the number of kin housed under the one roof. Anderson notes that "the effect of this is that members of Chinese communities known to me are rarely alone. People work together; there are always several people (adults and children) around a house; and going off just to be alone is unheard of" (p. 144).

However this lack of overt privacy is accompanied by (and perhaps compensated for) a number of customs which seem to reduce
the effects of such crowding. These include:

1. Strict separation of the house into private and social spaces.
2. Flexible daily routines permitting more rational utilization of facilities.
3. Noise is not considered a stressor.
4. Status relationships are highly institutionalized.
5. Children are tightly disciplined.
6. Emotional interaction, especially between non-related individuals, is kept to a minimum.

It is interesting to compare these customs with those of the Japanese who seem to have an even more highly institutionalized social life and who place greater stress on interhouse, but less on intrahouse privacy (see for example Smith, 1970; Canter and Canter, 1971).

Another important aspect of Chinese life which seems to relate to privacy is the concept of "face" (this concept is not exclusive to the Chinese of course - see, for example, Goffman, 1955). Although the concept of face in Chinese culture is complex (e.g., Hu, 1944) it is generally concerned with the maintenance of self esteem for the individual and, no less importantly, his family. As well as maintenance of one's own "face" there are strong moral codes concerning the saving of other's face as well, either by active intervention or controlled inattention. Goffman (1968) notes the development of the same more among caucasians in institutions.

The importance of the face in a more literal sense is
exemplified by Murphy's (1964) description of the use of the facial veil by the Taureg people of northern Africa to achieve a symbolic and real control of the degree of self disclosure. (That the face is the most expressive part of the body has been known at least since the time of Darwin, 1872).

There is some evidence to suggest that different privacy preferences and practices exist even at the sub-cultural level. Kuper (1966), in a questionnaire study of middle class housing estates in the North and South of England, found the Southerners consistently more concerned with privacy - a finding which has no obvious explanation in the architectural arrangement of the two estates. Similarly, Bracey (1970) compared attitudes to privacy on new housing estates in England (Bristol) and America (Columbus, Ohio) and found that the English, especially those with working class backgrounds, were more aloof than the Americans. It is interesting, however, that the Americans saw their neighbours as being more a threat to their privacy than did the English.

Willis (1963) provides some data on subcultural differences between working and middle class people in London which suggests that differences also exist in the very manner in which the concept of privacy is defined. Thus working class people seem to define it in terms of social relationships with neighbours while for the middle class privacy is not being overlooked by neighbours and having internal barriers within the home.

There is some evidence to suggest that microcultural norms are also important in the achievement of privacy. Thus a questionnaire
study of the overt behaviour patterns of household members in their own houses. by Altman, Nelson and Lett (1972) suggests some interesting factors involved in the achievement of privacy within the family. One of the clearest of these is door knocking prevalence among household members. Parent's doors received the most knocks, daughters next and sons least. Daughters typically kept their doors shut more than any other household member.

Taking a rather different approach Vivona and Comillion (1972) concentrated on the effects of enforced nude exposure in the communal bathroom of a girls' hostel. They noted the development of a situation specific "moral code" (essentially lack of visual interaction) which developed to compensate for the girls' self consciousness in the situation. Ilfeld and Laver (1964) and Weinberg (1965) studied the norms pertaining in nudist camps and report much the same convention although nudist camps also include touch and sex-oriented conversation taboos. Personal observation suggests these also operate in most male lavatories.

Cultural factors, then, whether they be at the ethnographic, subcultural or microcultural level appear to play an important part in the phenomenon of privacy both in helping determine what behaviours are to be carried on in private and, less obviously, ordering social life to help achieve this end. The actual behaviours which culture decrees should be carried out in privacy (see also Westin, 1968) seem to be variable except for copulation and to a lesser extent excretion which approach universality in privacy requirements. Whether this relates to the degree of distraction and/or vulnerability characteristic of these behaviours or to some more subtle psychological
effect (e.g., display of genitalia whose proportions are often of significance for status) is still not clear. It is even possible that many of the culturally ordained privacy behaviours have no direct psychological function for the individual but instead serve a group or social function. Such an argument has been made frequently in the sociological literature (see, for example, Coser 1961).

The social strategies which are used to assist in the achievement of privacy seem less variable than the behaviours themselves. Basically these are of two main types: conventionalised exclusion techniques; and, more commonly, self-censure. Which technique is used is presumably a complex function of the behaviour involved, the physical props at hand, and the intruders psychosocial characteristics. There seem to be no systematic studies of this aspect of privacy although there are a number of impressionistic accounts, most notably those of Goffman (e.g., 1963, 1971).

Privacy and the Physical Environment

The Dwelling

Privacy in and between dwellings has been studied in some detail in recent years. One of the most intensive studies is Kuper's (1966) survey of two housing estates in England, one in the North and one in the South. Using conceptually rather eclectic measures (based on being overlooked; suffering from noise; being restricted in activities; suffering from gossip; and too much neighbourliness) she found intradwelling privacy criticised only in open plan houses but a high degree of criticism concerning interdwelling visual privacy. The excellence of the sound proofing is indicated by the very few complaints concerning auditory privacy. The regional differences in
privacy preferences described earlier produced an interesting interaction with housing layout in that a linear arrangement of dwellings (which affords more interhouse privacy) facilitated neighbourliness in the south while a cluster arrangement, affording comparatively less privacy, produced most neighbouring in the north. A Dutch study reported by Morris and Mogey (1965) found that better physical privacy produced more favourable attitudes to neighbours suggesting that this may be the more general result. However similarity of life styles and other social factors are no doubt important variables in neighbour relations as well.

Kuper (1953) has also written on the relationship between intrahouse privacy and neighbouring in England and reports an interesting finding concerning self-censure. In semi detached houses there were very few complaints about auditory intrusions but many concerning the self-imposed restrictions necessary in that form of dwelling. This self-censure presumably applies not only to behaviours that "leak" unwanted information to neighbours but also to non-specific "noise" which would be a source of annoyance and distraction. Personal observation suggests this sense of responsibility is well developed in our culture and may constitute one of the major causes of dissatisfaction with high density environments. There seems to be little systematic research into this self-censure facet of privacy.

In a more general survey of six English housing estates published by the United Kingdom Department of the Environment (DOE, 1972) the overall finding was that 70% of the respondents said they had enough privacy, 15% too little and 6% too much (note that
"privacy" was not defined to respondents). However considerable sample differences were found in that ground level houses and balcony access designs incorporating windows onto the balcony (making them functionally equivalent to ground level houses with respect to passers-by) occasioned much more criticism concerning lack of privacy. This suggests that for this particular setting privacy is mainly conceived of in terms of visual screening from neighbours. Troy's (1971) study of four Sydney suburbs suggests the same conception exists there.

Using her factor analytically derived "Privacy Preference Scale" Marshall (1972) attempted to relate orientations to privacy (i.e., PPS scores) to past and present environments. Predicting the effect of past experience from adaptation theory she partly confirmed her hypothesis that low levels of privacy in the past would produce low present preferences. Present environmental features exerting statistically significant effects on the PPS scores were number of rooms per person, acoustic screening within the dwelling and physical proximity, noisiness and visibility of neighbours.

A seldom quoted but very interesting study by Smith, Downer, Lynch and Winter (1969) involved the constant monitoring of in-home interaction patterns of twenty families. This monitoring, achieved by the establishment of a complete 3 bedroom (1400 sq. ft.) mock-up dwelling within a large laboratory was conducted during the second week of the family's 2 week residence. Two forms of privacy were recorded: "location privacy" in which a family member was in a location by himself or herself while others were present in the house; and "house privacy" in which a family member was alone in the
house (although other, non family, individuals could be present). This study, by holding the architectural environment constant, permits the isolation of some social factors governing the experience of privacy in the dwelling. In the population used the presence of preschool children in the household was easily the most potent factor in that the five mothers who had such children never had house privacy while mothers with older children had house privacy at least 20% of the time. Location privacy did not differ significantly according to family structure but there was a very wide variation in the amount of location privacy (5% - 20%) obtained by mothers with preschoolers which suggests a rather low degree of architectural determinism for this factor also.

In summary, the experience of privacy as it relates to the dwelling seems to be a complex interaction of sociocultural and architectural features. Thus for lower socioeconomic groups the inter house features (fences, trees, units per building, etc.) and characteristics of the neighbours appear to be the important features in the determination of privacy. For middle class people within-dwelling environmental features seem to be far more important. Possible explanations for the difference could be that the working class community is less homogeneous in life style with the consequence that neighbours pose more of a threat to one's own life style; that the "trait" of self censure is more vigorously ingrained into the middle classes; or that the working classes are more likely to have been brought up in housing which offered substandard privacy from neighbours.
Institutions

Privacy is notoriously difficult to obtain in institutions such as goals, hospitals and military establishments. The actual inroads into the individual's privacy vary both with the physical layout of the institution and its social organisation. Goals, for example, use both physical and social methods (more or less by design) to strip the individual of almost every vestige of privacy.

Schwartz and Proppe (1969) administered a 38 item questionnaire to residents of a Los Angeles old peoples' home, asking them about the importance of privacy in their lives and the problems they had in achieving it. Results indicated that the longer the person had been in the home the harder it was for them to achieve privacy, perhaps because they became less anonymous over time. This interpretation is supported by Lipman (1968) whose research indicated anonymity is a common method of achieving privacy in old-age institutions.

Lawton and Bader (1970) also investigated the privacy preferences (operationally defined as attitudes to room sharing) among institutionalized aged and compared them to a non institutionalized population. Preferences were found to be related to experience. That is, those people presently sharing showed little inclination to move to a private room. It is perhaps worth remembering that old people may constitute, for reasons of loneliness and infirmity, the section of the population least concerned with the achievement of privacy.

The influence of bedroom size on social interaction has been investigated with female psychiatric patients by Ittelson, Proshansky and Rivlin (1970) using a behaviour mapping technique.
Perhaps the most interesting aspect of this research is their finding that increasing the number of beds in a room (while holding the patient to space ratio constant) produced less social interaction. Thus increasing the "density" of a population provided more actual opportunity for interaction but produced less. Blake, Rhead, Wedge and Mouton (1956) investigating interactions in army barracks and Tars and Appelby's (1973) "behaviour stream" study of a child's daily activities produced similar results.

The work of Goffman (especially 1968), while more phenomenological, offers an especially vivid and insightful picture of the institutional attacks on privacy. Concentrating mainly on the way in which institutions damage the self concept of the individual, he isolates some of the strategies inmates use to preserve some semblance of "self". Because these strategies seem to highlight many of the less well defined privacy seeking behaviours outside of institutions they will be described in some detail. They include:

The utilization of what Goffman calls free places "bounded physical spaces in which ordinary levels of surveillance and restriction were markedly reduced, spaces where the inmate could openly engage in a range of tabooed activities with some degree of security ... all these places seemed pervaded by a feeling of relaxation and self determination." (p. 206)

In most institutions the most common free places are the toilets. On some occasions free places may become the sole preserve of a
select group of individuals.

There also exist places where the individual has sole claim on space. These places, which Goffman calls "personal territory" range from a comfortable and secure "nest" to a mere refuge site. In some cases the patient's blanket was used to achieve a degree of personal territory.

"In some wards a few patients would carry their blankets around with them during the day and, in an act thought to be highly regressive, each would curl up on the floor with his blanket completely covering him; within this covered space each had some margin of control" (p. 219).

Private storage places (and their contents) also represent an important, if less obvious, aspect of privacy.

"...these places can represent an extension of the self and its autonomy, becoming more important as the individual foregoes other repositories of selfhood. If nothing can be kept only for oneself, and everything one uses is used by others, too, then little protection from social contamination by others is possible. Further, some of the things one must give up are those with which one employs for self identification to others." (p. 221)

Goffman notes that many of the objects stored in these places have no obvious functional value. They seem to be kept as a talisman to afford the inmate some vestige of individuality simply by the possession of an object unique in that environment.
This concern with the deindividuating effects of institutions is shared by a number of other authors also. Thus Sommer and Osmond (1960) note the occurrence of deindividuation (although they do not explicitly equate this with lack of privacy) and Heilweil (1973), in discussing student housing, suggests a link between privacy and individuality.

The institution, by reducing the opportunity for the expression, maintenance and development of individuality, seems to mimic the effects of high density environments. That the strategies employed by inmates to counter the effects of institutional deindividuation are remarkably similar to those people living in high density environments further suggests that privacy and individuality are quite closely linked. This notion will be discussed in more detail later.

Communes and Kibbutzim

While there is little formal research as yet into the social dynamics of the "counter culture" commune, there are a number of impressionistic reports which bear on the experience of privacy. In fact it is difficult to find a discussion of communes which does not accord an important part to privacy considerations, perhaps because the communal way of life either ideologically or in practice makes its achievement so difficult. Thus Brown and Brown (1973), Fairfield (1972), Levine, Carr and Horenblas (1973) and Melville (1972) all implicate lack of privacy (both within the commune and between commune and non commune people) in the notoriously short life span of communes. Houriet (1973) even goes so far as to talk of: "everywhere, a screaming need for privacy, to be alone in a place called your own, one that was sacred and uncommunal" (p. 29).
Some commune members, however, insist that spatial privacy is not essential. The following statement recorded by Fairfield is an example.

"Privacy, or the view that the human needs to be physically and completely alone without anyone else present has no validity. Privacy is in your head. You can have "privacy" in a crowded room if you like" (p. 319). The difference in perceptions may be just individual differences or, more likely, a function of the great diversity of life styles and environments which have been grouped together under the category of communes. Whatever the reason these settings, which seem to contain a number of conflicting ideals (the individuality of "doing one's thing" and the introspective experiences produced by drugs versus the community ethic and emotional honesty considered so important by today's youth) seem to be a rich source of data for our understanding of the attainment and functions of privacy.

Much more formal study has been undertaken in the Israeli Kibbutzim. Probably the most relevant for the study of privacy is an investigation by Davis and Oleson (1971) which describes some of the strategies employed by Kibbutzniks to achieve "social and physical distance". These strategies include volunteering for solitary work; the pursuit of solitary hobbies; and the utilization of various "acceptable" excuses to avoid some social events. This latter development, very contrary to Kibbutz doctrine, has also been reported in other Kibbutzim (Rosenfeld, 1957; Shepev, 1969).

Rapaport (1958) has noted the development of privacy norms in Kibbutz reared children who initially share the same toilet and bath
facilities but with time the boys and girls spontaneously separate, first in the lavatories and then in the showers.

The communal approach to child rearing which is practised in many of the Kibbutzim has also produced a large, if conflicting body of literature. Some (e.g., Bettelheim, 1969) purport to discern certain "pathologies" including reduced self awareness, low empathy, a reduction in intellectual flexibility, and lack of individuality. Bettelheim also stresses the lack of privacy in the Kibbutz although he does not explicitly link this with the "pathologies". The lack of individuality may not be so much a consequence of Kibbutz life as a necessary component of a successful Kibbutznik. Thus to quote from Koestler's (1945) novel.

"The trouble with you, Joseph, is that you are such a many coloured bird. In a commune the grey birds get on best...." (p. 162) Spiro (1956) makes a similar point.

The proponents of the Kibbutz method of childrearing are convinced that this method produces comparatively superior psychosocial adjustment. (For this point of view see Jay and Birney, 1973; Rabkin and Rabkin, 1969).

Probably the most important point to emerge from this brief examination of the communal life style is that, even for those who live by a doctrine largely antithetical to the attainment of privacy, such privacy is still sought. If it is not obtained, the literature suggests, the commune itself may collapse.
Another important aspect of this research is that it reinforces the link between individuality and self concept and privacy which emerged from the discussion of institutional life. Unfortunately the nature of this link is still not clear but it appears to have a strong developmental component.

Other environments

Environments which constitute only a part of the persons normal day are also useful sources of data.

Offices

Recent experiments in the so-called "office landscape" have led to a number of attempts to assess the psychological and behavioural effects of traditional (cubicle-type) offices versus the increasingly popular "open-plan" offices. Thus Manning (1965), using unstructured interviews recorded a number of complaints from clerks in open plan offices about their feelings of being continuously under scrutiny. Hundert and Greenfield (1965) investigated a number of different aspects of privacy and found that clerks who had recently moved from traditional offices all reported poorer privacy in the open plan office.

Duffy (1969), in one of the few studies of the office based on a theoretical system cites some anecdotal evidence concerning reduced privacy in an open plan office and suggests this is the result of role conflict which arises because of the lack of boundaries available to separate an individual's different roles. Brookes (1972) and Sloan (1972) are another two examples of studies reporting reduced privacy in the open plan office.
The bathroom

Kira's (1966) study of the bathroom represents one of the minor "classics" of architectural psychology and the importance of privacy in understanding the use of this facility is treated in some depth. Apart from noting the obvious cultural differences which exist with respect to privacy for excretion (see also Madge, 1950) he suggests that, in the United States at least, the bathroom is often used to obtain privacy for other purposes (e.g., respite from stressful interaction). Brandeis (1973) offers empirical support for the importance of privacy in lavatories with a study which shows that end cubicles (and hence the most private) of a row are the most frequently used. Lavatories are no doubt a rich source of information on privacy for those who have the enthusiasm necessary to work in this environment.

Isolation Studies

The effects of more or less long term confinement of groups has received both naturalistic (e.g., Wilkins, 1967) and experimental study (e.g., Altman and Haythorn, 1967). The general finding is that the enforced proximity in such groups leads to a decrease in the amount of social interaction.

Other environments which might prove useful sources of data include the private motor car, the encounter group, sex shops, brothels, medical examinations; etc. None of these seem to have been discussed within a privacy framework as yet.

In summary, these environments seem to reveal little concerning the functions of privacy. They do, however, indicate that
individuals may need situation specific privacy (e.g., in the office) and pose the interesting question of whether trade-offs between types of privacy are possible.

**Body privacy**

Interpersonal proximity and touching seem to fall in a more or less distinct category of privacy behaviour.

The diverse range of independent and dependent variables evident in the recent personal space/proxemics literature highlights the atheoretical approach of most of this research. However the view that interpersonal distance has a communication function (Hall, 1959; Argyle, 1969) seems to offer promise for a privacy analysis in that under-shooting distance norms is usually associated with interpersonal intimacy. That is, if a person is approached more closely than is normal or necessary, the intruder is seen as claiming more intimacy than is his/her due. Seen in this light touching becomes simply a closer range communication device and constitutes an equivalent avenue of privacy violation.

There is a large literature on the reactions of people who have their interpersonal distance norms violated (e.g., Felipe and Sommer, 1966; Fry and Willis, 1971; McDowell, 1972) and the beginnings of an equivalent literature on touching (Coffman, 1971; Henley, 1973). Touching in anthropological perspective, mainly as it relates to child development, is the subject of a monograph by Montagu (1971) which emphasises the obvious point that who may touch whom is a function of the situation and the culture. Howard (1970) presents some interesting observations on the reactions of North Americans
(essentially a non-tactile culture) in a "touching" encounter group situation.

While the self protective aspects of body privacy are no doubt important in a potentially hostile situation it seems more likely that its functions in our society are primarily communication. As such it operates as only one of a constellation of non-verbal behaviour's which regulate our day to day interactions. If this interpretation is correct then it seems to follow that body privacy is not in fact a true form of privacy but rather a kind of buffer to preserve other forms of privacy. The strength and persistence of its communication function would thus determine the effects of body privacy invasions, and assuming that no other privacies are violated at the same time, have little long term effect.

Privacy and Personality

None of the major theories of personality explicitly involve privacy as an important parameter in the development or expression of personality. Nevertheless a good number of them do seem to depend on adequate amounts of privacy to achieve the end states representative of a well adjusted individual as defined by their particular theory.

Thus the "actualization" theories of Rogers (e.g., 1963) and Maslow (e.g., 1962) place great emphasis on the self concept and this has been strongly linked with privacy in the research discussed earlier. Kelly's attribution theory (e.g., Kelly, 1955) also suggests privacy is important for the conscious evaluative process that forms the backbone of the theory. Finally, the behaviouristic model recently offered by Mischel (1968), by stressing situational
determinants of behaviour, seemingly suggests the importance of privacy for "role release" (assuming that the roles demanded by some situations are more difficult than others).

The only direct study of privacy as it relates to other individual differences seems to be Marshall's (1970) study which correlated scores on her Privacy Preference Scale (PPS) with the Firo-B test and the Myers-Briggs Inventory (MBI). Using only the total PPS score (which can be broken down into subscales) she found correlations of about -.5 with the four Firo-B scales measuring affectional social interaction.

The Myers-Briggs produces four subscores derived from Jungian typology, but only Extraversion-Introversion (EI) and Thinking-Feeling (TF) seem to be of relevance for privacy. As might be expected there is a fair overall (+.3) correlation between PPS scores and EI but the subscale correlations were generally smaller (approx. +.2) and their pattern suggests the MBI.EI scale is mainly a measure of socialising skill.

The TF scale showed negative correlation (-.25) with PPS score indicating, not surprisingly, that persons scoring toward the thinking end of the continuum prefer more privacy. This seemed to apply mainly to preferring low involvement with neighbours and low levels of self disclosure.

More specific idiographic studies include Williams' (1971) examination of the relationship between introversion-extraversion (MPI Test) and personal space in which he found introverts showing
more stress at close distances; and Jourard and Friedman's (1970) demonstration of a relationship between self disclosure and personal space.

Other testable concepts which have a possible but more tenuous relationship with privacy include authoritarianism, internal-external control and conformity.

Except for Marshall's (1970) work with the PPS Test (which is based on a pragmatic situational approach rather than a functional one and is thus of limited value for the present analysis) there is very little research into privacy and personality. This is possibly because most interest in privacy to date has been in sociology and the applied behavioural sciences (e.g., architectural psychology), disciplines which are little concerned with individual differences. The recent unpublished paper by Laufer, Proshansky and Wolfe (1973) which stresses the developmental aspects of privacy is an encouraging sign of an awakening interest in privacy-personality issues.

The Functions of Privacy

The functional orientation which has been stressed in this paper is unusual in the privacy literature. Westin's (1968) book, which represents the closest approximation to a definitive work on privacy, contains the most thorough functional analysis. Westin isolates four main functions of privacy for the individual. These are:

Personal autonomy and its product, individuality. Exposure of a person's innermost secrets may lead to him or her being open to
social blackmail and thus reduce his or her autonomy. Children are
considered to need a degree of autonomy to develop individuality.

Emotional Release. Westin includes in this category both the
"onstage/offstage" social dichotomy proposed by Goffman (1959) as
well as respite from taxing social stimulation (similar to Milgram's

Self Evaluation. Privacy is seen as necessary for the
individual to integrate his experiences into a meaningful pattern
and to plan for future action. Although Westin seems to regard this
function as independent of theory it does seem to depend on a social
learning or cognitive model of personality.

Limited and Protected Communication. This final "function"
may be more appropriately termed a strategy. It is believed to take
two general forms; sharing personal details with intimates; and its
obverse, keeping some details from intimates.

There is considerable support for Westin's list of functions.
Other writers who argue for one or more of them include:

Autonomy and Individuality. Schenk (1972) argues that
territorial possession provides a person with a feeling of
individuality (a frequently cited function of private space in the
architectural literature); Madge (1964) notes the necessity for
privacy in the development of individualism and personal identity
Simmel (1968) believes privacy limits the degree of social control
placed on individuals and produces individuation by making one's own
distinctiveness apparent; and Bates (1964) suggests privacy limits the
degree of self disclosure and thus protects autonomy. Lee (1959) is
also a strong supporter of this argument. Halmos (1952) and Slater
(1970) while agreeing with this function, argue that privacy is
possibly overemphasised in Western Society.

Emotional Release. Support for this function can be found in Bates (1964), Merton (1948) Schenk (1972) and Schwartz (1968).

Self Evaluation. Bates (1964) is the most explicit supporter of this notion but its close relationship with the above two functions (indeed its status as a separate function is open to debate) has implicit support from many writers.

Limited and Protected Communication. As this "function" appears to be no more than a strategy used to achieve other forms of privacy it will not be treated separately.

Probably the only possible function of privacy Westin does not list is that proposed by Willis (1963). She suggests it facilitates status changes for the individual by protecting them during vulnerable passages through developmental "no man's land". Although Willis bases her argument on observations of working and middle class English there is support for her view in the ethnographic literature (e.g., Roberts and Gregor, 1971).

The major weakness of Westin's taxonomy of the functions of privacy is its failure to accommodate aspects of privacy which serve no obvious direct psychological function. Thus in most cultures quite strict norms govern the degree of nudity appropriate for various circumstances and unintended exposure above and beyond this cultural norm constitutes an invasion of privacy. In western cultures, for example, minimal cover of the breasts and genital area is considered acceptable exposure for females on the beach. The same degree of body cover under other circumstances would be considered highly inappropriate. The arbitrary nature of such a norm becomes apparent
when it is realized that a female may attend a beach in her bikini and feel quite comfortable but, on returning home be embarrassed if seen by others in her underclothes. The great cultural diversity which exists in nudity norms suggests that no direct psychological function is served by the selective exposure of particular parts of the body (except, of course, under special circumstances such as hiding a body abnormality). It thus appears that some privacy norms serve either no function at all or, more plausibly, serve a sociological function. Coser (1961) and Madge (1950) also make this point and it is implicit in much of the sociological literature on deviance.

It may thus be appropriate to divide privacy seeking behaviours into those that serve an individual's psychological needs and those which are culturally ordained. The psychological needs, as previously discussed, revolve around the development and maintenance of individuality and the protection of the extant personality. The former might be considered to have an "optional" element determining the amount sought but the latter (personality protection) is obviously close to a biological necessity. Laufer, Proshansky and Wolfe (1973) adopt a similar argument in discussing the developmental consequences of privacy deprivation.

One of the more interesting but least understood aspects of privacy relates to the differing emphases accorded individuality (and, by implication, the privacy necessary to achieve it) by various cultures. Thus Hollander (1963) describes the strong ideological stance against individualism evident in China at that time. Presumably the lack of individuality associated privacy
would be less stressful under such a system.

The influence of cultural and presumably subcultural and individual differences in the extent to which individualism is encouraged seems to indicate that the only innate facet of privacy need is that associated with personality protection i.e., generally concerned with the "stimulus overload" protection function of privacy. However even if the personality protection forms of privacy are biologically based it does not necessarily follow that individual differences in need will not occur.

Thus three basic components of privacy (cultural forms; individuality forms; and personality protection forms), each based on a different psychosocial mechanism (namely cultural socialization, developmental experience and biological requirement respectively), seem to exist. To specify the privacy requirements of any individual will thus involve attention to each of the three forms.

Common use of "privacy" as an umbrella term suggests that all privacy violations involve the same mechanisms and, more importantly, the same consequences. However the three dimensional model of privacy posited above suggests different consequences depending on the form of privacy violated and the psychosocial context in which the violation occurs. This simple but critical proposition does not appear to have been articulated previously.

Conclusions

A multidimensional model of privacy is indicated by the available literature. Each of the three postulated functional
dimensions appears to have a different origin and violation of each dimension may produce different consequences. Normally privacy is protected by a variety of cultural, subcultural and microcultural behaviours which may operate in conjunction with, or in the absence of, appropriate environmental props. The significance of such props is probably dependent on the cultural homogeneity pertaining in any particular situation. Thus where normative heterogeneity exists individuals find it necessary to resort to the relatively cumbersome technique of environmental screening in order to obtain and maintain the desired level of privacy.

Western cultural privacy norms are only partly accommodated by contemporary architectural practices. For example, the usual specifications for domestic dwellings acknowledge the norm that sexual activity should be visually screened but ignore acoustic privacy for the same activity. It is not entirely frivolous to suggest that the architectural practice of ignoring the acoustics of bedroom walls has contributed to the dispersal of the extended family.

The mismatch between privacy norms and modern architecture is almost certainly reduced because of the continued provision for body elimination privacy in our society. Kira (1966) and Humphreys (1970) detail some of the numerous non elimination uses to which the modern lavatory is put. In the modern home and the office the lavatory is almost the only remaining space in which an individual can be certain of achieving a degree of visual isolation.

When cultural norms protecting privacy are not operating and
when environmental screening cannot be achieved the individual is left with only two options. He or she can accept that privacy cannot be maintained and attempt to adjust to that fact; or antisocial behaviour (e.g., becoming aggressive in order to dispel the potential privacy invader) can be used. The consequences of both strategies will vary according to the circumstances but neither is likely to prove as acceptable as proper provision for privacy.

In the previous chapter it was suggested that the concept of privacy might provide useful clues in the search for variables which mediate the subjective experience of social crowding. The analysis of privacy outlined above supports the suggestion that privacy mediates the experience of crowding via cultural, social, psychological and environmental processes. Like crowding, privacy appears to be a multidimensional concept and the consequences of privacy violation depends on the form violated. In essence this means that social crowding occurs in three forms which correspond to the three dimensions of privacy. Research based on this model would thus have to recognise that loss of privacy may occur via cultural norm violations; by inhibiting the expression of a person's individuality; or by subjecting the individual to unwanted sensory stimulation. The difficulties involved in devising simple measures of any of the above psychological reactions to the loss of privacy suggests that multivariate techniques are likely to be necessary for adequate research into privacy.

The main implication for the study of crowding suggested by the foregoing is that crowding should be studied in situ. The artificial environment of the laboratory and the short period of time subjects
may ordinarily be constrained there mitigates against the normal functioning of behaviours associated with privacy. Even under carefully contrived simulated conditions it is unlikely that normal privacy behaviours occur because of the time required for microcultural norms to develop.

The literature suggests that the influence of environmental features on the experience of privacy may in some circumstances be almost negligible and in others be both subtle and significant. For this reason any study of privacy should include the comparison of quite different environments as well as detailed study of interactions within each environment.

In summary, the main implication for the study of crowding to emerge from this review is that multivariate research in a natural setting is likely to be the most fruitful. The present common practice of using a handful of dependent variables measured against a simple density measure in a laboratory for short duration has minimal validity if the present analysis is correct.
Analysis of the literature suggests that the experience of social crowding is intimately related to the attainment of privacy. In turn, privacy attainment depends on the complex and often subtle interaction of cultural, psychosocial and environmental variables. The present chapter describes an exploratory study designed to determine the feasibility of testing the above hypotheses in student residences.

After a detailed examination of the literature on privacy it was concluded that behaviour in natural environments would be the most appropriate to study. It was also concluded that extended experience of these environments by the individuals concerned was necessary to permit the development of microcultural norms. Student residences met these criteria and have the additional advantages of physical accessibility and a relatively homogeneous population.

The literature indicated that the design features of the environment may be a powerful factor influencing the experience of privacy. For this reason it will be necessary to describe the research environments in some detail.

The Australian National University offers students the choice of a number of different residential environments ranging from collegiate style residences with religious affiliations through
university run traditional dormitory residences to a largely self administered suite style residence. This latter residence, known as Toad Hall, consisted of suites accommodating 5, 10 or 12 residents. Each suite contained study bedrooms, kitchen, bathroom facilities and a lounge dining room. Superficial examination of its design and informal discussion with residents suggested the attainment of privacy within these suites might be difficult.

Two useful comparison environments were available. One of these was a traditional dormitory residence known as Burton Hall. The basic design of this residence consisted of two detached dormitory blocks served by a dining room and lounge. Burton Hall's design appeared to offer opportunity for its residents to remain anonymous, uninvolved and physically isolated if they so desired. Privacy may thus be easier to attain in Burton Hall than Toad Hall.

The other promising comparison environment was a suite style residence located at another tertiary institution in Canberra, the Canberra College of Advanced Education. The academic aims of this institution differed slightly from those of the university but the residents were assumed to be similar to those at the university. The residence was geographically isolated from urban facilities and this was expected to increase the potential for privacy infringement within the residences because of enforced interaction.

A number of possible research strategies were considered for the study before choosing a combination of observation (structured and unstructured), psychometric questionnaire and interview. Unobtrusive naturalistic observation was indicated as a very
fruitful technique for this type of study but was ruled out for ethical reasons and because of the difficulty of implementing it in student residences.

The Environments

Toad Hall

This residence was first opened in the early part of 1974. It is a three storey walk-up building designed generally in a boomerang shape and is located on the northern edge of the Australian National University (ANU) campus. The name, derived from its picturesque setting of weeping willows and creek, is indicative of the occupier management ethos designed into the residence. Before the university authorities had formally decided on a name for the residence, residents constructed and erected a large and professional looking sign on the wall of the residence proclaiming its name as "Toad Hall". Despite its lack of levity the name chosen by the residents has now achieved official acceptance, although it frequently appears in quotation marks in university documents.

The university authorities decided that mature students would cope better with the self help lifestyle designed into Toad Hall and an embargo on first year students was raised. The novelty of the Toad Hall concept on campus, the unavailability of off-campus accommodation and a degree of dissatisfaction with traditional residences meant that, despite the selection criteria, there were almost four applicants for every available place when the residence first opened. Selection was made on a "lottery" basis. The manageress allocated rooms to residents on an arbitrary basis.
The interior design of the Hall contained a number of interesting architectural features. The first and most startling was the use of most of the ground floor as a semi-enclosed accessway. This area was dark and of unpainted concrete and was a favourite parking area for bicycles and motor bikes. Its uninviting appearance was made worse by the fact that it acted as a wind tunnel during winter. It is not surprising that this area, the only potential residence "melting pot" area, was deserted but for people making their way to or from their suites and the occasional person using the public telephones. Once out of this accessway the resident was still faced with walking up a circular staircase housed in a dark and rather dank stairwell. The stairs opened directly into each suite's lounge.

Perhaps the most significant architectural feature of Toad Hall was the virtual elimination of connecting corridors. The whole residence consisted of a complex of interconnected suites stacked immediately adjacent to each other so that only a single doorway and a few feet of hallway separated the lounges of neighbouring suites. In fact the suites at the very end of the residence were accessible only by the stairwell and lounge of the neighbouring block. This aspect of the design, while no doubt an economical use of space, forced the lounges to double as corridors so that a person in suite A had to proceed through the lounge of suite B in order to visit suite C (see Diagram 4.1). The design feature involving the "front" door opening from the stairwell directly onto the lounge room also increased the waiting room/corridor atmosphere which tended to pervade the lounges. Not surprisingly the lounges were minimally used in most suites.
Diagrammatic Representation of Relationship Between A (5) and B (10) Suites.

KEY
C Study bedroom
D Kitchen
E Stairwell
F Passage
G Bathroom-toilet
The suites themselves were almost identical except that the ground floor and end units were half units. These units housed five residents and the remainder housed ten. Three of the 10 resident suites were modified to accommodate 12 people by providing an extra double bedroom. As can be seen in the accompanying diagram (Diagram 4.2) the suites consisted essentially of a kitchen and lounge slightly set off from each other with private study-bedrooms strung around the circumference. Each suite contained its own toilet and bathroom facilities but clothes washing machines were housed on the ground floor and were not tied to suites. Adjacent to each kitchen was a dining table which could accommodate 4 or 5 people.

One interesting aspect of the suite design concerns the size and provisioning of the kitchens. Each 5 resident suite contained one standard size stove with oven, grill and hot plates while the 10 and 12 resident units provided two such stoves. It became apparent very quickly that these facilities were inadequate, particularly in the larger suites, and considerable criticism was forthcoming from the students. Folklore at the time suggested that the architect's brief concerning kitchens was based on the assumption that the proximity of the residence to the university cafeteria (perhaps 150 metres) would cause the residents to use the kitchens mainly for "snacking". In fact cafeteria eating seemed to be quite rare and the numerous meals I observed being prepared and consumed were invariably substantial. Almost every evening in every suite guests were observed being feted by one or two residents in a private dinner party. These meals were usually scheduled after the main eating time of 6 to 7 pm and often included trimmings such as
wine and candles.

The study bedrooms each contained a bed, desk, bookcase, drawers, chairs and curtained hanging area. The rooms were irregular in shape and this drew favourable comments from most residents. There is a degree of flexibility with respect to furniture arrangement but this was difficult to take full advantage of as a heater is attached to the wall about 12" from the floor. Sound insulation between rooms appeared to be reasonable but the light wooden doors provided little auditory screening from the kitchen and lounge.

Neither bathrooms nor toilets were distinguished by sex. Shower recesses contained an area for changing adjacent to the handbasins and the bathrooms could thus accommodate 2 people at once. There was one bathroom and one toilet per 5 residents. The toilets are separate cubicles featuring full doors and walls rather than the common institutional three-quarter walls and doors.

The administration of Toad Hall consisted of a combination of hired manageress and elected residents' governing body. At the time of the exploratory study the manageress was responsible for coordinating cleaning services, maintenance, room allocation and the like but also seemed to engage in considerable counselling and other interpersonal work. Unsolicited opinions from residents were almost universally favourable to the manageress and it seemed that her energetic, extroverted but compassionate personality was ideally suited to the needs of the residents at the time.
Diagrammatic Representation of Ten Person Suite: Toad Hall

**KEY**
A Study-bedroom
B Shower recess
C Toilet
D Washroom
E Dining Table
F Coffee table
G Lounge Chairs
H Stair Well
I Kitchen
J Access to adjacent suite
K Corridor
Burton Hall

Burton Hall was a staid looking, red brick residence located on the western side of the campus. It was one wing of a dual residence arrangement with another residence (Garran Hall). The overall architectural design of the residence consisted of two, three-storey dormitory blocks served by a single dining room and lounge. The two detached dormitory blocks consisted of two rectangular units slightly offset from each other. Each unit housed 18 students plus bathroom and was usually referred to as a "floor".

One important aspect of the organization of the hall was that the top floor of each wing was sexually desegregated. In general only the more mature students were resident on these floors. As there was a general wish to be upwardly mobile (as it were) the management of the hall was able to maintain the arrangement without difficulty.

The interior of each dormitory block was a fairly conventional "circular" corridor bearing the study bedrooms on its outer wall and the bathroom-toilet block on its inner wall. The stairs were internal. The Burton Hall dormitory layout is depicted in Diagram 4.3.

Each study-bedroom in the Hall contained a hand basin and power point suitable for an electric kettle in addition to the standard dormitory furniture. In general the fittings and the overall decor of the rooms could be described as "standard institutional".

The bathroom-toilet areas were gradually desegregated by the
residents. Despite the rather unsuitable design (e.g. three quarter walls in toilets) they seemed to function without incident. Each bathroom contained 3 fully enclosed shower/changing rooms and 3 toilets. Each ablution block served approximately 18 residents. Adjacent to each toilet block was a small utility room opening on to the corridor and containing a refrigerator and ironing board.

The dining and lounge rooms serving Burton Hall were large and institutional in appearance. Furnishings and decorations were unexceptional and did little to relieve the institutional atmosphere pervading the Hall.

Burton Hall was administered in the traditional way with a hierarchy headed by a warden (a senior academic), a system of tutors who lived in the dormitories and who functioned as prefects, mainly in relation to noise control, and academic and personal counsellors. Alongside this arm of the hierarchy was a manager-led team of cooks, cleaners, etc. who cared for the daily needs of the residents.

Canberra College of Advanced Education Residence.

The Canberra College of Advanced Education is located about 8 kilometres from the city centre in Bruce, one of the new satellite areas of Canberra. The whole College complex was only three or four years old and was adjacent to a new town centre which, at the time of the study, was still in the early stages of construction. The actual location of the College was well off the main arterial road system and was 3 kilometres from the nearest suburban shopping centre. Again, at the time of the study the public transport system serving the College, especially in the evenings and weekends, had few
Diagrammatic Representation of Dormitory Wing: Burton Hall

**KEY**
- A Study-Bedroom
- B Corridor
- C Ironing Room
- D Storeroom
- E Shower Recess
- F Toilet
- G Stairwell
scheduled services. Residents without their own transport often complained of being isolated.

The residences were located on the north-west side of the college campus about four hundred metres from the main college buildings. The path linking the residence to the rest of the college crossed an open and windswept field which increased the apparent isolation of the residences. All these factors combined to give the residence complex a distinctly remote and sometimes even desolate atmosphere. The residence buildings were dull grey brick, squat in shape, and had small windows. Residents frequently described them as being prisonlike in appearance, a description that did not seem entirely without basis.

The residence complex consisted of three-storey blocks of suites arranged more or less around a central courtyard. The basic architectural concept internally was similar to the suite design described for Toad Hall. A cluster of study-bedrooms served by kitchen, dining room and bathroom facilities. The principle differences were that there was no provision for a separate lounge. Instead the kitchens were large and contained a long table providing adequate seating for all fourteen residents of each suite. The kitchens were thus designed to function as "family rooms" as well as for cooking. Their usage in this respect varied from suite to suite but the design generally seemed quite successful.

The second major design difference between the two suite style residences was that the Canberra College of Advanced Education (CCAE) residence design incorporated true access corridors. The
recreational area of the suite did not double as an accessway for other suites.

The design generally was a semi-circle of study-bedrooms arranged around the kitchen and bathroom facilities. Bedrooms contained the usual facilities and appeared to have good sound insulation through the walls and doors. A number of residents of ground floor suites complained about noise coming through the ceiling. The floor plan of a CCAE residence suite is shown in Diagram 4.4.

Like the other two residences the CCAE residence was co-educational. There were at the time of the study, however, no other residences at the College and this meant that there was no exclusion of first year students. While all three residences contained males and females generally in the 18 - 22 age group there were some differences between the populations attending the university and the college. These differences are difficult to articulate and there is little empirical data to indicate them (apart from the rural/urban background data - see Table 4.1). Nevertheless there was a sense of dealing with two groups of people each having different lifestyles, aspirations and attitudes. Some of the population differences which were particularly striking included the following:

Residents at the College seemed much more preoccupied with sexual relationships than their university counterparts. Informal conversation with College residents often produced comments concerning who was dating whom. This topic of conversation almost never occurred
**DIAGRAM 4.4**

Diagrammatic Representation of Thirteen Person Suite: CCAE

**KEY**
- A: Study-bedroom
- B: Storeroom
- C: Bathroom toilet
- D: Corridor
- E: Kitchen
- F: Kitchen table
- G: Laundry
when talking to students at the university. It appears that at the university heterosexual relationships between co-residents were either semi-permanent, living together arrangements or short casual relationships. At Toad Hall, for example, almost every suite contained an individual more or less cohabiting. At the CCAE it appeared that there was only one such couple in the entire residence.

Generally the CCAE residents seemed less preoccupied with "lifestyle" than did their Toad Hall counterparts. Toad Hall residents were usually fully aware of the significance their environment played in the achievement of a desired lifestyle. Many, for example, were initially concerned to establish a communal system within their suites. The search for an alternative lifestyle to both traditional residence life and to suburbia seemed a pressing issue for many Toad Hall residents. The CCAE residents, however, despite living in an environment affording equal if not more opportunity for such pursuits, showed complete disinterest. For them, it seemed, the residences were simply a place to live. This attitude is possibly attributable to the lack of an on-campus comparison group in the shape of a traditional residence. Demographic characteristics of the CCAE residents may also be involved (see Table 4.1). The residents' ages were not recorded but the fact that the bulk of the students were in their first or second year suggests their ages would generally be lower than Toad Hall residents. This may have coloured their attitude to the residences as well.

Tension at exam time was more or less universal at Toad Hall but seemed much less pervasive in students at the CCAE residence.
Subjectively it seemed that most of the Toad Hall and Burton Hall students spent the major part of their evenings studying in the third term but there was far less evidence of this at the CCAE. The general atmosphere of neurotic anxiety, of "uptightness", which pervaded the two university residences was almost totally lacking at the College.

Table 4.1

<table>
<thead>
<tr>
<th>Variable</th>
<th>CCAE Residents (n=30)</th>
<th>University Residents (n=71)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban background</td>
<td>53%</td>
<td>72%</td>
</tr>
<tr>
<td>Mean family size</td>
<td>3.69</td>
<td>3.84</td>
</tr>
<tr>
<td>Females in sample</td>
<td>60%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Method

During the first four weeks of the third term of 1974 (approximately mid September to mid October) students were individually approached in their respective residences by the author and asked if they would co-operate in the study. Usually an appointment was made on the first occasion to meet in the resident's room at a convenient time. Interviews generally took place between the hours of 11 a.m. and 10 p.m.

Time did not permit all residents to be interviewed and some selection had to be made. At Toad Hall the selection of suites within the three types available (5, 10 and 12 person) was random. At Burton Hall all of the third floor of two blocks were selected to make the group comparable in age and sex composition with the Toad Hall sample. The CCAE residence suites were all identical and the
decision concerning which suites to sample was made on a random basis. The sample characteristics of suite or floor types are described in Table 4.2.

Table 4.2
Sample Characteristics of Each Residence

<table>
<thead>
<tr>
<th>Residence</th>
<th>12 person suites</th>
<th>10 person suites</th>
<th>5 person suites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toad Hall</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Number sampled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample size</td>
<td>19</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Burton Hall</td>
<td>18 person floors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number sampled</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample size</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCAE Residence</td>
<td>14 person suites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number sampled</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample size</td>
<td>30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Each floor had vacancies making actual population 16.

Three different instruments were used for data collection. An individually administered interview schedule collected data on biographical details, behaviour patterns, interpersonal preferences and attitudes to the residence environment. A slightly different schedule was used for each residence (see Appendices 1, 2, and 3). At the completion of the interview residents were asked to complete two further forms at their own convenience. The first of these was a short self disclosure scale designed to provide some measure of the intimacy level within each unit (suite or floor). This instrument and its derivation are described in Appendix 4.
The other self administered instrument was the Marshall Privacy Preference Inventory (Marshall, 1972), a 56 item scale providing scores on six subscales as well as a total score (see Appendix 5).

Subjects were provided with a stamped addressed envelope for the return of these forms. Immediate return rate was 86% which increased to 94% following a reminder letter.

Data were also gathered from unstructured observations during the numerous visits to the residences. Other data came from unstructured interviews with ex-residents, cleaners, administrators and any other individuals able to provide information concerning the residences.

Results

The results will be presented as comparisons between Toad Hall and Burton Hall; Toad Hall and the CCAE Residences; and within Toad Hall according to suite types. Data used include observational, impressionistic, interview derived and psychometric. Most of the data gathered were transformed into dichotomous form and used to derive a correlation matrix. (Appendix 6).

Toad Hall and Burton Hall

The differences between Toad and Burton Halls were obvious and dramatic even for a casual visitor. One was struck, when walking around the corridors of Burton Hall by the quietness, the institutional smell of floor polish and the almost universally closed doors. People were seldom seen and all one heard were
muffled sounds of talking or stereos drifting through the doors. Toad Hall, on the other hand, presented a lively, lived in atmosphere. Numerous posters and pot plants decorated public areas, people were much more in evidence and music was often blaring through the suite. Toad Hall lounges were characterised by a feeling of informality and belongingness; Burton Hall's dining room and lounge were large, institutional and pervaded by a public aura.

Within Burton Hall and Toad Hall there is an interesting phenomenon related to territorial-like behaviour. One could walk around the corridors of the Burton dormitories and never be challenged, greeted or even acknowledged. The corridors appeared to be seen by the residents as totally public thoroughfares. In Toad Hall, by contrast, when one entered the suites (even the lounges-accessways) there was an immediate feeling of trespass. Residents inquired about your business, made you feel welcome or otherwise depending on their inclination and generally served to make it clear that the suite space was far from public. Even when there were no people in the suites non-verbal signs of personalisation made it apparent that all of the space within the suites was non-public. On one suite door, in fact, this was made quite explicit by a large scrawled sign reading "This is our home!" Curiously even within individual's rooms there seemed to be more attempts to personalise the environment in Toad Hall.

Behaviour in relation to refrigerators differed markedly between Burton and Toad Halls. All Toad Hall refrigerators were fitted with a battery of cages so that each person had a lockable space within the refrigerator. According to informants, perhaps
one or two percent of all Toad residents actually locked these. Each Burton Hall floor was also provided with a small refrigerator housed in the ironing room on each floor. These refrigerators were apparently never used because of the pilfering which occurred. One resident described how some zoological specimens she placed in the refrigerator one night had disappeared the next day. The data provided in Table 4.3 provides some empirical support for the impressions listed above.

Table 4.3

<table>
<thead>
<tr>
<th>Social Climate Indicators for Toad Hall and Burton Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Residents normally keeping their door shut.</td>
</tr>
<tr>
<td>Average time per day spent in communal areas</td>
</tr>
<tr>
<td>Residents who would display affection in the lounge room</td>
</tr>
<tr>
<td>Residents wearing dressing gown (versus towel) to bathroom</td>
</tr>
<tr>
<td>Mean personalisation score (1 to 5 scale). See Appendix 1</td>
</tr>
</tbody>
</table>

Another clear difference between the two residences emerged during collection of the data. There is little quantitative evidence to substantiate the following observations but numerous subtle indications of their validity were recorded in the interview notes. The difference referred to is one of "lifestyle". Toad Hall seemed
to accommodate a variety of lifestyles (to use the term loosely) while in Burton Hall there seemed to be a more or less predetermined lifestyle imposed on the residents. Obviously regimentation via scheduling of meals and bar opening hours facilitates this process but probably the major factor is the Hall "spirit" which was fostered by the staff and the more "institutionalised" of the resident students. This spirit was maintained in the time honoured way of tradition, ceremony, and competitive interchange with other similar residences.

The overall satisfaction of residents was tapped by asking them whether they intended to return to that residence next year. As can be seen the Toad Hall sample indicated a much greater inclination to return than the Burton Hall residents. This apparent satisfaction of the Toad Hall sample may have been due to a variety of factors and psychosocial or design variables were not necessarily important. For example the long waiting list of prospective Toad Hall residents from the other halls and elsewhere helped maintain an elitist ethos at Toad Hall and thus increased its attractiveness as a place to stay. In addition, alternative accommodation for students seeking a self sufficient lifestyle was almost non-existent. Canberra was experiencing a severe housing shortage at the time and students found it almost impossible to rent suitable houses and flats.

The relative dissatisfaction of the Burton Hall sample seems to be partly a function of the rapidly escalating cost of maintaining services for students (cooking, cleaning rooms, laundry, etc.) which had to be passed on to the residents via fee increases. There was possibly some dissatisfaction with the quality of life experienced by
the residents of Burton Hall but residents were unable to articulate this with any clarity.

An interesting aspect of the residential intentions variable is that the Toad Hall residents who expressed the desire to return were usually quite explicit about the features of their life in Toad Hall they considered to be of positive value. The Burton Hall residents who expressed satisfaction were almost universally of the opinion that life was satisfactory in Burton Hall because most of the chores were taken care of by servants. In essence an active involvement in the day-to-day details of living was enjoyed by Toad Hall residents; a passive role by Burton residents. It seems unlikely that such basic differences could be environmentally determined so self selection of environments must be presumed to underlie this difference.

Table 4.4
Residential Intentions of Toad Hall and Burton Hall Residents

<table>
<thead>
<tr>
<th></th>
<th>Toad Hall (n=35)*</th>
<th>Burton Hall (n=12)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend to return next year</td>
<td>89%</td>
<td>50%</td>
</tr>
</tbody>
</table>

* Note that the small n's are a function of a number of students being in their final year.

The patterning of social life within the two residences also revealed distinct differences. These are most vividly indicated by the fact that it had been intended to construct proximity based sociograms for both Burton and Toad Halls. However discussions
with ex-Burton residents before implementing the study suggested this would be futile. Thus although data concerning friendship choices within Toad Hall suites could be (and were) gathered it was not feasible for Burton Hall because very few knew even the names of more than a few of their floor co-residents. Some did not know the names or even the sex of their immediate neighbours. The mean number of names of co-floor residents known per sampled residents was 6 (range 0 - 12) out of the 18 on each floor. Not surprisingly the propinquity factor operated and generally the closer a co-resident lived the more likely it was that his/her name would be known.

Table 4.5 sets out a number of empirical indications of the differences in social climate between the two residences. The greater degree of localised interpersonal activity of Toad Hall over Burton Hall is evident in most measures. It should be noted, however, that the Burton Hall friendship pattern is diffused throughout the residence. This is not directly apparent from the data but is well known among the residents and was frequently pointed out to me. Thus while the social unit in Toad Hall was based on the living group proscribed by the suite, the social group in Burton emerged in quite a different manner.
Table 4.5

Comparison of the Social Climate of Toad Hall and Burton Hall

<table>
<thead>
<tr>
<th></th>
<th>Toad Hall (n=48)</th>
<th>Burton Hall (n=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents having at least one good friend on suite/floor.</td>
<td>33%</td>
<td>17%</td>
</tr>
<tr>
<td>Residents having at least one good friend in same Hall.</td>
<td>40%</td>
<td>80%</td>
</tr>
<tr>
<td>Residents on floor/suite classed as acquaintances (versus friends) per resident</td>
<td>3.0</td>
<td>14.7</td>
</tr>
<tr>
<td>Residents on floor/suite who perceive themselves to be similar in attitudes and interests</td>
<td>48%</td>
<td>4%</td>
</tr>
<tr>
<td>Social events the suite/floor has engaged in as a whole during the year (Mean estimate)</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Residents who would like to know others in suite/floor better</td>
<td>35%</td>
<td>34%</td>
</tr>
</tbody>
</table>

The locus for the Burton Hall social unit was the dining room. Here stable groups of residents (see Table 4.6) ate together, often at the same table every meal, on an exclusive basis. The cohesion was such that leaving one's regular group to join another was considered a difficult process, almost analogous to inviting one's self to dinner at another person's home.

Table 4.6

<table>
<thead>
<tr>
<th>Size of Burton Hall Dining Room Groups</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean size of group</td>
<td>7.25 persons</td>
</tr>
<tr>
<td>Range in size</td>
<td>4 - 12 persons</td>
</tr>
<tr>
<td>Residents who do not belong to a group</td>
<td>0 persons</td>
</tr>
</tbody>
</table>
The influence and durability of these groups is difficult to overemphasise. Most of the groups even possessed a certain perpetuity in that new recruits were acquired each year as the senior ones from the previous year graduated and left. A remarkable feature of the group was that a resident's affiliation to a particular group was usually established within the first week of residence. Sometimes the initial factor determining allegiance to a group was the presence of a sibling or a close friend; sometimes geographical origins (especially in the case of country residents); sometimes sexual (attractive females are energetically solicited to join groups by unattached males); and probably for a good proportion, quite random. Whatever the basis of selection it was not uncommon to find third, fourth or even fifth year students acknowledging that their best friends were established in the above manner.

Another social convention existed to maintain the Burton Hall friendship group. At some stage during the evening, usually around 9 or 10 p.m., the group met in one of the member's rooms for coffee. In some groups this activity seemed to be highly ritualised with the meeting place passing from one individual's room to another in strict rotation on successive nights. Most groups, however, seemed to have a much more informal arrangement.

Unfortunately it is not possible to compare directly the gregariousness in terms of friendship group size of residents in the two residence Halls. The fact that the eating group sizes seem to mirror quite closely the Toad Hall suite sizes suggests that the group sizes are quite similar. Thus although the geographical location (i.e., room location) of the social group is localised in
the case of Toad Hall and diffused in the case of Burton Hall, the overall gregariousness of individuals in the two residences appears to be quite similar.

The psychometric data provided by the Privacy Preference Scale (PPS) are set out in Table 4.7. The PPS scale provides six subscales based on the strategy used to achieve privacy and an overall score. None of the differences between the two residences are statistically significant. This finding is surprising given the many other differences characterising the two residences and will be discussed at greater length later.

Table 4.7

<table>
<thead>
<tr>
<th>Variable</th>
<th>Toad Hall (n=47)</th>
<th>Burton Hall (n=20)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intimacy</td>
<td>31.09</td>
<td>29.45</td>
<td>1.69</td>
</tr>
<tr>
<td>Not neighbouring</td>
<td>19.68</td>
<td>21.65</td>
<td>1.74</td>
</tr>
<tr>
<td>Seclusion</td>
<td>29.34</td>
<td>29.50</td>
<td>0.10</td>
</tr>
<tr>
<td>Solitude</td>
<td>26.72</td>
<td>25.50</td>
<td>1.07</td>
</tr>
<tr>
<td>Anonymity</td>
<td>15.09</td>
<td>14.55</td>
<td>0.56</td>
</tr>
<tr>
<td>Reserve</td>
<td>20.45</td>
<td>22.10</td>
<td>1.60</td>
</tr>
<tr>
<td>Total PPS</td>
<td>177.19</td>
<td>178.10</td>
<td>0.02</td>
</tr>
</tbody>
</table>

* Note that the higher the score the greater the preference for privacy. None of the t values are significant at the 0.05 level of significance.

In general it is possible to argue that the architectural and organizational concepts of the two Halls exert considerable
influence on the patterning of social relationships. Although the Toad Hall concept facilitates social interactions on a proximity basis (i.e., within suites) and the Burton arrangement operates on a central mixing area (the dining room) the overall level of socializing appears to be quite similar. This may be an example of what Proshansky et al. (1970) have called "conservation of behaviour". Changing the environment will often change the location of a behaviour but usually the behaviour itself will persist.

The most surprising and disappointing aspect of the comparison concerns the apparent failure of Marshall's Privacy Preference Scale to discriminate between the two populations. Intuitively there seemed a strong likelihood that Toad Hall residents would face considerable problems with the attainment of privacy and that Burton Hall residents might almost suffer from it to excess. It is possible that the PPS is a trait sensitive rather than a state sensitive instrument.

Toad Hall and the CCAE Residence

Comparing the effects of the two environments represented here is complicated by the apparent population differences discussed earlier. If these differences are not too powerful responses of the individuals in these two environments should provide useful insights into the significance of geographical locale and possibly minor architectural differences. The social climate data summarised in Table 4.8 suggests that there are differences between the residences. The most striking of these concerns the time spent in the communal areas. The time the CCAE residents spend in their
kitchen-family room area exceeds by almost an hour per day that spent by Toad Hall residents. Unstructured observations support this figure. It was not unusual to find six or more CCAE students sitting around the table, some reading or writing assignments, others chatting, and a radio or stereo or TV turned on as well.

Table 4.8
Comparison of the Social Climate in Toad Hall and the CCAE Residence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Toad Hall (n=47)</th>
<th>CCAE Residence (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents normally keeping their door shut.</td>
<td>62%</td>
<td>47.5%</td>
</tr>
<tr>
<td>Average time per day spent in communal areas.</td>
<td>1.48 hours</td>
<td>2.45 hours</td>
</tr>
<tr>
<td>Residents who would display affection in the lounge room</td>
<td>50%</td>
<td>76.7%</td>
</tr>
<tr>
<td>Residents wearing dressing gown to bathroom</td>
<td>48%</td>
<td>63.3%</td>
</tr>
<tr>
<td>Mean personalisation score</td>
<td>3.1</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Qualitative as well as quantitative differences also appear to exist. The data is a little contradictory, however, in that two indices of informality existing within the group (affectional displays in public, and bathroom attire) show reverse trends. Subjective impressions were that the subcultural norms of the CCAE group dictated the relatively puritanical dress code and that the affectional display data is a more accurate index of the informal social climate existing in the CCAE residence. Certainly the visitor to the college residences is impressed by an aura of relaxed social cohesion which contrasts strikingly with the intense, serious and often rather "uptight" social atmosphere that seemed to pervade Toad Hall. Why these differences should occur is not clear.
Table 4.9

Social Contacts in Toad Hall and the CCAE Residence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Toad Hall (n=47)</th>
<th>CCAE Residence (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents having at least one good friend in suite.</td>
<td>33%</td>
<td>53%</td>
</tr>
<tr>
<td>Residents having at least one good friend in same hall.</td>
<td>40%</td>
<td>57%</td>
</tr>
<tr>
<td>Mean number of residents in suite classed as acquaintances (versus friends) per resident.</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Residents in suite who perceive themselves to be similar in attitudes and interests to most co-residents.</td>
<td>48%</td>
<td>67%</td>
</tr>
<tr>
<td>Mean number of social events suite as a whole has engaged in during year (mean estimate).</td>
<td>21</td>
<td>42 *</td>
</tr>
<tr>
<td>Residents who would like to know others in suite better.</td>
<td>35%</td>
<td>43%</td>
</tr>
</tbody>
</table>

* Note extreme range represented by the mean: 100 approx for one group; 4 per year for another group.

The data in Table 4.9 gives some indication of the quantitative differences in social structure characterising the two residences. There seems to be a definite trend towards an inward turning approach in the CCAE sample with respect to formation of friends. The lack of an alternative source of friends is probably the origin of this finding. The CCAE is geographically isolated, has been in operation for a shorter time, and contained no other on-campus residence to provide an alternative source of friends. This aspect of the residence social psychology is possibly central to the overall finding of a more socially cohesive group at the CCAE residence.
The other data in Table 4.9 are generally supportive of the above comments. The CCAE residence groups socialize more, tend to make more friends among their co-residents and, if anything, would prefer their relationships to be even more intimate. The Toad Hall residents have all had at least one year at the university often at other halls of residence. They bring with them a set of relationships external to the residence and this reduces the probability of their friends being drawn from within the suite or residence.

The residential intentions data reported in Table 4.10 suggest that there is little difference in satisfaction between the two groups. Despite the geographical isolation of the CCAE residence, its popularity is almost as high as that of Toad Hall. The absence of alternatives on campus accommodation may help offset the effects of isolation but the popularity of the two forms of suite-style residence is clear.

Table 4.10

<table>
<thead>
<tr>
<th>Residents intending to return to their residence next year</th>
<th>Toad Hall (n=35)</th>
<th>CCAE Residence (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>89%</td>
<td>86%</td>
</tr>
</tbody>
</table>

There is a slightly increased level of self disclosure among the residents at the CCAE Residence. This seems reasonable given the increased contact hours and greater expressed friendship. (See Table 4.11)
Table 4.11
Mean Self Disclosure Score for Toad Hall and CCAE Residences.

<table>
<thead>
<tr>
<th></th>
<th>Toad Hall</th>
<th>CCAE Residences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Disclosure Score</td>
<td>5.65</td>
<td>6.10</td>
</tr>
</tbody>
</table>

Note that the scores are corrected for gross numbers in each unit.

Although there is no significant difference between the total Privacy Preference Scores for the two residences, two of the subscales do show statistically significant differences (see Table 4.12). These two subscales are Solitude and Reserve. Solitude refers to the state of being physically alone and the greater desire for this among Toad Hall residents is difficult to explain. It may be that norms concerning the recognition of an individual's right to solitude in their study-bedrooms were not as well developed in Toad Hall. Alternatively it is possible that population differences exist between the populations of the two residences such that the Toad Hall sample needed more solitude. This latter interpretation coincides with the impressionistic description of the two residences outlined above.

Table 4.12
Mean Privacy Preference Scores for Toad Hall and CCAE Residence

<table>
<thead>
<tr>
<th>Variable</th>
<th>Toad Hall (n=47)</th>
<th>CCAE Residence (n=50)</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intimacy</td>
<td>31.09</td>
<td>31.87</td>
<td>1.05</td>
</tr>
<tr>
<td>Not Neighbouring</td>
<td>19.68</td>
<td>20.03</td>
<td>0.35</td>
</tr>
<tr>
<td>Seclusion</td>
<td>29.43</td>
<td>29.47</td>
<td>0.03</td>
</tr>
<tr>
<td>Solitude</td>
<td>26.72</td>
<td>24.73</td>
<td>2.14 *</td>
</tr>
<tr>
<td>Anonymity</td>
<td>15.09</td>
<td>15.23</td>
<td>0.18</td>
</tr>
<tr>
<td>Reserve</td>
<td>20.45</td>
<td>22.83</td>
<td>2.67 *</td>
</tr>
<tr>
<td>Total PPS</td>
<td>177.19</td>
<td>184.71</td>
<td>1.90</td>
</tr>
</tbody>
</table>

* p < 0.05
Items making up the Reserve subscale of the PPS are of the following type. "Acquaintances often ask questions that I consider rude and personal" and "I would be very upset if a friend read something I had written or my personal correspondence without my permission". The subscale thus appears to be concerned mainly with the control of personal information distribution. On this subscale the CCAE Residence population scores statistically higher, a result in line with the relatively closed community which appears to exist there.

In general, the comparison between the two residences is interesting despite the population characteristic complications. Disentangling the effects of demographic and other variables from situational ones is not possible given the present study but indications are that the geographical variable is of considerable potency. In general, the architectural concept of Toad Hall and the CCAE residence is similar and the pattern of social interactions also similar. Whether the greater within-suite cohesiveness of the CCAE Residence should be attributed to minor architectural differences is unclear but there seems just cause for suspecting that the "family room" approach used in the CCAE Residence is eminently suitable for that group. There is no obvious reason why it would not prove equally successful with university students. The absence of flow through traffic in the suite is another positive feature for the CCAE Residence which hardly needs stating.

**Within Toad Hall Comparison**

Before discussing the different characteristics of the three sizes of suites some general comments on Toad Hall are appropriate.
The non-institutional atmosphere pervading Toad Hall was emphasised when the residence was compared to Burton Hall. It should be noted that this description is relative because the atmosphere of Toad Hall, while not institutional in the sense of a residence like Burton Hall, still retains some institutional features. Thus comparing Toad Hall to a student union would be more accurate than to an off-campus house or flat. In the day-to-day lives of the residents the most powerful (and irksome) reminder of this institutionalism was the totally "public" laundry system. That is, rather than having one set of washing facilities for each unit or sub-group of units, all of the facilities (all on ground level) are available to any resident. The frequent complaints about cleanliness, availability and durability of these machines is possibly an indictment of the arrangement.

The structure and characteristics of friendship groups were not investigated as their nature only became apparent as the study proceeded. Toad Hall groups defined by the suite system were, of course, investigated and the great variety of lifestyles evident within architecturally contiguous groups was quite striking. The combination of this variety (as exemplified by dietary habits, temporal scheduling, leisure pastimes, tastes in music, etc.) with enforced interaction is the bane and beauty of a residence such as Toad Hall. Individuals of differing views are thrust together and mindless prejudices are thus difficult to maintain although the variety (one block had an evangelical fundamentalist living close by the Secretary of the Marijuana Legislation Society) inevitably produced friction and in some cases severe interpersonal stress. Tensions, however, were only rarely expressed in terms of personal
animosities. They were usually centred around the issues of late night noise and kitchen cleanliness. As an outsider the concern regarding the former seemed justified and the latter rather exaggerated but this possibly reflects personal attitudes.

Regardless of suite size there was a striking degree of isolation between different suites. Although there were between-suite friendships at the individual level these were invariably formed outside Toad Hall. The correlation between friendship or even acquaintanceship and physical proximity outside the suite would probably approach zero. The reasons for this inhibition of neighbouring are not clear but may relate to the fragile separation of suites (a swinging door) and the system of lounges doubling as between-suite access corridors.

Another behaviour which seemed to occur irrespective of suite size concerns the development of a kind of "incest taboo" between the members of each suite. Evidence concerning this facet of residence life was not systematically gathered but so far as could be determined sexual relationships between individuals in the same suite was rare. Two such relationships of a relatively permanent nature did develop and led to one person in each pair shifting to another suite although both relationships continued. In a third case a couple who had lived in different suites declined the opportunity to occupy the same suite when a vacancy occurred but still maintained an enduring (within the time span of the study) relationship. This incest taboo-like behaviour is usually rationalised in terms of the emotional difficulties which arise in the event of the relationship breaking up but the relative absence
of even casual liaisons suggests that such an explanation is, at best, only partly true. Perhaps familiarity really does breed contempt, or at least reduce sexual attractiveness.

Almost every suite, regardless of size, seemed to possess a "stranger in residence". The habits of such an individual made him/her a virtual non-entity in the group. For some reason the term "shadow" was used generically to describe such individuals. Examples include individuals who returned to their suites very late at night and left early each morning and who never ate in the suite; individuals who kept up the rent but who used their rooms only rarely, perhaps once every week or two; and an individual who chose to withdraw to such an extent that his behaviour amounted almost to autism. Although he was physically present much of the time his rate of verbal, or even non verbal, participation in the group's activities was minimal.

A finding of some surprise concerned the very limited amount of sharing within the suites. Although there were numerous residents who worked in pairs, the number who cooked solo and who refrained from any communal behaviour (e.g., cooking together, buying food together, washing up together) seemed out of step with the communal ethic which was verbally supported during discussions with the residents. This lack of sharing was most evident with respect to alcohol consumption. I frequently observed males sitting in a group get up and fetch themselves beer from the refrigerator without offering any to their (beerless) companions. Table 4.13 describes one aspect of sharing, namely the size of cooking and eating groups in the different suites.
Table 4.13

Toad Hall: Size of Cooking-Eating Groups

<table>
<thead>
<tr>
<th>Suite size</th>
<th>No. of people in suite per cooking group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
</tr>
</tbody>
</table>

The absolute size of the kitchen in each of the 3 suite types (5, 10 or 12 students per suite) was almost identical although the 10 or 12 person suites had double the facilities of the five person suites. The size of the kitchen was such that the 5-suite residents found them satisfactory. For 10 people they were inadequate and for 12 very inadequate. Although little formal scheduling of kitchen use occurred most of the residents adapted their time-tables to periods of light use whenever possible. An indication of the use of stoves is provided in Table 4.14.

Table 4.14

Use of Kitchen Facilities

<table>
<thead>
<tr>
<th>Suite size</th>
<th>Mean number* of Cooks per suite per evening</th>
<th>Mean number* of Cooks per stove</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>10</td>
<td>9.0</td>
<td>4.5</td>
</tr>
<tr>
<td>12</td>
<td>8.5</td>
<td>4.25</td>
</tr>
</tbody>
</table>

* This figure derived by averaging resident estimates.
One of the interview schedule items was designed to permit the construction of sociograms for each suite. The usefulness of these is somewhat reduced by having one or two non-respondents in some groups and having, overall, a very small sample. The trend which seemed to emerge was that the 12 person groups split into two more or less self contained groups; the 10 person groups existed as a diffuse whole; and the 5 person suites were a single contracted group. The sociograms constructed for a 10 and a 12 person suite are depicted in Diagrams 4.4 and 4.5.

In many ways the 5 person groups are the most interesting of the three suite types in that the degree of social cohesion and particularly atmosphere evident in them ranged from one extreme to the other. As an outsider I would have rated one group the most successful of all groups (regardless of size) in the whole residence; another would have been rated the least successful of any in Toad Hall. This variability in success seems attributable to the mathematics of the situation. With only five people in a group conflict between two means that almost half of the group is in conflict. Coupled with this is the fact that the lower the gross number of potential interactants the higher the frequency of interaction between every pair must be if the overall amount of interaction is to be held constant. If the interactants are compatible the friendships should be cemented. When one or more of them is incompatible the only coping strategy seems to be mutual withdrawal into a state of polite indifference akin to that found in a boarding house or motel. Individuals in the 5 person suites have only the option of joining or not joining the group and the latter seems to be a difficult role to maintain in a small group.
Example of Sociogram: Toad Hall Ten Person Suite

Note that numbers (which represent suite individuals) are arranged for schematic convenience. Spatial relations in the diagram do not correspond to room location.
Example of Sociogram: Toad Hall Twelve Person Suite

Note that numbers (which represent suite individuals) are arranged for schematic convenience. Spatial relations in the diagram do not correspond to room location.

Note also that 9's first choice is the only link between the two cliques and that 9 is a social isolate (i.e., a "shadow").
The outcome for the 5 person suites is thus to have one cohesive group or no real group at all.

The 12 person suites make an interesting comparison because of their apparent tendency to split into two subgroups of about five or six people each. These subgroups exhibit a uniformly high level of social cohesion which is also apparently a function of the mathematics of the situation. Every individual has three choices open to him. He can join subgroup A; he can join subgroup B; or he can become a "shadow". These three options are maintained as viable alternatives because it seems that maintaining a cohesive 12 person group is beyond the scope of the social skills possessed by the residents. The group dynamics literature suggests that developing and maintaining such a large group demands either strong leadership or a well accepted group goal and both are lacking in the Toad Hall groups. Thus with two groups almost automatically destined to form it is logical to assume that there will be self selection to ensure that there is more compatibility within than between groups. Finally, in a large group the role of "shadow" can be played with greater ease as the failure of one individual to contribute to a group is noticeable mainly as a function of the size of that group. The larger the group the smaller his percentage disruption of it by not participating.

The sociograms referred to above suggest that the intensity of the relationships within each group is somewhat dependent on subgroup formation. A subjective analysis of this phenomenon is that all suites attempt to maintain a single cohesive group but that the demands this places on the interpersonal skills of the residents put
an upper limit of 8 or 9 to the group (allowing for one or two shadows).

Passing judgement on the comparative quality of life existing in the various suite sizes is obviously a difficult task given the foregoing comments. As an outsider visiting the various suites it seemed that life in the 10 person suites was more harmonious than most of the 5 person suites and both of the 12 person suites. The indication of overall satisfaction provided by the intention to return figures support this view (see Table 4.15). The fact that the proportion of residents preferring to live in a 5 person suite increased as a function of their own suite size partly supports the notion but suggests that even 10 person groups may be a little too large. (see Table 4.16).

Table 4.15

<table>
<thead>
<tr>
<th>Suite Size</th>
<th>Residents intending to return to Toad Hall next year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 person</td>
<td>80%</td>
</tr>
<tr>
<td>10 person</td>
<td>92%</td>
</tr>
<tr>
<td>12 person</td>
<td>64%</td>
</tr>
</tbody>
</table>

Table 4.16

<table>
<thead>
<tr>
<th>Suite Size</th>
<th>Preference for Various Suite Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 person</td>
<td>Residents preferring to live in a 5 person suite</td>
</tr>
<tr>
<td></td>
<td>Residents preferring own suite size</td>
</tr>
</tbody>
</table>
An interesting illustration of the clique formation tendency is provided by the data on location of "best friends". Residents of 12 person suites were more likely to be living with a best friend than residents in 10 person suites a result unlikely to be due solely to chance. (see Table 4.17)

Table 4.17

<table>
<thead>
<tr>
<th>Location of best friends</th>
<th>5 person suites</th>
<th>10 person suites</th>
<th>12 person suites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents having one of best friends as co-resident in suite.</td>
<td>29%</td>
<td>33%</td>
<td>39%</td>
</tr>
</tbody>
</table>

A "Friendship Quotient" was constructed from the questionnaire item requiring residents to categorise their suite co-residents into good friends, friends and acquaintances (see Table 4.18). These data are generally in support of the previous comments regarding friendship formation within the suites. They also illustrate empirically the great variation possible within the 5 person suites. These provide the lowest and the highest of all Friendship Quotient's recorded.

Table 4.18

<table>
<thead>
<tr>
<th>Toad Hall Friendship Quotient (FQ) According to Suite Size</th>
<th>5 person suites</th>
<th>10 person suites</th>
<th>12 person suites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean F.Q.</td>
<td>1.87</td>
<td>1.56</td>
<td>1.61</td>
</tr>
<tr>
<td>Range</td>
<td>1.24-2.65</td>
<td>1.44-1.68</td>
<td>1.43-1.79</td>
</tr>
</tbody>
</table>
Data obtained from the Self Disclosure measure also conform to the above analysis (see Table 4.19). The higher self disclosure reported by twelve-suite residents is presumably among the clique members.

Table 4.19
Toad Hall Self Disclosure (S.D.) Score According to Suite Size

<table>
<thead>
<tr>
<th></th>
<th>5 person suites</th>
<th>10 person suites</th>
<th>12 person suites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean S.D. Score</td>
<td>5.83</td>
<td>4.82</td>
<td>6.29</td>
</tr>
<tr>
<td>Range</td>
<td>4.84-6.84</td>
<td>4.38-5.25</td>
<td>6.20-6.38</td>
</tr>
</tbody>
</table>

The Privacy Preference scores are set out in Table 4.20. The total PPS scores mirror the Friendship Quotient and Self Disclosure data. Residents living in the ten person suites show the greatest need for privacy, presumably because they consider their coresidents to be less intimate friends than do either the twelves (in the clique) or the fives. These latter are either very intimate groups so that privacy (as measured by the PPS) becomes a non issue; or such withdrawn groups that the minimal social contact poses no real threat of privacy invasion.
Table 4.20

Toad Hall Privacy Preference Scores According to Suite Sizes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>5 person suites n = 14</th>
<th>10 person suites n = 15</th>
<th>12 person suites n = 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intimacy</td>
<td>32</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>Not Neighbouring</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Seclusion</td>
<td>32</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Solitude</td>
<td>29</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Anonymity</td>
<td>16</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Reserve</td>
<td>19</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Total PPS</td>
<td>185</td>
<td>192</td>
<td>178</td>
</tr>
</tbody>
</table>

The overall conclusion obtained from the comparison of the three suite sizes within Toad Hall is that the total number of interacting individuals, at least within an environment of this type, is an extremely powerful variable. The crux of the numbers effect seems to be in the way it determines the friendship structure and quality of the groups. Many of the other variables, particularly the self disclosure and privacy variables which are central to this study, seem to be dependent on this friendship dimension.

One intriguing possibility concerning the mode of operation of the total numbers variable is that each group is in a different but parallel state of development. The environment (including total numbers) could thus be considered but an accelerator in this evolutionary process. It would follow, to continue the ecological analogy, that each group would eventually reach the same climax phase. An alternative possibility would be that each group develops its own particular unique "personality" over time.
Variables such as group homogeneity, environmental potency and duration of group existence would probably influence which of these paths any particular group followed. It might be expected, for example, that the larger Toad Hall groups would show a greater tendency toward parallel development than smaller groups for reasons outlined earlier. Obviously the level of analysis would be significant in attempting to understand the social ecology of student residences.

Conclusions

The purpose of this study was to gain a broad understanding of the social ecology of various student residences. Despite limitations of methodology and small sample sizes this aim was at least partly achieved. Distinct behavioural differences were detected within the three environments and the first level relationship of many of these environmental variables has been indicated. Further, a number of second level behaviour-environment interactions have been suggested.

One disappointing facet of the study relates to the privacy data. A central "hypothesis" contained in the design of the exploratory study was that the two types of residence would produce markedly different levels of crowding and that this would be reflected in the Marshall Privacy Preference data. The absence of significant differences between Toad Hall and Burton Hall fails to support this hypothesis. There is some indication, however, that "crowding" may vary according to group size and the PPS data reflect this. Nevertheless, the present study does not reveal different levels of social crowding in the two residence types.
However, the study has indicated that in order to understand and measure the phenomenon of social crowding as defined previously a thorough knowledge of the interpersonal dynamics and ecology of the interactants is vital. In addition to this fundamental point it is also apparent that attempting to focus on crowding (or any other such poorly understood variable) even following the exploratory study may be premature. A more general focus for a further, refined study into the general social ecology of student residence is likely to provide basic data from which, finally, a meaningful study of crowding can be mounted.

As an aid to the design of such a study a correlational analysis of the Toad Hall data was carried out (the small sample sizes of the other two residences made the computation of correlations inappropriate in their case). The correlation matrix is contained in Appendix 6. The "eyeball" analysis of the correlation data provided the variable by variable analysis outlined in Appendix 7. The major finding to emerge from this analysis is that a number of modes of adaptation to the residential environment may be possible. Broadly these are:

Experiential adaptation. Residents who come from a large family and all this involves (e.g., sharing a bedroom) seem to cope better in the Toad Hall environment than those who lack this experience. The interpersonal stresses existing within Toad Hall, it seems, are similar to those existing in a large family.

Psychosocial need adaptation. Residents who have been unable to construct satisfactory friendship matrices seem to be more inclined to want to remain in Toad Hall. Again this is hardly a surprising finding. For a lonely person a Toad Hall suite must seem like a potentially
Group attractiveness. If a resident has the good fortune to find him or herself within a compatible group then the probability of their returning is increased.

As well as these three major bases for satisfaction with Toad Hall the data suggest that there may be a difference in the way males and females experience and respond to loneliness (i.e., psychosocial need adaptation discussed above). Tentatively, it seems males who are lonely respond in an active manner such as spending more time in the communal area; females who are lonely adopt a more passive role and seem to spend much of their time sitting in their rooms with their doors open. Such strategies conform to existing sex role stereotypes.

As all of the above three adaptational bases of satisfaction with the Toad Hall environment seem plausible and even verge on the obvious, any attempt to understand the success of Toad Hall using a univariate model must now be considered dubious. It is unlikely that a multiple basis of adaptation is unique to Toad Hall but such a possibility does not seem to have been articulated in the literature to date. The implications for the study of crowding are quite significant for it suggests that there may be at least three bases for the resident to consider himself crowded in the Toad Hall environment.

It should be emphasised at this point that the numerous methodological and statistical shortcomings of the correlational
analysis make blanket acceptance of this tripartite structure of adaptation premature. The concept of such multiple adaptation, however, seems intuitively useful and will be reexamined in a future study.
Partial Replication of the Toad Hall and Burton Hall Exploratory Study

Usual research procedure is to start with a broadly based exploratory study designed to isolate the main variables influencing the target variables. This is then followed by a series of studies of narrower focus permitting detailed study of selected variables.

The exploratory study described in the previous chapter suggests that the above research strategy is not appropriate for the present circumstances. The social dynamics of residence life, particularly as they relate to the experience of privacy and crowding, are still too poorly understood to warrant a more detailed study. It was therefore decided to restudy the two Australian National University residences at a general level.

The principle purpose of the exploratory study was to provide a psychosocial and physical environmental matrix for the crowding and privacy data. The revised aims of the research and the residence life data now available suggest a new perspective: the individual's satisfaction with residence life. Satisfaction was chosen because it was thought to cover both responses to privacy and crowding as well as a host of other variables which, intuitively, are likely to feed into the complex system that is life in a residence. The choice of satisfaction as a research focus was also congruent with one of the more interesting findings of the exploratory study: that there are three general classes of individuals who are satisfied with life in Toad Hall. These are those who are constitutionally or experientially
adapted to life in Toad Hall; those who, for one reason or another, are lonely; and those who find themselves within a compatible and socially cohesive group.

A simple but dynamic model relating satisfaction to the above three forms of "adaptation" to the residence environment is schematised in Diagram 5.1. This model predicts that the physical environment influences satisfaction by helping determine the consequences of an individual's behaviour and by influencing the establishment and maintenance of social groups.

The variables making up each "adaptation mode cluster" (e.g. group characteristics) were derived primarily from the exploratory study data. The satisfaction cluster was not used in the exploratory study but is derived mainly from that study. Implicit in the construction of the model is the notion that the various adaptation mode clusters may be algebraically additive although more work on the psychometric properties of the cluster measures would be necessary before this facet of the model could be empirically validated.

The variables comprising each of the adaptation mode clusters are as follows:

Experiential and Constitutional Variables: This cluster is a pragmatic and eclectic collection of variables which the individual brings to the residence. Some are enduring and "trait-like" (e.g., sex linked behaviours) while others are obviously more transitory (e.g., period already lived in the residence). Included are:
DIAGRAM 5.1

Schematic Representation of Conceptual Model
Sex
Age
University experience
Residence experience
Demographic characteristics of early environment
Size of family

Individual Social Behaviour Variables: This cluster included variables relating to the individual's social contacts while at the residence. It was designed to include both "social trait-like" measures (e.g., gregariousness) as well as information on some of the locational aspects of social behaviour. An important component of this cluster was concerned with the collection of data on romantic attachments. Personal experience and impressionistic accounts suggest that, in our culture at least, a person's satisfaction with his/her romantic life is an important determinant of their overall morale. The different designs of the two residences may influence this variable in a number of ways. For example the communal dining room of Burton Hall may provide a useful arena for the establishment of liaisons. Toad Hall, lacking such a facility, may make this variety of social contact more difficult to achieve. The actual variables making up the cluster are:

Number of friends
Number of friends in the residence
Number of friends in the residence unit
Use of communal areas for entertaining
Existence of a romantic partner
Location of romantic partner
Degree of isolation of friends from unit coresidents
Group Characteristic Variables: These were subdivided into three groups. General group characteristics; group government characteristics (i.e., self imposed rule systems); and attitude similarity characteristics.

General group characteristics:
- Sex ratio within unit
- Perceived success of unit
- Existence of an accepted unit leader
- Number of unit social events

Group government characteristics:
- Existence of self imposed noise rules
- Existence of self imposed borrowing rules
- Existence of self imposed visitor rules
- Existence of self imposed cleanliness rules
- Rule Quotient (summary of above)

Attitude similarity characteristics:
- Knowledge of unit coresidents' political views
- Knowledge of unit coresidents' money views
- Knowledge of unit coresidents' sex morality views
- Knowledge of unit coresidents' preferred lifestyle
- Similarity Quotient.

The above model was used as the basis for a further study of residence life to permit data collection on the major facets of the residential experience. It also permitted the collection of data on various issues raised by the exploratory study which have only marginal relevance for a study of crowding and privacy but which are either interesting in their own right or have possible practical relevance.
Method

The exploratory study data was gathered using a combination of naturalistic observation, interview and psychometric questionnaire methods. One of the principle weaknesses of that study was that the relatively small samples made data interpretation difficult. In order to obtain a larger sample the present study was based on a self-administered questionnaire placed under residents' doors. A departure from normal procedure was adopted in an attempt to maximise the return rate of completed questionnaires: respondents were rewarded (by $2) for completing the questionnaire and returning it to the experimenter (or his representative) at a nominated time.

Questionnaires with the reward contingency clearly expressed on them were distributed to respondents in pre selected units on one day (in October 1976) and collected at one of three times the following day. Response rates were 139 out of 195 (71%) for Toad Hall and 101 out of 136 (74%) for Burton Hall. This response rate was considered poor given the reward aspect. Seventy-five percent response rate can, in fact, usually be expected in most surveys with no extrinsic reward offered. Informal discussion with respondents suggested that the low response rate was at least partially due to the frequency with which residents were approached by various other researchers. Discussion with the manageress of Toad Hall revealed that earlier in the year a survey conducted by a postgraduate student from another university which used a non rewarded self administered questionnaire produced a response rate of approximately five percent. In the light of that result the present study was quite successful.
One of the major considerations leading to the decision to reward respondents was the desire to maximise response rates within living units and so permit the construction of meaningful sociograms. Unfortunately the missing data preclude this treatment.

Questionnaires

The completed questionnaires are set out in Appendices 8 and 9. The questionnaires for each residence differed slightly to make them applicable to residence conditions. These differences mainly related to the definition of the social unit the respondent was asked to describe.

The questionnaires were designed to collect data on each of the functional variable cluster categories defined in the research model (Diagram 5.1). These are: constitutional/experiential variables; individual social behaviour variables; group characteristic variables; and satisfaction indices. Some of these data were designed to be amalgamated into various summary "quotient" scores. These were a self imposed, informal Rule Quotient (RQ); an Attitude Similarity Quotient (ASQ); and a Satisfaction Quotient (SQ). Friendship choice data was also solicited with the aim of constructing sociograms and clique detection indices but the low response rate precluded the preparation of these measures. A final group of questions sought information of the spatio-temporal characteristics of the individual's behaviour. These data were designed to provide more details of the general social ecology of the residences.

Results

The data are presented in sections corresponding to the model
depicted in Diagram 5.1. Unless otherwise indicated all data consist of the percentage of respondents falling into a particular category. Simple frequency data are presented for all variables and then followed by cross tabulations between the various variables and the Satisfaction Quotient (SQ) and the degree of satisfaction with obtained privacy. All tables differentiate between the five-person and ten-person suites in Toad Hall in order to monitor the effects of gross number of suite residents on the "dependent" variables.

**Experiential-Constitutional Variables**

The main features of these data are as follows: There is some tendency for Burton Hall to have a higher proportion of females than Toad Hall, particularly the ten person suites of the latter. This may be related to the fact that Burton Hall residents are younger than those in Toad Hall and that parents may dissuade their female offspring from entering Toad Hall on the grounds that its design appears to promote a more "intimate" style of living. However the data obtained in the exploratory study and largely confirmed in the present study (see later) does not validate parents' presumed interpretation of the two environments.

There is a tendency for Toad Hall five person suite residents to be older than either of the other two groups. This seems to arise because of an internal migration process within Toad Hall. Informal discussion with residents indicates that established sub-groups of residents in ten person suites cleave off to occupy five person suites as these become available. It seems likely that the self selected nature of many of the five person suites constitutes an
TABLE 5.1

Comparison of Experiential-Constitutional Variables for five and ten person unit\textsuperscript{a} in Toad Hall and for Burton Hall.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>$X^2$ value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall Five person suite</td>
<td>Toad Hall Ten person suite</td>
</tr>
<tr>
<td>Females</td>
<td>48.7</td>
<td>41.6</td>
</tr>
<tr>
<td>Under age 21</td>
<td>43.6</td>
<td>49.5</td>
</tr>
<tr>
<td>More than 2 years at university</td>
<td>66.7</td>
<td>27.7</td>
</tr>
<tr>
<td>Three months or less in residence</td>
<td>18.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Early environment rural or town of 5,000 or less</td>
<td>15.4</td>
<td>13.9</td>
</tr>
<tr>
<td>From family of eight or more</td>
<td>10.3</td>
<td>10.9</td>
</tr>
</tbody>
</table>

$(n = 39)$ $(n = 101)$ $(n = 101)$

Significance levels (df=1, nondirectional) * $p \leq 0.10$ ** $p \leq 0.05$ *** $p \leq 0.01$

\textsuperscript{a} "unit" refers to a Toad Hall five person suite; Toad Hall ten person suite; or cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
important dimension of their psychosocial structure.

The duration of residence experience variable was included in case "acclimatization" to the residence is an important determinant of overall satisfaction. As can be seen there are but small differences between the three groups.

Burton Hall contains many more students from rural and small town environments. It may be that the conservatism usually attributed to people from such backgrounds contributes to their choice of a traditional form of residence.

The slightly higher proportion of Toad Hall residents coming from larger families may be due to a number of factors. The most plausible seems to be that parents with larger families are less able to assist their offspring financially and this might prejudice them in favour of the lower rents asked by Toad Hall. A second (and not incompatible) possibility is that students from larger families self select Toad Hall because it seems to offer an approximation to life in a larger family.

In summary it can be seem that the three groups differ on a number of potentially important variables. These differences indicate that comparisons of reactive measures between the three groups must be interpreted with some caution.

Individual Social Behaviour Variables  (See Table 5.2)

There are no strongly statistically significant differences between the three groups on the two general friendship variables
TABLE 5.2

Comparison of individual social behaviours for five and ten person units\textsuperscript{a} in Toad Hall and for Burton Hall.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in each category</th>
<th>(x^2) value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person suite</td>
<td>Toad Hall ten person suite</td>
</tr>
<tr>
<td>Have more than ten friends</td>
<td>61.5</td>
<td>70.3</td>
</tr>
<tr>
<td>Have no friends</td>
<td>2.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Have more than ten friends in residence</td>
<td>10.3</td>
<td>19.8</td>
</tr>
<tr>
<td>Have no friends in the residence</td>
<td>7.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Have no friends in unit</td>
<td>33.3</td>
<td>23.8</td>
</tr>
<tr>
<td>Use lounge to entertain visitors</td>
<td>56.4</td>
<td>48.5</td>
</tr>
<tr>
<td>Spend three hours or more in common areas</td>
<td>38.5</td>
<td>59.4</td>
</tr>
<tr>
<td>(lounge, dining room, etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have a romantic partner</td>
<td>69.2</td>
<td>67.3</td>
</tr>
</tbody>
</table>
TABLE 5.2 (Cont.)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>X² value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person suite</td>
<td>Toad Hall ten person suite</td>
</tr>
<tr>
<td>Romantic partner lives</td>
<td>17.9</td>
<td>13.9</td>
</tr>
<tr>
<td>in same unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends known to unit</td>
<td>74.4</td>
<td>66.3</td>
</tr>
<tr>
<td>coresidents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

- * p ≤ 0.10
- ** p ≤ 0.05
- *** p ≤ 0.01

"unit" refers to a Toad Hall five person suite; Toad Hall ten person suite; a cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
although there is some tendency for Burton Hall residents to have a slightly larger group of friends than their counterparts in Toad Hall. However the pattern of friendship formation within the residence does show strong differences. There appears to be a pattern corresponding to an increase in the size of the friendship group with increasing living unit population size. This suggests that the size of an individual's friendship group may be influenced by the size of their living unit. This may be partly a direct influence leading individuals to label their unit co-residents as friends or partly a function of self-selection of unit size on the basis of an individual's "gregariousness".

One interesting result which may appear anomalous at first sight is that there are many more individuals in Toad Hall who do not label any of their unit co-residents as friends than there are in Burton Hall. The questionnaire was designed to elicit a declaration of a finite friendship group which was then partialled out into location according to residence, suite, etc. It is thus apparent that although Toad Hall residents socialize with and among their unit co-residents to a degree this does not necessarily mean that the unit co-residents are their primary friendship group. Indications are that Burton Hall residents have one group of friends which constitutes their major social focus while Toad Hall residents have two more or less discrete social groups: Their "real" friends; and their unit friends. There is no evidence in the above data (or impressionistically) to suggest that Toad Hall suites generate a close-knit primary group despite the architecturally determined interpersonal contact that occurs. They represent a collection of associates rather than an assembly of friends. In a sense the
forces that bind them together are functional rather than social.

In contrast the Burton living units do not represent social units at all (with perhaps one exception to be considered later). They are a collection of strangers rather than a collection of friends or even associates. There are virtually no social or functional forces to weld them into a social unit. The one possible exception mentioned above refers to one Burton Hall unit which did seem to function as a social group. This unit, in fact, accounts for a large proportion of the Burton social interaction data. Unfortunately no further information concerning the emergence or maintenance of the social cohesion existing in this unit is available. Its occurrence was apparently serendipitous and atypical.

The exploratory study finding that the communal lounge areas in Burton Hall are used much less than those in Toad Hall is strongly substantiated by the present data.

Although the existence of romantic partners is fairly consistent across groups the location of these shows an interesting trend. The smaller the unit the more likely an individual's romantic partner is to share their unit. One of the more plausible explanations of this is that age mirrors this trend and actual cohabiting probably increases with student age. The interpretation of this particular set of data is complicated by the fact that about 10% of the Burton sample was drawn from same sex units and this obviously precludes the establishment of heterosexual relationships.

The low absolute values for individuals to have their romantic partner living in their unit is support for the "incest taboo"
hypothesis posited in the exploratory study. Even in the five person Toad Hall suites this absolute figure is less than twenty per cent. As there is a good chance that both partners have responded the figure indicates that there tends to be only one same-unit couple for every two five person suites.

The above data generally correspond to the pattern of social life depicted in the exploratory study. Residents in Burton Hall are no less gregarious than their counterparts in Toad Hall and, in fact, tend to have substantially more friends within their residence. However the spatial organization of social activity differs in that Burton Hall residents shun the large communal areas designated for socializing (except in the dining room) and entertain their friends in the privacy of their own rooms. Toad Hall residents, on the other hand, are much more inclined to entertain their friends in the communal suite areas. This finding has some interesting educational implications in that widening of educational and social horizons is one of the more common advantages claimed for traditional collegiate-style university accommodation (e.g. Educational Facilities Laboratories, 1961; Hatch, 1968). The present study suggests that suite-style living arrangements are more likely to promote interchange between a variety of people. The "self selected" nature of the groups existing in traditional residences indicates that these groups are more homogeneous and thus probably less "educational".

Group Characteristics (See Tables 5.3 - 5.5)

The greater emphasis on within-suite socializing in Toad Hall and the tendency for Toad Hall residents to regard their social unit as successful are both congruent with the finding that Toad Hall
residents are more likely to socialize in the unit communal areas while Burton residents are more likely to socialize elsewhere (presumably mainly in their rooms). It is interesting to note in this connection that the five person suites appear to generate more within-suite social contacts (see also Table 5.2) despite the trend toward a lower probability for people living in five person suites to categorise unit co-residents as friends. The management of the smaller group for group social activities would make these less difficult to organise.

The absolute values of some of these data also deserve comment. Even in the most successful unit type (Toad Hall five person) as seen by the residents there are 40% who do not consider their unit one of the more successful. This suggests that there is either considerable inter-suite contact so that this judgement represents an accurate comparative statement; or that, in absolute terms, satisfaction is only moderately widespread. Informal evidence and residence design suggest that the former explanation is not probable. It seems that Toad Hall residents, despite their relative satisfaction, believe that the social dynamics of their unit could be substantially improved.

The leadership issue is also interesting in absolute terms. It appears that the group dynamics of the Toad social units do not encourage the emergence of leaders. Although at first sight this seems curious and even contrary to the psychological literature on leadership emergence the low "intensity" of the within-unit interactions probably accounts for the failure of leaders to emerge. Leaders almost always emerge spontaneously in groups so these data
TABLE 5.3

Comparison of group composition characteristics for five and ten person units\textsuperscript{a} in Toad Hall and for Burton Hall.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>(X^2) value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person suite</td>
<td>Toad Hall ten person suite</td>
</tr>
<tr>
<td>Groups having more males</td>
<td>43.6</td>
<td>74.3</td>
</tr>
<tr>
<td>Individuals rating own unit one of more successful</td>
<td>59.0</td>
<td>54.5</td>
</tr>
<tr>
<td>Individuals who consider there is an accepted leader in their unit</td>
<td>12.8</td>
<td>7.9</td>
</tr>
<tr>
<td>Individuals responding that no unit social events had occurred during the year</td>
<td>33.3</td>
<td>42.6</td>
</tr>
</tbody>
</table>

Significance levels (df=1, nondirectional)

\* \( p \leq 0.10 \)

\** \( p \leq 0.05 \)

\*** \( p \leq 0.01 \)

\textsuperscript{a}unit refers to a Toad Hall five person suite, Toad Hall ten person suite; or a cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
### TABLE 5.4

Comparison of unit rule systems for five and ten person units\(^a\) in Toad Hall and for Burton Hall.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>(X^2) value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person suite</td>
<td>Toad Hall ten person suite</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed noise rules</td>
<td>48.7</td>
<td>27.7</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed borrowing rules</td>
<td>53.8</td>
<td>30.7</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed rules concerning visitors</td>
<td>20.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed rules concerning cleanliness</td>
<td>64.1</td>
<td>37.6</td>
</tr>
<tr>
<td>Individuals with higher Rule Quotient Scores</td>
<td>48.7</td>
<td>21.8</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

\* \( p \leq 0.10 \)
\** \( p \leq 0.05 \)
\*** \( p \leq 0.01 \)

\( a \) unit refers to a Toad Hall five person suite; Toad Hall ten person suite; or a cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>X² value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person suite</td>
<td>Toad Hall ten person suite</td>
</tr>
<tr>
<td>Individuals who do not know unit co-residents political attitudes</td>
<td>5.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Individuals who do not know unit co-residents attitudes concerning money</td>
<td>2.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Individuals who do not know unit co-residents preferred lifestyle</td>
<td>2.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Individuals who do not know unit co-residents sexual morality attitudes</td>
<td>2.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Individuals who consider that their attitudes are generally similar to that of their co-residents (i.e. higher Similarity Quotient Score)</td>
<td>43.6</td>
<td>50.5</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non-directional)

* p 0.20 ≤ 0.10
** p 0.10 ≤ 0.05
*** p 0.05 ≤ 0.01

Unit refers to a Toad Hall five person suite; Toad Hall ten person suite; or a cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
are further evidence to suggest that the social contact within suites is neither frequent nor intimate enough to transform the suite residents into a true "group".

Self government within the units shows some interesting trends particularly between the five and ten person units of Toad Hall. In essence the five person suites are more strictly self governed than the ten person units. Presumably this occurs because it is easier for five people to devise and maintain a set of mutually acceptable rules than it is for ten or more. It is also interesting to note that Burton Hall residents also report the existence of self imposed rule systems. The low level of social contact within Burton Hall units suggests that these rules take the form of social conventions rather than being deliberate, custom designed norms for each unit which appears to be the case in Toad Hall. Cross tabulating overall satisfaction against Rule Quotient scores (see below) indicates that this facet of residence life is not an important determinant of overall satisfaction.

Burton Hall residents are less likely than Toad Hall residents to know the attitudes of the coresidents on topics such as politics and sexual morality. This is consistent with the lower level of social contact between residents of Burton Hall units. Comparing the knowledge of coresidents attitudes with perceived similarity of attitudes reveals that the more is known of others attitudes the greater the actual similarity is likely to be. In other words it appears that Burton Hall residents attribute their coresidents with attitudes different from their own more on the basis of ignorance or superficial contact rather than real evidence. As was stated in
TABLE 5.6

Comparison of space-time patterning of behaviour for five and ten person units\textsuperscript{a} in Toad Hall and for Burton Hall.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Percent in each category</th>
<th>X\textsuperscript{2} value for each comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Toad Hall five person units</td>
<td>Toad Hall ten person units</td>
</tr>
<tr>
<td>Individuals rising at 7.45 am or earlier</td>
<td>30.8</td>
<td>24.8</td>
</tr>
<tr>
<td>Individuals rising after 9.45 am</td>
<td>17.9</td>
<td>34.7</td>
</tr>
<tr>
<td>Individuals eating evening meal before 5.45 pm</td>
<td>5.1</td>
<td>19.8</td>
</tr>
<tr>
<td>Individuals eating evening meal after 8.45 pm</td>
<td>5.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Individuals who usually study in their room</td>
<td>79.5</td>
<td>79.2</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

\* \(p \leq 0.10\)
\** \(p \leq 0.05\)
\*** \(p \leq 0.01\)

\textsuperscript{a}"unit" refers to a Toad Hall five person suite; Toad Hall ten person suite; or a cluster of approximately 18 study bedrooms surrounding an ablution block in Burton Hall.
TABLE 5.7

Toad Hall and Burton Hall Experiential-Constitutional Variables Cross Tabulated against Satisfaction Quotient (SQ)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Categories</th>
<th>Toad Hall Five person suites</th>
<th>Toad Hall ten person suites</th>
<th>Burton Hall</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Higher SQ</td>
<td>Lower SQ</td>
<td>Higher SQ</td>
<td>Lower SQ</td>
<td>X²</td>
</tr>
<tr>
<td>Age</td>
<td>Under 21 yr</td>
<td>25.6</td>
<td>20.5</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21 yrs and over</td>
<td>25.6</td>
<td>28.2</td>
<td>2.54</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>30.8</td>
<td>20.5</td>
<td>2.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>20.5</td>
<td>28.2</td>
<td>2.54</td>
<td></td>
</tr>
<tr>
<td>Year at University</td>
<td>2 or more</td>
<td>35.9</td>
<td>33.3</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>less than 2</td>
<td>15.5</td>
<td>15.3</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Months in residence</td>
<td>more than 3 mths</td>
<td>43.6</td>
<td>7.7</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 mths or less</td>
<td>41.0</td>
<td>7.7</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>Early Environment</td>
<td>City/large town</td>
<td>48.8</td>
<td>35.9</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural/small town</td>
<td>2.6</td>
<td>12.9</td>
<td>7.19</td>
<td></td>
</tr>
<tr>
<td>Family Size</td>
<td>Larger fam</td>
<td>5.1</td>
<td>7.7</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smaller family</td>
<td>46.2</td>
<td>41.1</td>
<td>0.33</td>
<td></td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)  
* p ≤ 0.10  
** p ≤ 0.05
the exploratory study, one of the major advantages of the enforced interaction within Toad Hall units is that it decreases the incidence of such prejudices.

Space Time Patterning of Behaviour (See Table 5.6)

One of the advantages of the suite style accommodation frequently mentioned by residents is that it permits flexibility in the arrangement of individual schedules. Data collected in this section were designed to investigate whether this potential flexibility is realised. The most striking feature of these data is the difference evident between the two Toad Hall suite sizes. Thus roughly ninety percent of the residents of five person suites eat their evening meal between 5.45 p.m. and 8.45 p.m.; whereas only about seventy percent of the residents of ten person suites eat between these hours. Unfortunately data are not available to suggest the basis of this difference. The meal times available to Burton Hall residents are, of course, restricted as they are supplied by the residence staff.

Rising times follow a similar pattern in that Toad Hall five person suites evidence less variance than the ten person suites, particularly in the after 9.45 a.m. category. Again there is no obvious explanation for this finding.

In general it appears that individuals in the ten person suites do take advantage of the flexibility afforded them by the self help lifestyle designed into Toad Hall. However, residents of the five person suites display approximately the same degree of "activity spread" as Burton Hall residents with respect to rising time. The
restricted availability of breakfast is obviously a powerful motivation for Burton Hall students to rise at a predictable time but no such reason is apparent for the residents of five person suites in Toad Hall. The only significant population difference between the two Toad Hall units was year at university and it is possible that this is implicated in the finding (e.g., advanced students may have their classes timetabled earlier in the morning). The other possibility, of course, is that the greater spread of these activities in the ten person suites is a function of the suite population size itself. Thus congestion in the kitchen might induce residents in ten person suites to adopt temporal separation of activities. If this is so it indicates that the greater "flexibility" of the ten person suites is a consequence of the design - gross number of individuals interaction rather than a behaviour sought in its own right. The flexibility is induced rather than sought.

The Cross Tabulation Data (See Tables 5.7 - 5.10)

The degree of satisfaction felt for one's environment and fellows possibly influences the amount of privacy one seeks. The more disgruntled a person feels the more they may wish to withdraw. It is thus valuable to discover the major determinants of satisfaction in each residence type. Secondly it is of practical value if the principle causes of content and discontent in residences can be empirically established.

The demographic background of the resident appears to play a part in determining satisfaction in Toad Hall (higher probability of satisfaction if resident grew up in a more urban area).
TABLE 5.8

Toad Hall and Burton Hall Individual Social Behaviours Cross Tabulated against Satisfaction Quotient (SQ)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Higher S.Q.</th>
<th>Lower S.Q.</th>
<th>X²</th>
<th>Higher S.Q.</th>
<th>Lower S.Q.</th>
<th>X²</th>
<th>Higher S.Q.</th>
<th>Lower S.Q.</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than ten</td>
<td>25.6</td>
<td>35.9</td>
<td>**</td>
<td>31.7</td>
<td>38.6</td>
<td>0.05</td>
<td>10.9</td>
<td>64.3</td>
<td>**</td>
</tr>
<tr>
<td>Ten or less</td>
<td>25.6</td>
<td>12.9</td>
<td></td>
<td>14.9</td>
<td>14.9</td>
<td></td>
<td>3.0</td>
<td>21.9</td>
<td></td>
</tr>
<tr>
<td>Friends in Residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or more</td>
<td>43.5</td>
<td>46.1</td>
<td>1.00</td>
<td>42.6</td>
<td>47.5</td>
<td>**</td>
<td>13.9</td>
<td>82.3</td>
<td>0.01</td>
</tr>
<tr>
<td>No friends</td>
<td>7.7</td>
<td>2.6</td>
<td></td>
<td>4.0</td>
<td>5.9</td>
<td></td>
<td>0.0</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Friends in Living unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or more</td>
<td>30.8</td>
<td>33.4</td>
<td>0.45</td>
<td>37.6</td>
<td>38.6</td>
<td>0.63</td>
<td>0.0</td>
<td>77.3</td>
<td>**</td>
</tr>
<tr>
<td>No friends</td>
<td>20.5</td>
<td>15.4</td>
<td></td>
<td>8.9</td>
<td>14.9</td>
<td></td>
<td>13.8</td>
<td>8.9</td>
<td>49.06</td>
</tr>
<tr>
<td>Common room use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 hrs or more</td>
<td>20.5</td>
<td>18.0</td>
<td>0.01</td>
<td>30.7</td>
<td>28.8</td>
<td>1.04</td>
<td>13.8</td>
<td>72.2</td>
<td>1.24</td>
</tr>
<tr>
<td>Less than 3 hours</td>
<td>30.8</td>
<td>30.8</td>
<td></td>
<td>15.9</td>
<td>24.7</td>
<td></td>
<td>13.8</td>
<td>72.2</td>
<td></td>
</tr>
<tr>
<td>Romantic Partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have partner</td>
<td>28.2</td>
<td>38.4</td>
<td>**</td>
<td>30.7</td>
<td>36.7</td>
<td>0.01</td>
<td>6.9</td>
<td>55.7</td>
<td>0.53</td>
</tr>
<tr>
<td>No partner</td>
<td>23.1</td>
<td>10.3</td>
<td>5.38</td>
<td>15.9</td>
<td>16.8</td>
<td></td>
<td>6.9</td>
<td>50.7</td>
<td></td>
</tr>
<tr>
<td>Location of Romantic Partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own unit</td>
<td>10.7</td>
<td>10.7</td>
<td>0.26</td>
<td>10.3</td>
<td>10.3</td>
<td>0.04</td>
<td>0.0</td>
<td>15.2</td>
<td>1.80</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>32.1</td>
<td>46.4</td>
<td></td>
<td>44.1</td>
<td>41.3</td>
<td></td>
<td>15.2</td>
<td>69.6</td>
<td></td>
</tr>
<tr>
<td>Sound Partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated good</td>
<td>28.2</td>
<td>15.4</td>
<td>**</td>
<td>26.7</td>
<td>13.9</td>
<td>**</td>
<td>5.0</td>
<td>34.6</td>
<td>**</td>
</tr>
<tr>
<td>Unsure or poor</td>
<td>23.1</td>
<td>33.4</td>
<td>4.66</td>
<td>18.8</td>
<td>39.6</td>
<td>8.93</td>
<td>8.9</td>
<td>51.5</td>
<td>6.76</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

* p < 0.10
** p < 0.05
TABLE 5.9
Toad Hall and Burton Hall Group Satisfaction Variables Cross Tabulated Against Satisfaction Quotient (SQ)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Categories</th>
<th>Toad Hall five person suites</th>
<th>Toad Hall Ten person suites</th>
<th>Burton Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Higher S.Q.</td>
<td>Lower S.Q.</td>
<td>X²</td>
</tr>
<tr>
<td>Perceived success of unit</td>
<td>More successful</td>
<td>30.8</td>
<td>30.8</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Less successful</td>
<td>20.5</td>
<td>18.0</td>
<td></td>
</tr>
<tr>
<td>Sex composition of unit</td>
<td>Males predominate</td>
<td>35.9</td>
<td>28.2</td>
<td>6.81</td>
</tr>
<tr>
<td></td>
<td>Males do not predominate</td>
<td>15.4</td>
<td>21.2</td>
<td>34.7</td>
</tr>
<tr>
<td>Unit Leadership</td>
<td>An accepted leader</td>
<td>0.0</td>
<td>12.9</td>
<td>13.03</td>
</tr>
<tr>
<td></td>
<td>No accepted leader</td>
<td>51.3</td>
<td>35.9</td>
<td>41.6</td>
</tr>
<tr>
<td>Unit Socializing</td>
<td>No social events</td>
<td>10.3</td>
<td>20.5</td>
<td>4.69</td>
</tr>
<tr>
<td></td>
<td>Some social events</td>
<td>41.1</td>
<td>28.3</td>
<td>27.8</td>
</tr>
<tr>
<td>Rule Quotient</td>
<td>Strong rule system</td>
<td>20.5</td>
<td>28.2</td>
<td>2.51</td>
</tr>
<tr>
<td></td>
<td>Weak rule system</td>
<td>30.7</td>
<td>20.5</td>
<td>33.6</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)  

* p < 0.10  
** p < 0.05
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Category</th>
<th>Toad Hall Five person suites</th>
<th>Toad Hall Ten person suites</th>
<th>Burton Hall</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Under 21</td>
<td>35.9</td>
<td>10.3</td>
<td>34.7</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>21 &amp; over</td>
<td>43.6</td>
<td>10.3</td>
<td>34.7</td>
<td>15.8</td>
</tr>
<tr>
<td>Months in</td>
<td>More than 3 mths</td>
<td>66.7</td>
<td>18.0</td>
<td>63.4</td>
<td>24.8</td>
</tr>
<tr>
<td>residence</td>
<td>3 mths or less</td>
<td>12.9</td>
<td>2.6</td>
<td>6.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Early</td>
<td>City/large town</td>
<td>69.2</td>
<td>15.4</td>
<td>58.4</td>
<td>27.7</td>
</tr>
<tr>
<td>Environment</td>
<td>Rural/Small town</td>
<td>10.3</td>
<td>5.2</td>
<td>10.9</td>
<td>3.0</td>
</tr>
<tr>
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<td>44.6</td>
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<td>Toad Hall Ten person suites</td>
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</tr>
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<td>--------------------</td>
<td>----------</td>
<td>------------------------------</td>
<td>----------------------------</td>
<td>------------</td>
<td></td>
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<td>Location of romantic partner</td>
<td>Own unit</td>
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<td>Privacy satis. 18.0, Not satis. 4.9, $x^2$ 0.01</td>
<td>Privacy satis. 6.4, Not satis. 4.8, $x^2$ 0.59</td>
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<td>Elsewhere</td>
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<td>59.0, 18.0</td>
<td>65.0, 23.8</td>
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<tr>
<td>Sound Insulation</td>
<td>Rated good</td>
<td>Privacy satis. 38.5, Not satis. 5.1, $x^2$ 2.78</td>
<td>Privacy satis. 33.7, Not satis. 7.0, $x^2$ 4.98</td>
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<td>Unsure or poor</td>
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<td>Perceived success of own unit</td>
<td>More success.</td>
<td>Privacy satis. 43.6, Not satis. 18.0, $x^2$ 6.01</td>
<td>Privacy satis. 39.6, Not satis. 14.8, $x^2$ 0.35</td>
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<td>Less success.</td>
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<td>29.7, 15.8</td>
<td>59.4, 15.9</td>
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<td></td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

* $p \leq 0.10$
** $p \leq 0.05$
Noise emerges as a significant factor in all groups. These data were obtained from a question asking respondents to rate sound insulation in their rooms. The low level of overall satisfaction (no group showed satisfaction in even fifty percent of residents) suggests that this factor should be a prime target for administrators or planners desiring to improve residents' satisfaction.

One interesting and surprising finding is that satisfaction is not dependent on having friends coreside in a unit in Toad Hall. This reinforces the suggestion made earlier that Toad Hall suites do not constitute an architecturally created group of friends so much as a collection of functionally related individuals who spend time together.

The data indicate that, overall, the measured variables for the five person suites in Toad Hall and Burton Hall are more powerful determinants of satisfaction than for the Toad Hall ten person suites. This seems to suggest that the residents of the ten person suites have less commitment to their residence than either of the other two. Perhaps the larger unit size permits a degree of "distancing" not possible in a five person suite while the suite system generally means the ten person suite resident is not subject to the inescapable institutionalism of Burton Hall.

Cross tabulating privacy satisfaction against the various target variables indicates that having a friend in one's unit greatly enhances the satisfaction level in all groups. However the opposite holds for the Toad Hall five person suites if an individual's romantic partner is a coresident. There is little or
no relationship between privacy satisfaction and romantic partner location in the Toad Hall ten person suites or Burton Hall. It appears that the smaller group makes it difficult for couples to achieve their desired level of privacy.

Satisfaction with noise insulation also relates to privacy satisfaction in all groups. This suggests that respondents are using the term privacy to cover both social (e.g., disclosure of personal details) and non social intrusions (e.g., noise distraction).

The experiential-constitutional variables have little or no effect on the level of satisfaction with privacy. Although these experiential-constitutional variables are only crude measures this does suggest that the residential experience of privacy is mainly a state rather than a trait measure. That is, individual differences which individuals may have in privacy requirements are not as important as the physical and social conditions determining the availability of privacy.

Residents in the five person suites in Toad Hall are the most sensitive to privacy. This is best exemplified by the data relating privacy satisfaction to perceived success of own unit. This suggests that the smaller Toad unit produces a more intimate social group which makes the attainment of privacy difficult. Ten person suites presumably provide a degree of privacy by permitting individuals to have more control over their involvement in the group.

Satisfaction with privacy attainment and use of the common room is strongly related for Burton Hall but not Toad Hall. The
reason for this is not clear but may be due to the more "public" nature of the Burton Hall lounge.

Model Verification

The model based on the Exploratory study (see Diagram 5.1) suggests that four interacting clusters of variables constitute the main sources of variance relating to an individual's satisfaction with his or her residence. Three of these variables are psychosocial (experiential-constitutional; individual social behaviour; group characteristics), while the fourth is the physical environment. Explicit in the schematization of the model is the suggestion that the physical environment extends its influence on overall satisfaction via the psychosocial variables rather than by operating on satisfaction directly. This is obviously somewhat simplistic and depends to a large extent on the criteria used to define satisfaction. A satisfaction index composed of items relating to physical amenities would be expected to correlate more closely with the physical characteristics of the residence. Psychosocial determinants of satisfaction have been emphasised in this study mainly on the basis of many hours of informal discussion with residents.

The psychosocial emphasis should not in anyway be seen as contradicting the underlying premise of this research that the physical environment is an important influence on behaviour and attitudes. The point of view being advocated is that (in the case of student residences at least) the physical environment also operates by influencing such behaviours as duration and location of socializing with coresidents; group cohesion; group government; and
so on. This "higher order" mode of operation of the physical environment is evident in many studies relating social behaviour to the physical environment but is seldom articulated in discussions of person-environment interactions.

It should be noted that in the present study the differences between the two residence environments have been discussed mainly in terms of architectural design differences. Other, non-physical differences between the two environments may also be important (e.g., residence social traditions, management policies, etc.) but were beyond the scope of the present study. Non physical environmental factors have been included in the longitudinal study described in the following chapter.

The correlation matrices presented in Tables 5.11 and 5.12 may be used to test the validity of the model. A separate matrix for each residence permits an examination of the environment's influence on the manner in which the three psychosocial variable clusters relate both to each other and to overall satisfaction.

Diagrams 5.2 and 5.3 are schematic representations of the significant (p<0.05) correlations between cluster components. Examination of these diagrams reveals that the two residences differ considerably. The Toad Hall correlations tend to conform to the model's predictions in both strength and direction. That is, the correlations between individual variables are significant and positive to a greater degree than the correlations between variables in the Burton study. However it should be noted that even for the Toad Hall data only 12 out of a possible 43 correlations (27.9%)
<table>
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<th>Variable</th>
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<th>2</th>
<th>3</th>
<th>4</th>
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<td>0.26*</td>
<td>0.30*</td>
<td>0.06*</td>
<td>0.12*</td>
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<td></td>
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<td>Hours in common areas</td>
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<td>0.32*</td>
<td>0.15*</td>
<td>0.12*</td>
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<td>-0.06</td>
<td>-0.05</td>
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<tr>
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<td>0.08</td>
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<td>Satisfaction Quotient</td>
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a pooled data for five and ten person suites
b n = 140
* p < 0.05
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<th>Burton Hall Correlation Analysis (Kendall Coefficients)</th>
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<td>Total friends</td>
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<td></td>
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</tr>
<tr>
<td>Unit friends</td>
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<td></td>
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<td>Hours in common room</td>
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<td>Romantic satis.</td>
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<td>Perceived group success</td>
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<td>Rule Quotient</td>
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<td>Satisfaction Quotient</td>
<td>10</td>
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</table>

* n = 101
* p < 0.05
Diagram 5.2

Correlation Analysis\(^a\) of Model: Toad Hall

**Individual Social Behaviour**
- Satisfactory romantic relationship
- Time spent in common areas
- Total friends
- Friends in unit

**Satisfaction**
- Satisfaction Quotient

**Experiential and Constitutional Variables**
- Population level
- Family size
- Months in residence

**Group Characteristics**
- Perceived success of group
- Rule Quotient
- Attitude similarity Quotient

\(\text{a} \text{ Intercluster correlations only depicted}\)
DIAGRAM 5.3

Correlation Analysis\textsuperscript{a} of Model: Burton Hall

\begin{itemize}
  \item INDIVIDUAL SOCIAL BEHAVIOUR
  \begin{itemize}
    \item Romantic relationship
    \item Time spent in common areas
    \item Total friends
    \item Friends in unit
  \end{itemize}
  \item SATISFACTION
  \begin{itemize}
    \item Satisfaction Quotient
  \end{itemize}
\end{itemize}

\begin{itemize}
  \item EXPERIENTIAL AND CONSTITUTIONAL VARIABLES
  \begin{itemize}
    \item Population level
    \item Family size
    \item Months in residence
  \end{itemize}
  \item GROUP CHARACTERISTICS
  \begin{itemize}
    \item Perceived success of group
    \item Rule Quotient
    \item Attitude Similarity Quotient
  \end{itemize}
\end{itemize}

\textsuperscript{a}Intercluster correlations only depicted

--- Positive significant (p \textless{} 0.05) correlations
--- Negative significant (p \textless{} 0.05) correlations
conform to the model's predictions at a statistically significant level and the values themselves are low.

Only 18.6% of the total possible correlations contained in the model are significant for Burton Hall. In addition, five significant negative correlations are found. These negative correlations mainly occur between the experiential-constitutional cluster and the individual social or group characteristics variables. This suggests that the two residences differ in the way they influence the expression of social behaviours and in the way social groups develop. In concrete terms it appears that the social skills associated with friendship formation and social group dynamics differ between the two environments. In Toad Hall those variables hypothesised to contribute to friendship formation and effective group functioning do, in fact, do so. In Burton Hall, on the other hand, there is a definite tendency for these variables to operate in the reverse direction.

One possible conclusion to be drawn from the above data is that individuals who integrate best socially in Burton Hall are those whose backgrounds suggest the least social adeptness. This apparently paradoxical finding makes more sense when it is remembered that the present study biases the detection of social behaviour toward spatially constrained groups. This bias is compatible with Toad Hall but not Burton Hall architecture. Individuals who do have their social behaviour oriented around their spatially defined living unit might thus be considered to have failed to integrate socially in the more common Burton Hall manner (that is, through the dining room groups described in the Exploratory study). This interpretation is supported
by the fact that the Burton Hall psycho-social variable clusters exhibit very little correlation with overall satisfaction.

**Discussion:**

The picture of the social structure of Toad Hall and Burton Hall which emerged in the Exploratory Study has largely been substantiated in the present study. Those differences which have appeared have been mainly differences in emphasis. Assuming that there were no changes in the social dynamics of the two residences between the time the first study was conducted (Spring 1974) and when the second study was carried out (Spring 1976) it must be concluded that the description of Burton Hall social dynamics contained in the Exploratory Study tended toward a caricature. Although the Burton Hall units do not seem to constitute effective or cohesive groups they are nevertheless not quite a desolate social desert. By the same token, Toad Hall units do not seem to constitute primary social groups of an intimate and cohesive nature. They are, instead, what might be called "functional groups". Individuals making up these functional groups inevitably interact more as a consequence of the design of their environment but for the most part these groups do not replace the individuals "real" friends.

Population differences between the two residences make it difficult to determine the extent of environmental influence on resident behaviour and attitudes. However it seems implausible that many of the recorded differences could be solely a function of population differences. In fact the correlation analysis suggests that individual differences may interact with the physical environment to exert an influence. This interpretation has considerable
intuitive appeal and represents a promising new conceptual stance for the investigation of person-environment relationships. Most existing literature suggests that practically all modern institutional buildings are designed with an homogenous user group in mind (with one important exception in recent years, that of people confined to wheelchairs). This attempt to design for a hypothetical, statistically derived "grey" population may be the basis of many user complaints. Recognition of the fact that there is a range of individual differences in user groups may help reduce such complaints. A move in this direction is contained in a recent issue (Vol 9, Number 2) of Environment and Behaviour devoted specifically to the issue of "Personality and the Environment".

Differences between the five person and ten person units in Toad Hall were also found. Again, population differences between the two unit types may contribute to the rather different social climates but group size differences seem to provide a more parsimonious explanation. It is more difficult to behave autonomously in a group of five persons than a group of ten persons because the arithmetic of the groups means that the proportional impact of any one individual in a five person group is twice what it would be in a ten person group.

Perhaps the most significant point to emerge from the present study relates to the subtlety and complexity of person-environment systems. This may be illustrated by the finding that residents of the ten person suites in Toad Hall seemed more immune to the influence of their environment than do either of the other groups and that the basis of this finding seems to be quite different for each of the
other groups (i.e., Toad Hall five person suites exert their influence in a totally different manner from the way Burton Hall exerts its influence).

The conceptual "model" constructed to facilitate the design of the present study has been shown to have some value for describing the psychosocial dynamics of student residences. The fact that it responds differentially to different residence types adds to its value. Although further work is obviously required to refine the components of the model its general structure appears to be satisfactory.
CHAPTER 6

A Longitudinal Study of Residence Hall Social Dynamics

The Exploratory Study (Chapter 4) data suggested that time may be an important variable influencing the psycho-social dynamics of student residences. In particular, group functioning during the course of a year may progress through a series of phases at various rates depending on group composition and environment. It could thus be argued that an environment which facilitates intra-group contact (e.g., Toad Hall five person suites) would progress through these stages more quickly than a group housed in a sociofugal environment.

The progression of a group through various stages is still largely hypothetical although impressionistic accounts of such a process are common. If such a process does occur it could take a variety of forms ranging from linear progression through to a climax community to a complex cyclic form. Despite the lack of formal support for such an hypothesis its plausibility and apparent heuristic value support its inclusion in the present research.

A preliminary attempt to gather data on changes in the social dynamics of natural groups over time was made. Two student residences belonging to a non-metropolitan College of Advanced Education offered an excellent opportunity to mount such a longitudinal study. Each residence housed approximately the same number of students. The residences were readily accessible and differed from each other in architectural design. The McRae House
residence was a suite style complex housing 13 students per suite. It was located in picturesque surroundings adjacent to the main College campus. Clarke House residence was located on a main road approximately a kilometre from the main campus. This residence consisted of four blocks of motel style rooms housing 42 students and served by a single common lounge. In the first few months in which this residence was studied cooking facilities were not available and an outside caterer provided all meals. Eventually a communal kitchen was constructed to serve all 42 residents.

The internal architecture of McRae House is depicted in Diagram 6.1. In general concept the study-bedrooms opening onto a corridor linking the entire complex is reminiscent of Toad Hall but the routing of the passage behind the kitchen and lounge represents an improvement on the Toad Hall model. The contiguity of kitchen and lounge is similar in concept to the Canberra College of Advanced Education residence design but the lounge itself has more of a lounge atmosphere than a family room atmosphere, possibly because arm chairs are provided by McRae House.

Clarke House design is essentially that of a semicircle of residence blocks surrounding the amenities blocks (see Diagram 6.2). Fourteen of the rooms were designed to accommodate one resident and the other fourteen rooms were designed to take two residents giving a maximum capacity of 42. All rooms contained the usual sleeping, clothes storage and studying facilities as well as a toilet and shower. An inadequate hot water system elicited frequent criticism but the other facilities appeared to be satisfactory.
DIAGRAM 6.1
Schematic Representation of one McRae House Suite

KEY
A Study Bedroom
B Kitchen
C Lounge
D Verandah
E Bathroom toilet
F Courtyard
DIAGRAM 6.2

Schematic Representation of Clarke House Layout

KEY
A Single Study-Bedroom
B Store room
C Double Study-Bedroom
D Laundry
E Kitchen Dining-room
F Lounge
G Residence Fellow’s Flat
Both residences provided a self-contained flat for a live-in House "Fellow". In the case of McRae House this position was filled by a younger member of the academic staff and his wife. The residence fellow at Clarke House was a full time member of the administrative staff who was responsible for the management of both residences with respect to finance, maintenance, cleaning, etc. as well as the duties of Fellow. The formal duties of the Fellows included both a property custodial function and a liaison function with the Residence Governing Body. This group consisted of various College administrators, academic staff and students and was responsible for all major policy decisions. A genuine attempt was made by the Residence Governing Body to maximise resident input into the decision making process but the social forces existing within the meeting situation usually forced a role of benevolent paternalism onto the non-student members. For the most part, however, the organisational structure worked efficiently and was considered a success by both the residents and administrators.

Residence Fellows also adopted an unofficial "social" role. This included such activities as intervening in group squabbles, promoting residence harmony and individual counselling. Both Fellows appeared to have a genuinely strong commitment to this facet of their roles but, presumably because of personality differences, displayed rather different emphases. The McRae Fellow concentrated on suite groups and particularly the Residence as a whole in an attempt to facilitate group morale and residence spirit. The Clarke Fellow adopted a low key approach and emphasised one to one relationships within his residence. Both Fellows achieved a fair degree of success in their chosen social role and all residents
appeared to consider that the Fellows were making a sincere and concerted effort to improve the residents' living conditions.

Method

The methodology used in this study was almost identical to that used in the Canberra Partial Replication Study described in the previous chapter. That is, a questionnaire collection of data on the personal characteristics, behaviour and attitudes of residents. The principle difference between the two studies was that the longitudinal study is based on data collected on three occasions during the academic year and that the questionnaires were administered in the form of an interview schedule. Respondents were not rewarded for participation.

Questionnaire

The complete questionnaire is presented in Appendix 10. The design of the questionnaire was guided by the same conceptual model used in the previous chapter (see Diagram 5.1).

Interviewers

Four mature female students were chosen as interviewers. The relatively small size of the institution and the personal nature of some of the data necessitated careful attention to the choice of interviewers. The four individuals selected were able to relate well to residents and to allay any incipient fears residents may have felt concerning breaches of confidentiality. Interviewers were paid a small sum.
Data Collection

The use of four interviewers produced a ratio of about 20 residents per interviewer. This ratio permitted data collection to occur over about a one week span thus minimising the effects of cross contamination and other extraneous variables.

The interviews were conducted on three occasions during the year. At four weeks into the first term, three weeks into the second term, and three weeks into the third term. Coverage was very close to 100% of occupants on each occasion. Various other data (e.g., discussions with Residence Fellows past and present) were collected throughout the year. Towards the end of the third term all residents who left during the year were mailed a brief "Exit Questionnaire" designed to solicit information concerning the reasons for the residents' decision to leave their residence. The questionnaire (See Appendix 11) produced the disappointing return rate of only 33%. This low rate was partly a function of inaccurate forwarding addresses and partly because some ex residents were no longer students of the College.

Results

Results are presented in sections corresponding to the research model outlined in the previous chapter (Diagram 5.1). The central issue in their analysis is trends over time. Cross tabulation between variables was not undertaken because of the small samples.
Experiential-constitutional Variables (See Tables 6.1 and 6.2)

There are no statistically significant differences over time for either residence, nor are trends in the data over the three terms apparent. This indicates that population differences during the course of the year remain similar and this permits interpretations of behaviour differences over the year in terms of the physical and social environment.

Individual Social Behaviour Variables (See Tables 6.3 and 6.4)

The only clear and statistically significant trend over time in both residences is the increase in probability that individuals will have a romantic partner. The basic reason for the inclusion of this variable was the hypothesis that possession of a romantic partner would produce a very strong halo effect over general satisfaction. The Canberra data offered little support for this hypothesis so changes in satisfaction level over time may tentatively be presumed to occur as a consequence of variables other than romantic satisfaction. Trends in overall satisfaction (See Tables 6.11 and 6.12) support this presumption.

Overall the Clarke House data show more definite trends than do those for McRae House. Almost all statistically significant changes during the year, and most of the less substantial changes, are in the direction of lower resident-resident social contact in Clarke House. The trends in McRae House tend to follow a "U" function in that the responses in the middle term are indicative of less social contact than either the first or third term. The one exception to this trend is that for the use of the common room for entertaining.
**TABLE 6.1**  
Experiential-Constitutional Variables Over Three Terms: McRae House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>X^2 value between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Females</td>
<td>42.5</td>
<td>40.6</td>
</tr>
<tr>
<td>Individuals less than 21 years old</td>
<td>72.5</td>
<td>84.4</td>
</tr>
<tr>
<td>Individuals who have spent more than 2 years at the College</td>
<td>12.5</td>
<td>9.4</td>
</tr>
<tr>
<td>Individuals who have spent 9 months or less in the residence</td>
<td>75.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals reared in small towns or rural surroundings</td>
<td>47.5</td>
<td>40.7</td>
</tr>
<tr>
<td>Individuals reared in a larger family</td>
<td>20.0</td>
<td>18.8</td>
</tr>
</tbody>
</table>

n = 40  n = 33  n = 38

Significance levels (df = 1, non directional)

* p ≤ 0.10  
** p ≤ 0.05  
*** p ≤ 0.01
### TABLE 6.2

Experiential Constitutional Variables Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ value between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Females</td>
<td>28.9</td>
<td>25.0</td>
</tr>
<tr>
<td>Individuals less than 21 years old</td>
<td>75.6</td>
<td>80.0</td>
</tr>
<tr>
<td>Individuals who have spent more than 2 yrs at the College</td>
<td>8.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Individuals reared in small towns or rural surroundings</td>
<td>44.4</td>
<td>42.5</td>
</tr>
<tr>
<td>Individuals who have spent 9 mths or less in the Residence</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Individuals reared in a larger family</td>
<td>20.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

$n = 45 \quad n = 40 \quad n = 30$

Significance levels (one df, non directional)

* $p \leq 0.10$

** $p \leq 0.05$

*** $p \leq 0.01$
<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ value between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals having more than 10 friends in total</td>
<td>45.0 43.8 52.6</td>
<td>0.01 1.22 0.87</td>
</tr>
<tr>
<td>Individuals having no friends</td>
<td>0.0 6.3 0.0</td>
<td>4.60 ** 4.60 ** 0.0</td>
</tr>
<tr>
<td>Individuals having more than ten friends in the residence</td>
<td>22.5 3.1 18.4</td>
<td>15.17 *** 10.66 *** 0.30</td>
</tr>
<tr>
<td>Individuals having no friends in the residence</td>
<td>10.0 6.3 5.3</td>
<td>0.49 0.01 0.97</td>
</tr>
<tr>
<td>Individuals having no friends in their unit</td>
<td>27.5 31.3 21.1</td>
<td>0.19 2.19 0.79</td>
</tr>
<tr>
<td>Individuals who use common areas to entertain visitors</td>
<td>37.5 25.0 15.8</td>
<td>2.29 2.07 10.96 ***</td>
</tr>
<tr>
<td>Individuals who spend 3 hours or more in the common areas</td>
<td>42.5 34.4 39.5</td>
<td>1.07 0.36 0.08</td>
</tr>
<tr>
<td>Individuals who have a boy or girl friend</td>
<td>42.5 59.4 92.1</td>
<td>5.06 ** 27.35 *** 53.66 ***</td>
</tr>
</tbody>
</table>
### TABLE 6.3 (Cont.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ value between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals who have boy or girl friend living in their unit</td>
<td>5.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Individuals who consider that co-residents know their friends</td>
<td>62.5</td>
<td>75.0</td>
</tr>
</tbody>
</table>

*(n = 45) (n = 40) (n = 30)*

Significance levels (df = 1, non directional)

- * $p \leq 0.10$
- ** $p \leq 0.05$
- *** $p \leq 0.01$
**TABLE 6.4**

Individual Social Behaviour Variables Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category Term 1</th>
<th>Percent in Category Term 2</th>
<th>Percent in Category Term 3</th>
<th>$\chi^2$ values between pairs of terms Term 1/Term 2</th>
<th>Term 2/Term 3</th>
<th>Term 1/Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals having more than 10 friends in total</td>
<td>24.4</td>
<td>40.0</td>
<td>30.0</td>
<td>4.88 **</td>
<td>1.78</td>
<td>0.53</td>
</tr>
<tr>
<td>Individuals having no friends</td>
<td>0.0</td>
<td>2.5</td>
<td>0.0</td>
<td>1.30</td>
<td>1.30</td>
<td>0.00</td>
</tr>
<tr>
<td>Individuals having more than 10 friends in residence</td>
<td>11.1</td>
<td>7.5</td>
<td>0.0</td>
<td>0.40</td>
<td>5.85 **</td>
<td>9.73 ***</td>
</tr>
<tr>
<td>Individuals having no friends in the residence</td>
<td>15.6</td>
<td>10.0</td>
<td>6.7</td>
<td>0.95</td>
<td>0.35</td>
<td>2.98 *</td>
</tr>
<tr>
<td>Individuals having no friends in their unit</td>
<td>24.4</td>
<td>25.0</td>
<td>33.3</td>
<td>0.01</td>
<td>1.29</td>
<td>1.52</td>
</tr>
<tr>
<td>Individuals who use common areas to entertain their visitors</td>
<td>6.7</td>
<td>5.0</td>
<td>0.0</td>
<td>0.04</td>
<td>3.28 *</td>
<td>5.02 **</td>
</tr>
<tr>
<td>Individuals who spend 3 hours or more in the common areas</td>
<td>8.9</td>
<td>5.0</td>
<td>3.3</td>
<td>0.65</td>
<td>0.06</td>
<td>1.85</td>
</tr>
<tr>
<td>Individuals who have a boy or girl friend</td>
<td>55.6</td>
<td>67.5</td>
<td>100.0</td>
<td>2.51</td>
<td>36.45 ***</td>
<td>54.53 ***</td>
</tr>
</tbody>
</table>
TABLE 6.4 (Cont.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>X² values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals who have a boy or girl friend living in their unit</td>
<td>11.1</td>
<td>10.0</td>
</tr>
<tr>
<td>Individuals who consider that co-residents know their friends</td>
<td>82.2</td>
<td>80.0</td>
</tr>
<tr>
<td></td>
<td>n = 45</td>
<td>n = 40</td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

- * p ≤ 0.10
- ** p ≤ 0.05
- *** p ≤ 0.01
The only other statistically significant trend over time is the reduction in probability of two romantic partners sharing the same unit in Clarke House. The declining proportion of females in Clarke House during the year seems to be the most plausible basis of this finding.

**Unit Variables** (See Tables 6.5 to 6.10)

In general there is not a great deal of change in the characteristics of units during the year. Clarke House shows the most significant longitudinal changes, these being principally the imposition of resident generated rule systems. McRae House shows no new distinct patterns but most of the statistically significant changes during the year conform to the "U" function described above. The linear decline in social contact characteristic of the Clarke House individual social behaviour variables is also complemented by a number of significant differences and trends in the present variable cluster. For example the decline in Similarity Quotient Scores (whether they represent real or imagined differences) is consistent with, and perhaps contributes to, reduced interpersonal contact. The increase in the proportion of individuals who considered their units had self-imposed rule systems of various kinds, when viewed in this milieu of declining interpersonal contact, suggests a degree of animosity may have been building up between residents of Clarke House.

**Satisfaction Variables** (See Tables 6.11 and 6.12)

Trends isolated in the preceding analyses are again apparent in the Satisfaction variables. Clarke House shows more change over the year, mainly in declining satisfaction while McRae House's one
TABLE 6.5
General Unit\textsuperscript{a} Characteristics over Three Terms: McRae House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>(X^2) values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Units having more males</td>
<td>100.0</td>
<td>68.8</td>
</tr>
<tr>
<td>Individuals rating own unit as one of more successful</td>
<td>42.5</td>
<td>37.5</td>
</tr>
<tr>
<td>Individuals who consider there is an accepted leader in their unit</td>
<td>15.0</td>
<td>6.3</td>
</tr>
<tr>
<td>Individuals responding that no unit social events were held during the year</td>
<td>27.5</td>
<td>34.4</td>
</tr>
</tbody>
</table>

\(n = 40\) \(n = 32\) \(n = 38\)

\textsuperscript{a} The term "units" refers to a self contained suite of 13 residents.

Significance levels (df = 1, non directional)

\* \(p \leq 0.10\)

\** \(p \leq 0.05\)

\*** \(p \leq 0.01\)
TABLE 6.6

General Unit Characteristics Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Units having more males</td>
<td>66.7</td>
<td>65.0</td>
</tr>
<tr>
<td>Individuals rating own unit as one of more successful</td>
<td>35.6</td>
<td>32.5</td>
</tr>
<tr>
<td>Individuals who consider there is an accepted leader in their unit</td>
<td>26.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Individuals responding that no unit social events were held during the year</td>
<td>62.2</td>
<td>65.0</td>
</tr>
</tbody>
</table>

n = 45  n = 40  n = 30

* The term "units" refers to a block of seven rooms. These can be single or double rooms.

Significance levels (df = 1, non directional)

* $p \leq 0.10$

** $p \leq 0.05$

*** $p \leq 0.01$
TABLE 6.7

Unit\textsuperscript{a} Functioning (Rule System) Over Three Terms: McRae House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed noise rules</td>
<td>40.0</td>
<td>62.5</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed borrowing rules</td>
<td>42.5</td>
<td>53.1</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed visitor rules</td>
<td>25.0</td>
<td>34.4</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed cleanliness rules</td>
<td>57.5</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals with a high overall Rule Quotient</td>
<td>30.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>

(n = 40) (n = 32) (n = 38)

\textsuperscript{a} unit refers to a self contained suite of 13 residents

Significance levels (df = 1, non directional)

* $p \leq 0.10$
** $p \leq 0.05$
*** $p \leq 0.01$
TABLE 6.8

Unit Functioning (Rule System) Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed noise rules</td>
<td>11.1</td>
<td>15.0</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed borrowing rules</td>
<td>11.1</td>
<td>15.0</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed visitor rules</td>
<td>16.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Individuals responding that their unit had self imposed cleanliness rules</td>
<td>11.1</td>
<td>15.0</td>
</tr>
<tr>
<td>Individuals with a high overall Rule Quotient</td>
<td>6.7</td>
<td>15.0</td>
</tr>
</tbody>
</table>

(n = 45) (n = 40) (n = 30)

* Unit refers to a block of seven rooms. These may be single or double rooms.

Significance levels (df = 1, non directional)

* $p \leq 0.10$
** $p \leq 0.05$
*** $p \leq 0.01$
### TABLE 6.9

Unit\(^a\) Functioning (Attitude Similarity) Over Three Terms: McRae House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>(X^2) values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' political views</td>
<td>30.0</td>
<td>31.3</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' views concerning money</td>
<td>25.0</td>
<td>21.9</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' sexual morality attitudes</td>
<td>25.0</td>
<td>15.6</td>
</tr>
<tr>
<td>Individuals with higher Similarity Quotient Scores</td>
<td>45.0</td>
<td>37.5</td>
</tr>
<tr>
<td>(n = 40) (n = 32) (n = 38)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Unit refers to a self contained suite of 13 residents

Significance levels (df = 1, non directional)

- \(*\) \(p \leq 0.10\)
- \(**\) \(p \leq 0.05\)
- \(***\) \(p \leq 0.01\)
### TABLE 6.10

Unit a Functioning (Attitude Similarity) Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>X² values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' political views</td>
<td>15.6</td>
<td>22.5</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' views concerning money</td>
<td>11.1</td>
<td>12.5</td>
</tr>
<tr>
<td>Individuals who do not know unit coresidents' sexual morality views</td>
<td>8.9</td>
<td>17.5</td>
</tr>
<tr>
<td>Individuals with higher Similarity Quotient Scores</td>
<td>57.8</td>
<td>42.5</td>
</tr>
</tbody>
</table>

(a = 0.05)

Significance levels (df = 1, non directional)

* p < 0.10

** p < 0.05

*** p < 0.01
statistically significant change again follows a U shaped course indicating least satisfaction in the middle term.

One of the more interesting findings is the difference between the two residences in satisfaction with layout over the year. In McRae House within and between suite accesses are all under the main roof while the Clarke House design means trips of up to twenty or thirty metres across uncovered grass and asphalt to reach the lounge and kitchen-dining room. In the summer this design feature is probably inconsequential but the winters bring strong, cold gales and frequent rain and thus transform this essential trip into an unpleasant journey.

The sharp decline in the Clarke House satisfaction with diet between the first and second term coincides with the move from caterer-provided food to self-prepared meals. The very high satisfaction levels achieved by the caterer (95.6%) are a considerable tribute when compared, for example, to the amount of satisfaction expressed by Burton Hall residents in Canberra (23.8%). The degree of satisfaction expressed by residents when preparing their own food is in the 70% - 80% range for all residences sampled.

Residents in both McRae and Clarke Houses are critical of their facilities for entertaining visitors. In fact with the satisfaction level hovering around the 50% mark this variable emerges as one of the least satisfactory facets of the design of both residences. Unfortunately data were not collected on what alternative facilities residents would prefer.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals satisfied with residence layout</td>
<td>65.0</td>
<td>62.5</td>
</tr>
<tr>
<td>Individuals satisfied with entertaining facilities</td>
<td>42.5</td>
<td>56.3</td>
</tr>
<tr>
<td>Individuals satisfied with diet</td>
<td>70.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals satisfied with present lifestyle</td>
<td>87.5</td>
<td>71.9</td>
</tr>
<tr>
<td>Individuals satisfied with daily schedule</td>
<td>80.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals satisfied with amount of study completed</td>
<td>55.0</td>
<td>46.9</td>
</tr>
<tr>
<td>Individuals satisfied with amount of privacy obtained</td>
<td>60.0</td>
<td>59.4</td>
</tr>
<tr>
<td>Individuals satisfied with the size of their room</td>
<td>80.0</td>
<td>75.0</td>
</tr>
</tbody>
</table>
Variable

Individuals who would return to this residence next year

Individuals with higher Satisfaction Quotient Scores

<table>
<thead>
<tr>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>52.5</td>
<td>34.4</td>
</tr>
<tr>
<td>27.5</td>
<td>37.5</td>
</tr>
</tbody>
</table>

(n = 40) (n = 32) (n = 38)

Significance levels (df = 1, non directional)

* $p \leq 0.10$

** $p \leq 0.05$

*** $p \leq 0.01$
TABLE 6.12
Satisfaction with Residence Over Three Terms: Clarke House

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>$X^2$ values between pairs of terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term 1</td>
<td>Term 2</td>
</tr>
<tr>
<td>Individuals satisfied with residence layout</td>
<td>80.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Individuals satisfied with entertaining facilities</td>
<td>57.8</td>
<td>55.0</td>
</tr>
<tr>
<td>Individuals satisfied with diet</td>
<td>95.6</td>
<td>70.0</td>
</tr>
<tr>
<td>Individuals satisfied with present lifestyle</td>
<td>86.7</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals satisfied with day to day schedule</td>
<td>88.9</td>
<td>70.0</td>
</tr>
<tr>
<td>Individuals satisfied with amount of study completed</td>
<td>48.9</td>
<td>50.0</td>
</tr>
<tr>
<td>Individuals satisfied with amount of privacy obtained</td>
<td>93.3</td>
<td>75.0</td>
</tr>
<tr>
<td>Individuals satisfied with the size of their room</td>
<td>66.7</td>
<td>80.0</td>
</tr>
</tbody>
</table>
### Variables

Individuals who would return to this residence next year

Individuals who are very satisfied with present residence (higher Satisfaction Quotient Score)

<table>
<thead>
<tr>
<th></th>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>66.7</td>
<td>45.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>46.7</td>
<td>30.0</td>
<td>23.3</td>
<td></td>
</tr>
</tbody>
</table>

(n = 45) (n = 40) (n = 30)

<table>
<thead>
<tr>
<th></th>
<th>Term 1/Term 2</th>
<th>Term 2/Term 3</th>
<th>Term 1/Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.69 ***</td>
<td>0.32</td>
<td>5.07 **</td>
<td></td>
</tr>
<tr>
<td>5.21 **</td>
<td>0.83</td>
<td>11.03 ***</td>
<td></td>
</tr>
</tbody>
</table>

Significance levels (df = 1, non directional)

* p < 0.10
** p < 0.05
*** p < 0.01
Neither McRae nor Clarke residents are very satisfied with the amount of study they have undertaken. It is possible that the environmental conditions prevailing in the residences are directly responsible for this dissatisfaction but most residents admit that insufficient personal motivation is the major reason for reduced attention to study time. Indirect environmental influences may be important.

The expressed satisfaction with the amount of privacy obtained displays no obvious trend. In some ways the finding that Clarke House residents are less prone to privacy invasion is not surprising. The physical design of their residence is not conducive to interpersonal interaction and the motel-type rooms offer good acoustic and visual screening. The use of shared rooms might have been expected to make the attainment of privacy difficult and thus decrease the overall level of privacy satisfaction in the residence but the data (see Table 6.13) do not support this assumption. In fact residents of double rooms are slightly more satisfied than single room residents with the amount of privacy they have obtained. An ex resident's explanation for this curious finding is that residents of double rooms are less prone to be interrupted in their rooms because visitors are hesitant to disturb their friend's room-mate.

**The Effects of Room Sharing** (See Table 6.13 and 6.14)

The Clarke House double rooms are approximately twice the size of the single rooms but facilities (e.g., bathroom) are not duplicated. It seems reasonable to expect that room sharing will produce feelings of crowding and privacy loss and that these responses will in turn affect other behaviours. However the pooled data for the year
indicated few significant effects associated with room sharing.

The largest difference between individuals sharing and not sharing is in the incidence of co-unit friendship. Nor surprisingly sharing residents are more likely to have a friend in their unit. The fact that more than ninety percent of residents in shared rooms have at least one unit co-resident as a friend (versus just over forty percent of the non-sharing residents) strongly suggests that most sharing is between residents who were initially friends or who have become friends as a consequence of room sharing. The relatively high turnover of residents during the year and sub-maximum occupancy rate meant that (funds permitting) most residents were able to choose whether or not they shared a room. The slightly higher proportion of more gregarious individuals in the shared rooms is probably a consequence of this self-selection.

There is a stronger tendency for individuals living in units consisting of shared rooms to devise and maintain a set of self administered rules. The questionnaire item on which this data is based referred to unit-wide rule systems rather than within-room systems. On the face of it there seems little reason to expect shared blocks to have more rules than unshared blocks (although better defined rules might well be expected within shared rooms). A possible post hoc explanation for this finding might be that shared room units house 14 individuals while unshared units house only 7 individuals and the higher gross numbers of the shared room units makes control more necessary. For example fourteen people have the potential to produce at least twice as much noise as 7 people. The plausibility of this explanation is weakened by the
<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>x² value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals with 10 or more friends in the residence</td>
<td>2.8</td>
<td>8.4</td>
</tr>
<tr>
<td>Individuals with no friends in their unita</td>
<td>56.8</td>
<td>10.17</td>
</tr>
<tr>
<td>Individuals who spend less than one hour per day in common areas</td>
<td>68.0</td>
<td>78.1</td>
</tr>
<tr>
<td>Individuals who usually study in their room</td>
<td>100</td>
<td>93.7</td>
</tr>
<tr>
<td>Individuals rating own unit as one of the more successful</td>
<td>28.37</td>
<td>31.8</td>
</tr>
<tr>
<td>Individuals with a high overall Rule Quotient</td>
<td>7.2</td>
<td>15.8</td>
</tr>
<tr>
<td>Individuals with a high overall Similarity Quotient</td>
<td>34.0</td>
<td>42.4</td>
</tr>
</tbody>
</table>

(n = 40) (n = 75)

(Note n's refer to pooled data for three terms)  
"unit" refers to a block of seven either single or double rooms

Significance levels (df = 1, non-directional)  
* p < 0.10  
** p < 0.05  
*** p < 0.01
<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th></th>
<th>X² value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unshared room</td>
<td>Shared room</td>
<td></td>
</tr>
<tr>
<td>Individuals satisfied with residence layout</td>
<td>55.9</td>
<td>63.0</td>
<td>0.77</td>
</tr>
<tr>
<td>Individuals satisfied with entertaining facilities</td>
<td>46.8</td>
<td>54.0</td>
<td>0.77</td>
</tr>
<tr>
<td>Individuals satisfied with diet</td>
<td>78.0</td>
<td>82.2</td>
<td>0.32</td>
</tr>
<tr>
<td>Individuals satisfied with present lifestyle</td>
<td>74.9</td>
<td>82.6</td>
<td>1.32</td>
</tr>
<tr>
<td>Individuals satisfied with daily schedule</td>
<td>79.6</td>
<td>80.9</td>
<td>0.01</td>
</tr>
<tr>
<td>Individuals satisfied with amount of study completed</td>
<td>67.7</td>
<td>41.1</td>
<td>13.21 **</td>
</tr>
<tr>
<td>Individuals satisfied with amount of privacy obtained</td>
<td>89.8</td>
<td>82.3</td>
<td>1.76</td>
</tr>
<tr>
<td>Individuals satisfied with the size of their rooms</td>
<td>80.0</td>
<td>70.0</td>
<td>2.16</td>
</tr>
<tr>
<td>Individuals who would return to this residence next year</td>
<td>54.4</td>
<td>54.0</td>
<td>0.01</td>
</tr>
</tbody>
</table>
TABLE 6.14 (Cont.)

Clarke House: Satisfaction Variable Responses According to Room Sharing

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent in Category</th>
<th>X² value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals with higher Satisfaction Quotient Scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unshared room</td>
<td>31.4</td>
<td>0.14</td>
</tr>
<tr>
<td>Shared room</td>
<td>34.9</td>
<td></td>
</tr>
<tr>
<td>n = 40</td>
<td></td>
<td>n = 75</td>
</tr>
</tbody>
</table>

(Note: n's refer to pooled data for three terms)

Significance levels (df = 1, non directional)

* $p \leq 0.10$
** $p \leq 0.05$
*** $p \leq 0.01$
fact that in the Replication Study conducted in Canberra (see Chapter 5, Table 5.4) it was found that the five person suites in Toad Hall had a stricter rule system than did the ten person suites.

Very little difference in satisfaction occurs between individuals living in shared versus single rooms. The one statistically significant difference concerns satisfaction with study completed and indicated that fewer sharing residents were satisfied with the amount of time they spent in study. As almost all residents studied in their rooms this suggests that some facet of the person-environment fit in the double rooms is not conducive to study.

It is important to note that neither entertaining, nor privacy, nor daily schedules appear to be disrupted by room sharing. These rather surprising results reinforce the suggestion made earlier that most sharing is with friends in that, almost by definition, friends constitute less of a threat to privacy than either disliked persons or strangers.

**Exit Questionnaire Data** (See Table 6.15)

Note that the very small sample (a total of 14 for both residences) means it is difficult to make categorical statements about the data. It is clear, however, that problems with privacy was the most frequently articulated reason individuals gave for leaving the residence. The overall satisfaction with obtained privacy (average percent of residents satisfied over the year being 64.4% for McRae and 85% for Clarke House) seems to suggest that the residents who left during the year constitute a group particularly
TABLE 6.15
Exit Questionnaire Responses for McRae House and Clarke House

Percent ranking variable 1 or 2 as reason for leaving residence

<table>
<thead>
<tr>
<th>Variable</th>
<th>McRae House</th>
<th>Clarke House</th>
<th>Both Houses Combined (Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence too remote</td>
<td>17</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Recreation facilities lacking</td>
<td>17</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>Poor physical design</td>
<td>50</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Administration Problems</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lack of privacy</td>
<td>57</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>Expense</td>
<td>0</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Unable to get on with other residents</td>
<td>0</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

(n = 6)  (n = 8)  (n = 14)
sensitive to privacy needs.

The administration emerges well from the Exit Questionnaire data in that no ex-resident considered them an important factor in their decision to leave. It is interesting to note in this connection that during the course of the year the administration went to considerable expense in time and money to improve the residence recreation facilities. The data suggest that, for this particular group of ex-residents anyway, this effort was possibly misguided. That is, inadequate recreation facilities did not rank nearly as high as design and privacy problems with the ex-residents.

Using this type of data as the basis for decision making has certain hazards for it seems possible that residents sufficiently dissatisfied to leave during the year may constitute a special group whose psycho-social needs are incompatible with residence life. More comprehensive pre-entry counselling may be a better way of minimising their particular problems and this would mean that attention could be focused on the quite possibly different needs of individuals who are better suited to residence life.

Discussion

The magnitude of changes in the social dynamics of the residence during the year are generally quite small. Despite this overall temporal stability there do seem to be some definite trends evident in the two residences. The main characteristic of the trends is a declining "morale" function in the case of Clarke House and a U-shaped morale-time relationship in McRae House with a marked low point in the middle (winter) term. The very high turnover rate in both
residences (54% in McRae and 50% in Clarke House) is at once a reflection of the morale problem and also probably buffers its expression in the data to some extent. That is, if alternative accommodation had not been so readily available (mainly as a consequence of metropolitan drift produced by the rural crisis), the proportion of discontented residents would presumably have been much higher.

TABLE 6.16
Occupancy of McRae and Clarke House over Three Terms

<table>
<thead>
<tr>
<th>Residence</th>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>McRae House</td>
<td>100</td>
<td>82</td>
<td>97</td>
</tr>
<tr>
<td>Clarke House</td>
<td>110 *</td>
<td>98</td>
<td>74</td>
</tr>
</tbody>
</table>

* This figure is the result of a number of permanent unofficial guests.

Careful consideration of the empirical data and much impressionistic data suggests that the most plausible explanation for the trends in the two residences is based on the different involvement styles of the two Residence Fellows and the manner in which their styles interacted with the design of their residences. The design of McRae House almost inevitably creates three groups of thirteen people. Although the cohesiveness of these groups probably varies according to a variety of factors the basic group structure is nevertheless designed into the residence. The
provision of a communal recreation room (serving all 42 residents) and the relatively small total size of the residence also helps create a degree of unity for the whole of McRae House. The Residence Fellow's task in establishing and maintaining morale is thus facilitated by the design of the residence. The division of the residence into three groups means that difficulties are more easily isolated to a third of the total and are thus more easily rectified.

The architectural layout of McRae House by providing for both discrete groups and the whole House thus facilitates the achievement of group morale in McRae House. The hierarchical arrangement permits involvement at both levels (unit and House) as well as permitting a discontented resident of one unit to transfer his socialising quite easily to another unit. Within unit friction may thus be minimised. The decline in morale evident in McRae House during the second term seems to have been the result of a number of factors. Principle among these were a number of interresident personality clashes, certain administrative problems and possible minor design inadequacies (e.g., absence of doors at corridor ends made heating lounges very difficult). Faced with this situation the Residence Fellow energetically and skilfully operated on the unit and House groups to improve the situation mainly by fostering the development of group involvement in various House activities. Although the design of the residence facilitated the success of his involvement it is to his great credit that he was able to capitalise on this fact and help create a significant improvement in the social climate of his residence. The momentum built up by these various involvement groups will probably need re-catalysing at the beginning of each year but hopefully the seeds
of a dynamic and involved residence culture may have taken root. (It is interesting to note that two or three years previously a very successful group morale had been established but that for some reason this had dissipated during the previous year. A large influx of new residents may be the basis of this finding).

The Clarke House-Residence Fellow interaction seems to have operated in quite a different manner from the above. The design of Clarke House does not help the formation of cohesive unit groups because even though the residents' rooms are grouped into four blocks there is no social node in each block around which a group can easily form. The loci for casual social interactions of residents are thus largely confined to the kitchen-dining room area and the lounge, particularly once autumn has set in, and neither of these is likely to promote the emergence of large subgroupings or whole House social cohesion. Firstly the very size of the population (approximately 40) is such that the formation of a single cohesive group (analogous to a single McRae House unit of 13) is difficult under normal conditions. Secondly both the kitchen-dining area and the lounge were physically and "atmospherically" cold and residents thus avoided using them as much as possible. Finally the formation of smaller subgroups of residents was not helped by the physical design of the residence because socialising occurred in the one reasonably warm spot in the entire residence, the study bedrooms. It was necessary to keep doors firmly closed to keep out the cold and this meant that spontaneous socializing became virtually impossible.
The overall design of Clarke House thus mitigated against the establishment of intra residence socializing as well as subgroup formation. Such friendship groups as did occur were kept small because of the limited acceptable socializing space and the difficulty of enlarging groups via the spontaneous or casual acquisition of new members. The social management style of the Clarke House Fellow appeared to complement these design features in that he concentrated on establishing good relationships between himself and the individual residents, an enterprise in which he showed considerable success. This approach, however, meant that neither the architectural design nor management of Clarke House promoted group establishment and development and it seems that the isolated, nuclear existence ensuing may have been the basis of the general disenchantment and low morale characterising Clarke House by the end of the year.

Room sharing appears to offer both advantages and disadvantages to Clarke House residents (note that it is improbable that the same psychosocial consequences of room sharing would occur in a residence like McRae House). On the one hand residents of shared units appear to be more socially integrated into the residence while on the other hand they show a definite dissatisfaction with the amount of study they have been able to undertake. While it is likely that these two factors are related it does appear that there is scope for administrative involvement in this issue. One simple architectural solution to the study problem which would also help provide a social node for the residence might be to subdivide the present barnlike lounge room into an acoustically screened library-study area and a more intimate coffee room-TV area. This would provide a study
retreat for sharing individuals as well as facilitating interpersonal social contact within the residence as a whole. Converting one room in each residence block to a communal area would help produce subgroupings of residents.
CONCLUSIONS

The picture of the social structure of Toad Hall and Burton Hall which emerged in the exploratory study has largely been substantiated in the follow up study. The main differences between the first and second studies have been quantitative rather than qualitative: the differences between the two residences are not as marked as originally suggested.

The original study isolated architectural design and group size as significant variables affecting the activities of residents. The follow-up study also implicates personal factors in the model relating satisfaction to the psychosocial and physical environmental milieu. These personal factors do not appear to operate independently of the milieu but interact with it.

It has been known for many years that a relationship exists between architecture and social activity. The classic studies in this genre are those of Merton (1948) and Festinger, Schacter and Back (1950) but numerous verifications of the "propinquity effect" have since appeared. These include a longitudinal study of student residence (Priest and Sawyer, 1967); a sociometric study of a psychiatric "half-way" house (Grundy and Wilson, 1973); and a study of a Sydney housing commission block using Milgram's "small world" technique (Bochner, Duncan, Kennedy and Orr, 1976). Ebbeson, Kjos and Konecni (1976) elaborate on the basic finding by demonstrating that disliked persons are also subject to the propinquity effect.
They suggest that, while liking is a function of the increased contact afforded by propinquity, disliking is more a function of contamination of the individual's environment by the disliked person. In other words the propinquity effect works in two different ways concerning liking and disliking.

The introduction of such subtleties into the propinquity-interaction relationship has been minimal despite the demonstration of subtle effects on the architectural side of the relationship by Festinger et al (1950). The present study demonstrates that propinquity has little significant influence on friendship formation in some architectural arrangements (e.g., Burton Hall) while it is quite powerful in others (e.g., Toad Hall). Blake, Rhead, Wedge and Mouton (1956) working in army barracks and Gullahorn (1952) working in offices have both demonstrated architecturally mediated propinquity based relationships. It is symptomatic of the one-dimensional conceptions favoured by most behaviour-environment researchers that these studies have had little impact on subsequent work. That is, in most research propinquity is still conceived of in isolation from the environmental setting.

Group size effects have been studied for many years by social psychologists. Unfortunately methodological differences between the studies, particularly with respect to what constitutes a "small" or "large" group make drawing absolute conclusions difficult. It is clear, however, that group size is a potent variable in its effect on a variety of group processes. Thus the excellent review article by Thomas and Fink (1963) concludes:
On the basis of this review it is apparent that group size has significant effects on aspects of individual and group performance, on the nature of interaction and distribution of participation of group members, on group organisation, on conformity and consensus, and on member satisfaction.

(p. 383)

Despite such unequivocal statements the group size variable has seldom appeared in the crowding/social ecology literature. Notable exceptions include McGrew, (1970); Loo, (1972); Valins and Baum, (1973) and Baum, Harpin and Valins, (1975). The "ecological psychology" approach pioneered by Barker (e.g., Barker, 1968) has spawned a number of studies which use the "behaviour setting" concept to study group size. These include studies of school size (Barker and Gump, 1964); church congregation size (Wicker, 1969) and national parks visitors (Wicker and Kirmeyer, 1976). Like most other applications of ecological psychology these studies have had little impact on crowding research as a whole.

The overall situation may thus be summarised by stating that the influence of group size has long been known to have effects on group functioning generally and on various aspects of crowding. The present data obtained from the comparison of the two suite sizes within Toad Hall adds further to this literature and emphasise that an important variable influencing the perception of crowding is the environment-group size interaction.

Individual differences have, of course, been studied extensively for many years in various branches of psychology.
However, in the social ecology/crowding sphere their study has been confined mainly to the personal space area (e.g., Pederson, 1973; Cozby, 1973). One interesting development in general psychology seems certain to have implications for the social ecology/crowding field in due course. This is the theoretical and empirical controversy presently being waged between the "situationists" (social learning theory approaches more or less derived from Mischel, 1968) and the trait theorists. Recent studies are indicating that a synthesis position based on a personality attribute/situation interaction is a more fruitful approach (e.g., Bem and Andrea, 1974; Endler and Magnusson, 1976; Wilson, 1976). Presumably the diffusion of such interactionist concepts through psychology and the other social sciences will encourage researchers to include individual difference variables in their studies of behaviour-environment interactions.

The data relating to the interaction of individual differences with environment are congruent with the empirical and theoretical perspective outlined above. The present study also offers one suggestion concerning the mode of action of the individual differences and this appears to be the first research to demonstrate this. At a very basic level it appears that the social skills of the resident are the most important determinant of successful adaptation to residence life. Different residence styles appear to favour different social strategies and hence different social skills.

It is interesting at this stage to compare the present findings with other research into student residences. The relative
accessibility of student residences has made them popular with researchers over the years. However most of this research has concentrated on particular aspects of residence life and this limits its relevance for the present study. Another limiting factor has been the predominance of the shared room system in the United States until very recently.

The design of student residences, like other design decisions, is a function of numerous variables ranging from philosophical through economic to fashion and the personal prejudices of the designer. The "shape" of most university student residences owes much to an educational philosophy modelled on the collegiate style institutionalised at Cambridge and Oxford. The residence is thus intended to be more than shelter for the student, it is intended to promote and facilitate the educational process generally. Hatch (1968) and Taylor (1965) offer useful discussions on this topic. McKean (1975) reflects what may be the emergence of a change in this philosophy by cogently arguing that students should be integrated with the rest of the community. Student residences, he argues, should be abandoned because universities should not provide for "separated, privileged and elite communities". (p. 16)

Sociocultural trends are likewise important because changing norms will bring into critical focus different aspects of residence life. Some of these are vividly highlighted by comparing the structure and management of modern residences with the following advice offered only about twenty five years ago by Turner, (1953):

"The table used by the warden and resident teaching staff ... Should also be a 'high table', raised by one
low step onto a platform, even if only to facilitate seeing the hall as a whole and addressing the members''
(p. 109)

And with respect to the management of residences:

"There is a periodic demand that students should be allowed to control their own halls, through their own elected machinery ... This demand is often voiced by student journalists, but is not so common among those students who are actually resident in the halls" (p. 126)

After discussing the management question further he eventually concludes "It is difficult to state any case in favour of student control of halls'' (p. 128).

It is easy to argue from the examination of such trends that many of the attitudes expressed by residents are very much a function of fashions (e.g., of individual autonomy) changing faster than structures. Empirical support for such an argument exists in a study by Avery, Davis and Roizen (1970). After analysis of a large scale questionnaire study of resident satisfaction they conclude:

"We hypothesise from our study that the way to design a residence hall that will satisfy many students today is to create an environment avoiding a regimented, institutional, 'dormitory' image. The architect should strive instead to give the students the feeling that they are able to be 'themselves', to be individuals, to be free from an inhibiting sense of regimentation and moulding. If the architect can achieve this intangible feeling,
then the students will not be put off even if they feel the buildings, and their own quarters, have many specific design or construction faults". (p. 29)

Such fashion or aesthetic preferences have even been demonstrated at the microcultural level. For example, Warr (1964) notes that within a particular residence, rooms arranged in "blocks" were thought to be higher status than those arranged along corridors.

The foregoing comments concerning resident satisfaction are congruent with most of the findings of the present research. The lack of satisfaction evident in Burton Hall is thus probably partly a function of its representing dated educational philosophies; partly a function of not being conducive to modern self management trends; and partly a function of being less fashionable than Toad Hall and other such establishments. As general satisfaction with one's residential environment will probably have social repercussions it hardly needs stating that this variable should be carefully considered in future research.

A number of recent studies are explicitly concerned with corridor versus suite arrangements. Most of these studies suggest that suites produce more resident satisfaction (e.g., Valins and Baum, 1973; Baum, Harpin and Valins, 1975) particularly when suite residents are permitted to choose their coresidents (Corbett, 1973). The Baum et al (1975) study notes that corridors do not facilitate the formation of proximity based groups, a suggestion that is, of course, applicable to the Burton Hall environment. In one of the more elaborate studies of this type Gerst and Sweetwood (1975)
applied the "University Residence Environment Scale" (Moos and Gerst, 1974) and a number of other measures to dorms and suites. Although a number of significant differences were detected it is interesting that the URES, a 100 item "social climate" scale, indicated only small differences between dorms (corridor style) and suites. It may be that the dorms provided compensatory avenues for friendship formation and maintenance in the manner of the dining room at Burton Hall.

The group size variable has generated much discussion over the years. Prescriptions concerning the overall size of the residence range from around one hundred (e.g., Turner, 1953) to high rise structures housing over one thousand (see Riker and Lopez, 1961 for favourable arguments regarding high rise dorms). If for no other reason than flexibility it would seem that monoliths are no longer appropriate.

Examination of the literature provides many examples of attempts to specify optimum sub-unit group sizes. The basis of such specifications may be essentially economic, for example:

"Any decision about the size of groups should be based on the sort of compromise that best reconciles the university's or college's concept of the benefits of communal living with the most efficient and economic distribution of facilities within the educational and social brief. For example if a scale of one shower for every twelve
and one W.C. for every six students is considered adequate, it will be more economic to have groups of twelve or twenty four students."

(University Grants Committee, 1967) (p. 15)

More usually no substantive supporting argument, or at best a rather weak one, is offered. Examples include:

"There are tentative indicators that groups of eight to twenty tend to develop into better working communities" (Riker and Lopez, 1961 p. 15)

"At Knox College, for example, satisfactory groupings of eight men each were created by 'vertical plan' residence halls built in multiples of four double bedrooms, each focused on a living room. It is interesting to note too that when a similar residence hall consisting of twelve man units was built, the larger groups tended to subdivide into groups of six and six or eight and four". (Riker and Lopez, 1961. p 42)

"With the exception of freshmen, most students would like to live in groups not larger than eight to twelve individuals. This figure corresponds with the number of
friends of the average student."

(Preiser, 1970. p 249)

"For many students the ideal situation
would be a small kitchen for every six
to eight people".

(Educational Facilities Laboratories, 1972. p. 16)

Mullens and Allen (1971) review a number of papers relating
to optimum group size which suggest groups ranging from two - six
through to thirteen. After weighing the various pros and cons,
however, they conclude:

"There seems a general case for a primary
unit of about fifteen single study bedrooms ...
physical groups smaller than fifteen may not
give, particularly at weekends, sufficient
numbers, scope or experience". (p. 28)

Brawne's (1963) paper is one of the more carefully argued with
respect to group size. Drawing on a number of earlier studies he
comes out very strongly in favour of twelve person suites which
are not fully self contained. That is that some activities are
designed to occur in open spaces shared by a number of suites. This
suggestion seems a very important one and has implications for the
residences investigated in the present study. Thus the McRae
residence does include an amenities block for all of the three
suites and this must presumably increase the frequency of inter-
suite contact and thus permit some dispersion of social interaction
within the residence as a whole. However it also seems logical to argue that the relatively large size (14 persons) of the McRae suites combined with such social dissipation may produce a lack of commitment to individual suites. The informal organisation which appears necessary for the satisfactory functioning of such groups might thus be reduced.

The Toad Hall suite complexes lack an effective extra-suite social node and this places more significance on any individual's relationship with his or her suite. If, for any reason, residents are not happy with some aspect of their suite it is difficult for them to establish a relationship with other individuals in the residence as an alternative. In other words, in Toad Hall the individual's suite is almost his or her entire residence universe. In groups of ten and particularly five this could easily prove devastating if a severe clash within the group eventuated.

In very general terms it seems that a reciprocal relationship may thus exist between suite size and degree of environmentally induced suite introversion. The smaller the suite, particularly when self selection does not operate, the more important is an escape environment. As suites become larger the provision of such escapes becomes less important and at very high suite sizes may even become counter productive.

Curiously very few of the studies reviewed mention the significance of food in the life of the resident. A number (e.g., Educational Facilities Laboratories, 1972) note that modern
students want flexibility with respect to when and where they eat and a number of others describe the dubious pleasures of institutional food (e.g., Van der Ryn and Silverstein, 1967) but none seem to explore the topic in any depth. The present study suggests that diet may be very important in determining the satisfaction of residents. Eating associated activities are also of obvious importance. For example, in Burton Hall where the friendship groups are usually eight to twelve people, it could have very serious consequences if the present large tables were replaced by tables seating only four. Likewise in self contained suites both the cooking skills (or lack of them) and washing up problems may be very important in determining an individual's satisfaction.

The practice by virtually all students surveyed of doing the bulk of their study in their rooms has also been documented elsewhere (see Heilweil, 1973 for a review of this literature). There is also some evidence that academic success varies across residences (e.g., Brothers and Hatch, 1971). With this in mind it seems remarkable that more effort is not made to facilitate such study, particularly by the provision of adequate auditory screening. The problems are compounded in shared rooms as indicated in both the Clarke House data and a study reported by Sommer (1969b).

Finally, the indication of a quite low degree of "romantic" contact within suites which emerged in the present study has also been previously documented. Thus the 1972 report prepared by the Educational Facilities Laboratories quotes a student counsellor as saying:
"As community spirit grows students don’t have to pair off as lovers to get to know one another. They form sister-brother relationships and take on large groups of friends."

(Educational Facilities Laboratories, 1972. p 14)

Lance (1976) conducted an empirical study of "sexual permissiveness" attitudes (rather than behaviour) in single sex and coeducational dormitories and detected an increase in such attitudes during the year. The difference, while significant, was small and its behavioural consequences are unclear. It would be naive and inaccurate to suggest that coeducational residences are largely asexual. It does appear, however, that romantic relationships do not occur as frequently within coeducational suites as one might expect.

Overall it appears that in those areas where there is overlap there is substantial agreement between this research and the published literature. The principle difference between the present study and virtually all the available student residence literature is one of scope. Adopting the social ecology model and thus being sensitized to the potential influence of the total milieu provides the present research descriptions with a certain completeness not present in studies working from a more restricting model. The benefits of such a complete perspective are primarily in providing a system matrix in which the action of individual variables can be bedded and their effect studied. But the cost of such a conceptual stance has been considerable, particularly with respect to methodological rigor and statistical treatment.
Apart from the well known problems of investigating any naturally occurring group the present study was beset by a number of special problems. The first and most significant of these was the lack of a priori grounds for determining the relevant data to be collected. Even after completion of the Exploratory Study the basis for the erection of a conceptual model was scant indeed. Excellent environment behaviour models do exist but they are either too general (e.g., Esser's ethological model) or too specific (e.g., Altman and Lett 1970). This has resulted in some key areas being ignored (the most important known one of these being the Moos and Gerst notion of social climate as determined by the URES) and others being treated too superficially. In this latter category would be included economic factors and considerations of fashion and status as applied to residences and parts of residences. For example it seems that in Toad Hall the five person suites were acquiring higher status and that one of the McRae House suites had traditionally higher status than the others.

The statistical examination of the conceptual model suggests that it shows promise of providing a more useful model in due course. Fleshing it out on the basis of the data now at hand should elevate it past its present crude level to something approaching true recognition of the complexity of natural systems.

In retrospect one of the most important criticisms which might be levelled at the present research is that much of it suffers from "premature quantification". The subtle nuances of the person's interaction with his or her environment are exceedingly difficult to quantify or even categorise. Although the present research may
achieve a degree of empirical respectibility by including numerous tables and statistical analyses the feeling remains that an approach based more heavily on unstructured, impressionistic data would provide a more honest and vivid description of life in the student residence environment. Certainly a very important general point to emerge from this research is that descriptive (in contradistinction to empirical) data in the investigation of natural environments is much undervalued in modern person-environment studies. Hopefully the future will see these two forms of data collection integrated as researchers recognise the complexities and subtleties of real world environments.

Although the present research has certain obvious methodological inadequacies it does appear to have a degree of significance for research into crowding and privacy. At the most general level it graphically reinforces the notion that in order to understand crowding, privacy (or any other phenomenon) it must be placed in a natural setting. Every natural setting will provide a unique milieu for the operation of such variables and it is essential that the system constituting that milieu be thoroughly investigated before commencing research into a specific variable.

With respect to crowding and privacy in particular the present studies suggest that current conceptions of the mode of operation of such variables are excessively simplistic. The constellation of variables in which privacy and crowding are embedded in the real world mean that the "causes" and "effects" of their manipulation will have numerous and probably subtle consequences. The
phenomenological models currently fashionable in the crowding literature are able to accommodate such subtleties: it remains for researchers to map them and document their multifarious effects.


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<th>Author</th>
<th>Reference</th>
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<tr>
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APPENDIX 1

TOAD HALL STUDY

Name: 
Block: 
Time: 
Room No: 
Date: 
Floor: 

A. Biographical:

1. Family structure:

2. Ethnic background:

3. Would you describe one (or both) of your parents as authoritarian?

4. Bedroom: Shared?

   If so, how long and with whom?

   Reactions to this?

5. Did you have a 'special place' (cubby house etc) where you could be alone and unobserved?

6. How long have you been at ANU?

   Where were you before coming to Toad?

   How many people in your suite did you know previously?

   Very well _______ Slightly________ Not at all _______

7. Anything about your family life or recent living experience you think might be of relevance (e.g., tired of institutional living; prejudicial upbringing; seclusive or withdrawn family, etc.)

8. Why did you come to Toad?

9. Do you intend to stay?

   Why?

B. Microculture:

1. Door Behaviours:
a) Do you normally knock before entering another's room (this suite)?
b) Do you normally knock before entering the bathroom?
c) Do others normally knock before entering your room?
d) Do others normally knock before entering the bathroom?
e) Do you normally shut the door of your room when in it?
f) Do you normally shut the door of the bathroom when in it?
g) Do you normally shut the door of the toilet when in it?
h) Do others normally shut the door to their room when in it?
i) Do others normally shut the door of the bathroom when in it?
j) Do others normally shut the door to the toilet when in it?

2. Dress conventions:

a) In making the trip from bedroom to bathroom how are you normally dressed?
b) Others?
c) How dressed do you prefer to be before saying "come in"
   naked _______ under pants/bra & pants ________
   towel around you ________  more ________

3. Affectional Displays:

a) In communal areas of the suite do you hold hands, hug, kiss or whatever when others are also present?
b) Do none / some / most of the others do the same?
   If not, elaborate?

4. Are there any unofficial 'rules' that have developed?
C. SOCIAL INTERACTIONS:

1. Quantitative Features:
   a) How much time do you spend in Toad during the day?
      _____ evenings? _____ weekends? _____ holidays?
      - what meals do you have here?
      Breakfast _____? Lunch _____? Dinner _____?
   b) How much of this time is spent in communal areas?
   c) Do you purposely organize your day to coincide with, or
to avoid others? (e.g., avoid cooking at certain times/
   avoid Toad itself at certain times, etc.)
   Specify:
   e) Where do your five best friends live? 1) _____
      2) _____
      3) _____
      4) _____
      5) _____
      Do they visit you here often? (frequency/week)?
   f) Where does your boyfriend/girlfriend live?
   g) Does he or she visit you here often?
   h) Do others' girlfriends/boyfriends visit them here often?
   i) Do others' friends (generally) visit them here often?
   j) On an average weeknight how many people would be in the
      lounge?
   k) On an average weekend/holiday night how many people
      would be in the lounge?
   l) Would you prefer a 5 person _____ or 10 person
      suite _____ or 12 person _____?
   m) Are your attitudes/interests similar to most of the
Social interactions Cont'd

2. Qualitative Features:

   a) How many people in this suite would you class as
      good friends _________
      just friends _________
      acquaintances _________

   b) Would you please name the three people you like best
      __________________   __________________   __________________

   c) How often do you participate in social activities with
      two or more of the other people in this suite
      (frequency/month) _______. What sorts of things do you do?

   d) Do you know the home town of none/some/most of the
      others in this suite?

   e) Do you know the subjects being done by none/some/most
      of the others in this suite?

   f) Do you know the names of the boy/girl friends of none/
      some/most of the others in this suite?

   g) How would you describe the 'social climate' in this
      suite (e.g., lonely, happy, friendly, tense, etc.)?

   h) Is it what you expected before coming here?

   i) Did the cruise ship phenomenon occur in the first few
      weeks?

   j) Did you think the acquaintanceship process developed
      too slowly/too quickly/about right?

   k) Are the chores, food etc. shared in this suite?
1) Would you be interested in forming an 'encounter group' with the other people in this suite?

m) Do you have any comments on changes in the social climate over the year?

D. ENVIRONMENTAL FEATURES:

a) Do you have any comments on the architectural design of:
   i) your room (e.g., auditory privacy between rooms)  
   ii) Your suite (e.g., kitchen location, size)  
   iii) Toad generally (e.g., through traffic)  

b) How much of the decoration in the lounge did you contribute?

c) What are your feelings about the decorations?

d) Do you find other people frequently using your property?  
   How do you feel about this?

e) Other observations?

f) Is there anything else at all about life in Toad which you would like to discuss?

(Please do not discuss the content of this interview with other people in this suite before I have interviewed them. Thank you.)

Personalization Score (0-5) ......  
(Density of posters, photographs and other personal items displayed in room).
BURTON HALL QUESTIONNAIRE

Code
Name
Block

Time
Room No.

Date
Floor

A. BIOGRAPHICAL:

1) Family structure
2) Ethnic background
3) Urban/rural
4) Bedroom: Shared?
   If so, how long and with whom?
   Reactions to this?
5) Did you have a 'special place' (cubby house etc.) where you could be alone and unobserved?
6) How long have you been at ANU?
7) How long have you been at this Hall?
8) Have you ever changed rooms?
   Specify
   Why
9) Is there anything about your family life or recent living experience that might be a strong influence on the way you react to living here?
10) Why did you come to this Hall?
11) Do you intend to stay?
   Why?
B. MICROCULTURE:

Door behaviours:
1) Do you normally knock before entering another's room?
2) Do others normally knock before entering your room?
3) Do you normally shut the door of your room when in it?
4) Do others normally shut the door of their rooms when inside?

Bathroom Behaviours:
5) What bathroom do you normally use?
6) Do you have any feelings about the co-ed bathroom?
7) In making the trip from bedroom to bathroom how are you normally dressed?
8) How are others normally dressed in making the trip from the bathroom to bedroom?
9) In common rooms do you hold hands, hug, kiss etc. with your boyfriend/girlfriend when others are present?
10) Do none/some/all others do the same?
11) Are there any rules governing your behaviour on this floor?
   Who polices these rules?

C. SOCIAL INTERACTION:

1) How much time do you spend in the Hall during the day?
2) _________ evenings?
   _________ weekends?
   _________ holidays?
2) How much time do you spend in communal areas?
3) Where do your three best friends live? ________

4) How often would they visit you here?

5) Where do you usually entertain them?

6) Where does your boyfriend/girlfriend live?

7) Do people visit you here often?

8) Do other people on this floor have their girl/boyfriends visiting them often?

9) How about their 'ordinary' friends?

10) Are your attitudes / interests / lifestyle different from most of the others on this floor?

11) Do you think people on this floor are friendly / indifferent / hostile?

Would you like to get to know them better?

12) Do you have a regular group that you eat with?

About how many are in it?

Could you tell me their Block and Room numbers?

13) Can you remember where you met them?

14) How many people on this floor do you know? Can you give their names and room numbers?

15) Approximately how many of these would you know their hometown?

main subjects?

boy/girlfriend's name?

16) How many of them would you class as good friends ______?

friends ______?

acquaintances ______?
D. ENVIRONMENTAL FEATURES

1) Do you have any comments on the architectural design of your room? 
   this floor? 
   the Hall generally?

2) Is there anything else that might help me understand the social life here?
### CANBERRA COLLEGE OF ADVANCED EDUCATION STUDY

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<th>1) Family structure?</th>
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<td>2) Ethnic background?</td>
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<td>reactions to this?</td>
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<td>5) Did you have a 'special place' where you could be alone and unobserved?</td>
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<td>6) How long have you been at CCAE?</td>
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<td>7) How long have you been at the residences?</td>
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<td>8) Have you changed rooms and/or floors since you have lived here? Why?</td>
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<td>9) Is there anything about your family life or more recent living experience that might be a strong influence on the way you react to living here?</td>
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<td>10) Why did you choose to stay at the residences?</td>
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<td>11) Do you intend to stay? Why?</td>
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<td>12) Do you normally knock before entering another's room?</td>
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<td>15) Do others shut the door of their rooms when inside?</td>
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<td>16) Do you ever use the other sex's shower?</td>
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<td>17) Do others ever use the other sex's shower?</td>
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18) Do you ever use the other sex's toilet?  
19) Do others ever use the other sex's toilet?  
20) In making the trip to the shower how are you normally dressed?  
21) How are others normally dressed when making the trip to the shower?  
22) In common areas do you hold hands, hug, kiss with your boy/girlfriend when others are present?  
   Do none/some/all of the others do the same?  
23) Are there any unofficial rules or conventions that have developed?  
24) How much time do you spend in the residences during the day?  
   Evening? Weekends? Holidays?  
25) What meals do you have here?  
26) How much time do you spend in the kitchen?  
27) Where do your three best friends live?  
28) What do they feel about visiting here?  
29) On an average weeknight how many people would be in the kitchen?  
30) On an average weekend how many people would be in the kitchen?  
31) Would you prefer a six or 12/13 person block? Why?  
32) Are your attitudes / interests / lifestyle similar to most of the others in this block?  
33) How many people in this block did you know before shifting in?  
   Very well?  
   Slightly?  
   Not at all?
34) How many people in this block would be good friends ______

just friends ______

acquaintances ______

35) Who are the three people you like best? ___________

___________

___________

36) How often would you participate in social activities with

two or more of the others?

37) In how many of the people here would you know their

home town? _____ Main subjects? _____ boy/girlfriend's

name? _____

38) How would you describe the social climate in this block?

39) Is it what you expected?

40) Did the acquaintanceship process proceed too quickly?

too slowly?

about right?

41) Are the people in this block friendly / indifferent /

hostile?

42) Would you like to get to know them better?

43) Do you cook in a group?

44) Does your unit share?

45) Do you have any comments on the architectural design of

your room?

46) Do you have any comments on the architectural design of

your block and the residences generally?

47) Is there anything material you have contributed to the

group?

48) Is there anything else about life here which you would

like to discuss?
APPENDIX 4

SELF DISCLOSURE SCALE

The 10 item scale used in this research is a short form of Journard's 40 item Self Disclosure Scale (Journard, 1961) (see over). The short form was obtained by administering the full 40 item scale to a group of first year psychology students (N=40) with the instruction that they were to categorise each item as either 'Not very Personal', 'Average' or 'Very Personal'.

The resulting data was examined for sex differences but these were negligible.

Items which were clearly (i.e. 75% or more) one category or another were as follows:

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The following items were chosen from the above list on the basis of minimising ambiguity and topic variety.

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The object of using the Self Disclosure Scale is to determine the degree of self disclosure within the group. This requirement thus differs from the intention of the Journard scale which is not situation specific. The instructions for the test were thus modified to require subjects to nominate the number of people in their group with whom they would be comfortable discussing each of the questions. This technique requires scores to be standardised for group size in order to make cross comparisons. This standardisation was achieved by dividing individual scores by the group size.

The Ten Item Self Disclosure Scale

Set out below are ten discussion topics (posed as questions). Would you please indicate, for each topic, the number of people in this suite you would be comfortable discussing each with.

1. What are your favourite comic strips?
2. How do you feel about engaging in sexual activities prior to, or outside marriage?
3. What is the nature of your sex problems?
4. What are your favourite colours?
5. What are the details of your sex life up to present?
6. What thoughts have you had that repulse you?
7. How do you feel if someone sees you naked?
8. How do you feel about having members of the same sex touch you?
9. What are your favourite sports?
10. On what parts of your body have you been kissed?
The Forty Item Self Disclosure Scale

QUESTIONNAIRE

1. What are your favourite comic strips?
2. What do you dislike most about having a complete physical examination?
3. How do you feel about engaging in sexual activities prior to, or outside of marriage?
4. With whom have you discussed your sexual experience?
5. What are your favourite spare-time hobbies or interests?
6. What do you feel guiltiest about, or more ashamed of in your past?
7. How many brothers and sisters do you have?
8. What movies have you seen lately?
9. What are your favourite subjects at university?
10. What is the nature of your sex problems?
11. What are your favourite colours?
12. What are the details of your sex life up to the present?
13. How can you tell when you are getting sexually aroused?
14. On what parts of your body have you been kissed?
15. What age do you think a prime minister of Australia should be?
16. What type of foods do you enjoy the most?
17. What thoughts have you had that repulse you?
18. What techniques of sex play do you know of?
19. What type of reading material do you enjoy the most?
20. What are your feelings about masturbation?
21. What foods do you feel are best for your health?
22. In what ways do you think that various members of your family may be "maladjusted"?
23. Where would you like to go on a trip?
24. What kind of music do you like most?
25. How many colds do you usually have per year?
26. What are your favourite sports?
27. How do you feel about your love life?
28. Would you like to travel and see what part of the country?
29. What kinds of group activities do you usually enjoy?
30. Do you like the male partner to be taller than the female?
31. How frequently do you engage in sexual activities?
32. What schools have you attended?
33. What are the persons like, with whom you have had some type of sexual experience?
34. How important do you think education is to a person?
35. How do you feel if someone sees you naked?
36. How do you feel about having members of the opposite sex touch you?
37. How do you feel about having members of the same sex touch you?
38. What movie or TV entertainers do you like the most?
39. Which (if either or both) of your parents do you think might have had pre-marital sexual relations?
40. What do you think makes a book a best-seller?
APPENDIX 5

PREFERENCE INVENTORY

This questionnaire is part of a study concerned with beliefs and attitudes about interacting with other people. In some questions you may be asked about living situations that you have not experienced. Please answer on the basis of how you think you would react to the situations or choices described. Use the following five categories to describe how you feel about the statements:

1 - strongly disagree
2 - disagree
3 - neutral or don't know
4 - agree
5 - strongly agree

Please write the appropriate category number next to each question. Be sure to answer every question, even if you must guess.

1. I would like to have a private retreat which no one would enter without asking me.
2. I dislike being completely alone, either in a house or in the wilderness.
3. I wouldn't mind living in a large city -- at least everyone wouldn't know everything about you.
4. It is important to me to be able to be alone when I want to be.
5. I would like to have acquaintances at work, at home, in clubs, and so forth that don't know each other because each group would only know a part of me.
6. There should be an area in the house where the husband and wife can get away from the rest of the family.

7. I dislike talking about personal matters to a friend in a crowded place where other people can overhear us.

8. Acquaintances often ask questions that I consider rude and personal.

9. I sometimes want to get away from everyone for awhile, even my close friends.

10. I would not like to live in a small town because there is too much gossip about your private life.

11. Even members of a family need to get away from each other now and then.

12. I usually prefer to spend a free afternoon with one friend rather than with several.

13. It would annoy me if a friend or family member borrowed something of mine without asking me first, even if I would lend it freely if asked.

14. I would like to live in a large city because neighbours and acquaintances there would probably be less concerned about my private life.

15. I usually don't tell people I don't know very well personal things about myself.

16. I occasionally enjoy getting away from the rest of the world with an intimate friend.

17. There are times when I like to get away from people who know me by getting lost in a crowd.

18. It is important for a family to have time together away from friends or relatives.
19. It is important to be able to confide in someone and know that your confidence will be kept secret.

20. I am usually upset if other members of the family come into my bedroom when the door is closed without asking.

21. There are times when I really want other people to leave me alone and not intrude on my thoughts, even though we're in the same room.

22. "A house should be so far away from a neighbour that only by yelling at the top of one's lungs can one be heard".

23. I want my friends to feel that they can drop in at my house any time they like.

24. It is very relaxing to get away from other people with just your family or close friends.

25. I would rather not have my close friends living next door to me.

26. It wouldn't bother me to be able to overhear the noises of everyday living from neighbouring houses (footsteps, water running, etc.).

27. Although I enjoy walking in the woods, I would rather not go alone.

28. I like to have someone to whom I can tell everything about myself, even my deepest and most personal thoughts and feelings.

29. It is important to me to live where I can do what I want to without bothering other people.

30. If my living room window were within 20 feet of someone else's, I would probably keep the curtains closed most of the time.

31. Although I occasionally enjoy talking to my neighbours, I don't like to get very involved with them.
32. I don't like to talk about personal things with friends until I have known them for a long time.

33. It usually annoys me to have people come to my home without letting me know they are coming.

34. I would like to live in a neighbourhood where people do things together now and then.

35. I often like to go to a secluded place to talk to an intimate friend.

36. I often get lost in my thoughts and am not really aware of what is going on around me.

37. If I were at home and didn't feel like being disturbed, I probably wouldn't answer the phone.

38. People should respect other's rights to be individual and different.

39. I would prefer a neighbourhood where neighbours had a tendency to drop in all the time to one in which it was difficult to get to know them.

40. It is important for a child to have a room of his own after he reaches a certain age.

41. I really enjoy being able to loan things to friends.

42. I would dislike having a patio or balcony that neighbours or passersby could see into.

43. Even intimate friends should respect your desire to keep certain things to yourself.

44. "Fences make good neighbours."

45. There are often times when I would enjoy spending an afternoon or evening at home alone.

46. I enjoy having friends living nearby who feel free to come into my home when they please.
47. If I were not living with my family, I would rather share a two-bedroom apartment with three friends than live alone.

48. I would be very upset if a friend read something I had written or my personal correspondence without my permission.

49. The constant noise of modern life is really rather exciting.

50. I would like to live in a secluded house out of sight of any other houses.

51. It is important to me to have a house away from the noise of traffic.

52. The idea of a house with windows that look toward the sky rather than toward other houses appeals to me.

53. I would dislike living in an urban area where I never got to know my neighbours.

54. When I really need to find a solution for a problem, I do it best by talking with others rather than working alone.

55. Close friendships require having time to be alone together.

56. When I have a very important decision to make I prefer to make it alone.
SCORING THE PPS

Subscale names and item numbers:

Intimacy: 12, 16, 19, 24, 35, 38, 47, 55.

Not Neighbouring: 23(-), 25, 31, 33, 34(-), 39(-), 41(-), 46(-), 53(-).

Seclusion: 1, 22, 26(-), 27(-), 29, 49(-), 50, 51, 52.

Solitude: 1, 2(-), 4, 9, 11, 21, 45.

Anonymity: 3, 5, 10, 14, 31, 34(-).

Reserve: 7, 8, 15, 32, 42, 44, 48.

Scoring

Assign values to the answers as follows:

- Strongly disagree = 1
- Disagree = 2
- Neutral, don't know = 3
- Agree = 4
- Strongly agree = 5

If a (-) appears after the item number, reverse the scoring, so that strongly disagree = 5 and strongly agree = 1.

Sum values for all items for PPS Total score; sum values for items on each subscale for Subscale scores.
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APPENDIX 7

(Analysis of Correlation Matrix for Toad Hall)

Introduction

Most of the data collected is amenable to dichotomization and thus permits the application of the statistical technique of tetrachoric correlation. The dichotomization of the data was achieved in 3 ways

i) Natural dichotomization (e.g., male/female)

ii) Imposed dichotomization according to some ad hoc rationale. (e.g., dividing families into smaller or larger - the latter consisting of 4 or more children)

iii) Other continuous variables which it did not seem plausible to dichotomize according to some rationale were split at the mode.

Although the entire matrix is included the analysis is based mainly on those variables showing somewhere in the vicinity of a 0.5 or better correlation except where an examination of other variables is appropriate.

Analysis

The detailed analysis follows. Probably the major "finding" of the analysis is the suggestion that there may be various models of adaptation to the residential environment. Broadly these are:

i) Experiential or constitutional adaptation (e.g. coming from a large family)

ii) Psychosocial need adaptation (e.g., being lonely)

iii) Group attractiveness (e.g., being in a successful group)

Other suggestive results of significance for further study include
the inadequacy of the Friendship Quotient (which seeks to measure desired friendship rather than achieved friendship); the possibility that males and females adopt rather different coping techniques; and the apparent uselessness of some of the variables, e.g., wearing a towel versus wearing a bathrobe to the bathroom).

1. URBAN-RURAL DIMENSION

Urban background associated with:

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| 2            | Family size  
|              | -0.537      |
| 3            | Bedroom sharing  
|              | -0.391      |
| 4            | Sample females  
|              | +0.459      |
| 5            | Residential intentions  
|              | -0.431      |
| 7            | Bathroom dress  
|              | -0.582      |
| 9            | Time in Common Room  
|              | -0.649      |
| 18           | Preferred intimacy  
|              | +0.662      |
| 21           | Self disclosure  
|              | -0.719      |
| 25           | Solitude  
|              | +0.515      |
| 27           | Reserve  
|              | -0.598      |

Those with urban backgrounds are perhaps more lonely (e.g., variables 18, 21, 25) but spend less time socializing in the common room. Could this be because they are more likely to be female? (See comparison 4 which suggests females have a lower need for privacy viz door shutting -0.43, reserve -0.52, total PPS -0.51 i.e., the females do seem to need less respite from interaction) HOWEVER
the correlation between sex and variables 18, 21, and 25 is virtually zero so it seems there may be two kinds of loneliness dimensions - one producing a kind of active seeking behaviour (males) and the other a kind of passive waiting one (females).

Note that it also seems that house sizes (with respect to bedroom number) are constant across the rural-urban continuum leading to greater sharing in the larger rural families.

2. FAMILY SIZE

Larger family with:

Variable No.

3 Bedroom sharing +.826 (Bedroom sharing increased)
5 Residential intents +.675 (More likely to stay)
6 Door shutting -.565 (Don't shut doors)
7 Bathroom dress +.473 (Wear towel to bathroom)
21 Self disclosure +.455 (Disclosure more)
24 Seclusion -.524 (Less seclusive)
25 Solitude -.818 (Less solitude)
28 Total PPS -.459 (Less privacy)

Thus coming from a larger family seems to produce a less reclusive personality who is more likely to want to stay in Toad Hall - presumably because they are better adapted to that type of life.

This could be either the large family environment itself or perhaps some component of it (e.g., bedroom sharing of +.826).
3. BEDROOM SHARING

Shared a bedroom with:

Variable No.
2  Family size +.826  (larger family leads to sharing)
5  Residential intents +.588  (Bedroom sharing leads to wish to stay)
7  Bathroom dress +.468  (more likely to wear towel)
9  Social time in Common Room +.480  (more time socializing)
12  Friendship Quotient +.647  (More friends in suite)
17  Existing intimacy +.468  (Knows more about members suites)
24  Seclusion -.682  (needs less seclusion)
28  Total PPS  (needs less privacy)

Again of course a larger family leads to more bedroom sharing and also they are more likely to want to stay. However bedroom sharing alone (with respect to family size) produces more common room interaction and friendship as well as a slightly increased likelihood of wanting to stay. Perhaps one can argue that bedroom sharing produces an incremental advantage in adaptation over that of simply coming from a larger family.
4. SEX OF RESPONDENT

Female associated with:

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Urbau background +.459</th>
<th>Door shutting -.430</th>
<th>Anonymity -.468</th>
<th>Total PPS -.512</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(most females urban)</td>
<td>(females don't shut doors)</td>
<td>(females want less anonymity)</td>
<td>(females need less privacy)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sex is generally not a powerful variable.

The fact that females do not shut doors as much as males is a rather surprising finding which is supported by a high total PPS correlation and the other two privacy scales (anonymity and reserve). Note however that solitude need not be sex linked (-.046) and other scales are only very weakly so in the direction of lower levels for females (Intimacy -.131; not neighbouring -.201; Seclusion -.226) as is also self disclosure (-.131).

Thus it seems one can argue that females need less privacy for anonymity and reserve purposes (crudely less "shy") and that to a much lesser degree they seem to need less of other forms of privacy as well - except solitude which is not sex linked. (The main function of solitude presumably is to provide time for study).
5. RESIDENTIAL INTENTIONS

Stated intention to stay correlated with:

Variable No.

1 Urban background -.431  (Urban leads to wanting to leave)
2 Family size +.675  (larger family leads to wanting to go)
3 Bedroom sharing +.588  (sharing bedroom leads to wanting to go)
7 Bathroom dress +.588  (wearing a towel leads to wanting to go)
8 Affectional displays +.500  (Displaying affection ... go)
10 Suite friends -.480  (One of best friends in suite ... go)
12 Friendship Quotient +.667  (friendship generally leads to wanting to stay)
18 Preferred intimacy +.512  (prefer more intimacy ... stay)
21 Self disclosure +.477  (more self disclosure ... stay)
23 Not neighbourly -.714  (low tolerance of neighbours ... stay)
26 Anonymity -.705  (want anonymity ... go)
27 Reserve -.667  (want reserve ... go)
28 Total PPS -.567  (want privacy ... go)

Perhaps the most interesting result is the desire to leave Toad Hall if one of the 3 best friends happens to be sharing the suite - this could possibly be a function of the incest taboo syndrome but it is not possible to determine from this data because sexual relationship to the friend was not solicited. The .500 correlation with affectional displays may originate here.)

If the individuals want less privacy (i.e., desire more intimacy etc.) there is likely to be a desire to stay in Toad Hall -
the fact that there is a fairly strong correlation between preferred intimacy (+.512); and self disclosure (+.477) and intention to stay while negative correlations for not neighbouring, anonymity, reserve and total PPS of about .7 suggest the person who wants to return has not got enough social intercourse - he wants more - i.e., he is lonely! This is despite the .667 correlation between intention to stay and friendship quotient with the group. However the -.536 correlation between suite friends and time spent in the common room suggests that the friendship quotient variable is a complex one - perhaps it is more a measure of desired friendship as distinct from achieved friendship.

The negligible correlations between a desire for more intimacy and bathroom dress (-.100) and affectional displays (+.217) suggest again that there may be two groups who want to stay - the lonely and the more or less aggressively well adapted people (more often males from larger families).
6. DOOR SHUTTING ASSOCIATED WITH:

Variable No.

2 Family size -.565 (Shut doors in smaller families)

8 Affectional displays -.435 (Door shutters don't display affection in public)

11 Hall friends -.644 (Door shutters don't have hall friends)

13 Common room participation (No) -.651 (Door shutters live in low participation suites)

18 Preferred Intimacy -.655 (Door shutters don't want more intimacy)

21 Self Disclosure -.500 (Door shutters don't have high self disclosure)

26 Anonymity -.468 (Door shutters have a low need for anonymity)

27 Reserve +.500 (Door shutters have a high need for reserve)

28 Total PPS +.471 (Door shutters have a high need for privacy)

Most of the above seems to follow what might be expected from postulating that door shutting is an index of social withdrawal. The motivation for this social withdrawal seems to be a positive one (i.e., a desired withdrawal rather than a shyness type one) as the correlations with Friendship Quotient -.158 and Preferred Intimacy of -.358 indicate.

The only curious finding is the low need for anonymity. This is perhaps an indication that the door shutters are a group who don't want to interact and who do not care too much what the others think of them.
7. TOWEL WEARING

Variable No.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Urban background</td>
<td>-0.582</td>
<td>(Country background leads to wearing towels)</td>
</tr>
<tr>
<td>2 Family size</td>
<td>0.437</td>
<td>(Large family leads to wearing a towel)</td>
</tr>
<tr>
<td>3 Bedroom shared</td>
<td>0.468</td>
<td>(Shared bedroom leads to wearing a towel)</td>
</tr>
<tr>
<td>5 Residential Intend stay</td>
<td>0.540</td>
<td>(Intended stayers wear a towel)</td>
</tr>
<tr>
<td>8 Affectional display</td>
<td>0.483</td>
<td>(Displaying affection individuals wear towels)</td>
</tr>
<tr>
<td>14 Prefer Five Suite</td>
<td>0.533</td>
<td>(Prefer 5 individuals wear towels)</td>
</tr>
<tr>
<td>15 Others similar</td>
<td>-0.473</td>
<td>(Individuals who feel different wear towels)</td>
</tr>
<tr>
<td>16 Outside socializing</td>
<td>0.524</td>
<td>(Sociable group wear towels)</td>
</tr>
<tr>
<td>21 Self disclosure</td>
<td>0.584</td>
<td>(Self disclosure group wear towels)</td>
</tr>
</tbody>
</table>

Towel wearers are mostly country types or from the highly sociable groups (viz Urban/Self disclosure -0.719 and Towel/Self Disclosure 0.548). There does not seem to be much relationship between group success and proportion of country residents (e.g., Urban/Common Room participation No +0.087; Urban/Outside Socializing -0.131.)
8. AFFECTATIONAL DISPLAYS

Variable No.

5  Intend stay +.500  (Display affection intend stay.)
7  Wear Towel +.483  (Display affection wear towel)
16 Outside Socializing +.595  (Display affection - high outside socialization)
21 Self disclosure +.685  (Display affection - high self disclosure)
26 Anonymity -.577  (Display affection - low need for anonymity)
27 Reserve -.085  (Display affection - low need for reserve)

The data seem to suggest that Self Disclosure is characteristic of the highly sociable groups (Though note the low .113 correlation with Common Room number) and is thus perhaps a component of the sub population who want to stay on in Toad Hall because they have found themselves in a good group (as distinct from those who want to stay because they are lonely or because they are well adapted to group life by coming from a large family).
9. **SOCIALIZING** (Time spent by individual in the Common Room)

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Description</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Urban background</td>
<td>-.649</td>
</tr>
<tr>
<td>3</td>
<td>Bedroom sharing</td>
<td>+.480</td>
</tr>
<tr>
<td>12</td>
<td>Friendship Quotient</td>
<td>+.651</td>
</tr>
<tr>
<td>13</td>
<td>Number in Common Room</td>
<td>+.533</td>
</tr>
<tr>
<td>17</td>
<td>Existing intimacy</td>
<td>+.506</td>
</tr>
<tr>
<td>18</td>
<td>Preferred intimacy</td>
<td>+.667</td>
</tr>
<tr>
<td>19</td>
<td>Contribute decorations</td>
<td>+.480</td>
</tr>
<tr>
<td>21</td>
<td>Self Disclosure</td>
<td>+.646</td>
</tr>
<tr>
<td>28</td>
<td>Total PPS</td>
<td>-.468</td>
</tr>
</tbody>
</table>

(Country - more socializing)

(Share bedroom - socialize more)

(Higher Friendship Q. - socialize more)

(More people / more time)

(Behavioural link?)

(More existing intimacy - socialize more)

(Desire more intimacy - socialize more)

(Contribute decorations - socialize more)

(Self disclosure - socialize more)

(Low need of privacy - socialize more)

Again there seems to be two groups of socializers - those with a rural background and those who are lonely.
10. SUITE FRIENDS

Variable No.

5  Intend staying -.480  (No wish to stay if suite friends)

11  Hall friends -.575  (If have Hall friends, don't have suite friends)

18  Want more intimacy -.788  (If have suite friends don't want more intimacy)

26  Anonymity +.531  (If have suite friends don't want more anonymity)

If people have one of their three best friends (nature of friendship not specified) living in the suite with them then they do not want more involvement with their other suite co-residents and probably want to leave.

If they have a suite friend then they probably don't have a Hall friend - not surprising on the sheer basis of probability (i.e., 3 best friends in Canberra).
11 HALL FRIENDS

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Door shutting -.644 (Have Hall friends - leave door open)</td>
</tr>
<tr>
<td>10</td>
<td>Suite friends -.575 (Have Hall friends don't have suite friends)</td>
</tr>
<tr>
<td>17</td>
<td>Existing intimacy -.459 (Have Hall friends - less existing intimacy)</td>
</tr>
<tr>
<td>26</td>
<td>Anonymity -.515 (Have Hall friends - need less anonymity)</td>
</tr>
</tbody>
</table>

Variables 6 and 26 are very difficult to understand. If people have a good friend somewhere else in Toad Hall then they seem more or less oblivious to their present surroundings (note 0.027 correlation with preferred intimacy which could mean individuals don't care about the amount of intimacy they have with others because they never see them). Perhaps these people are the ones who spend most of their time in other suites - i.e., with their friends.
12. FRIENDSHIP QUOTIENT

Variable No.

3  Bedroom sharing +.647  (High Friendship Q. if shared bedroom)
5  Intend staying +.667  (High Friendship Q. if intend staying)
9  Time in Common Room +.651  (High F.Q. if spend time in common room)
13  Number in Common Room +.565  (High F.Q. - many in Common Room)
18  Preferred intimacy +.565  (High F.Q. if want more intimacy)
24  Seclusion -.500  (High F.Q. if want less seclusion)

Generally speaking this supports the notion that a high F.Q. is more of an indication of the desired pattern than an existing pattern. The correlation with intention to stay thus means that these people who have a high F.Q. figure are the lonely stayers rather than any of the other kinds.
13 NUMBER IN COMMON ROOM

Variable No.

6 Door shutting -.651 (If high frequency of C.R. use then the door is left open)
9 Time in Common Room +.533 (If high frequency C.R. use - spend time there)
12 Friendship Quotient +.565 (If high frequency of C.R. use - then high F.Q.)
15 Perceive others similar +.495 (If high frequency C.R. use - perceive others similar)
16 Outside socializing +.662 (If high frequency C.R. use then high outside socializing)
19 Contribute decorations +.603 (If high frequency C.R. use - then contribute more decorations)
25 Solitude +.738 (If high frequency C.R. use then want more solitude)

A heavy use of common room is found in the successful groups (V. 15, 16, 19) and the groups having many lonely individuals (V. 6, 12).

The high desire for solitude possibly suggests that the former group might want to keep others from their rooms.
14. **PREFER 'FIVE' SUITE**

Variable No.

7  Wear towel +.533  (Prefer 5 - wear a towel)
17  Existing intimacy +.500  (Prefer 5 - high existing intimacy)
27  Reserve -.477  (Prefer 5 - low need of reserve)

The above probably only reflects the finding that most people want to stay where they are (be it 5/10/12).

---

15. **PERCEPTION OF OTHERS**  (Others viewed as similar to self)

Variable No.

7  Wear towel -.473  (Others seem different if they wear a towel)
13  Number in Common Room +.495  (More towel wearing if high C.R. participation).
16. **AMOUNT OF OUTSIDE (ex suite) SOCIALIZING**

Variable No.

7 Wear towel +.524  
8 Show affection +.595  
13 Number in Common Room +.662  
17 Existing intimacy +.627  
23 Not neighbouring -.528

(More outside socializing if wear towel  
(More outside socialization if show affection)  
(More outside socialization if more in C.R.)  
(More outside socialization if high existing intimacy)  
(More outside socialization if neighbours are liked)

The amount of socializing outside the suite seems to be a good indicator of the degree of group social interaction level - i.e., group friendliness.
17. EXISTING INTIMACY

Variable No.

3  Bedroom sharing +.468  (Higher existing intimacy if a shared bedroom)

9  Time spent in Common Room +.506  (Higher existing intimacy if time spent in C.R.)

11 Hall friends -.459  (Lower existing intimacy if Hall friends)

14 Prefer 5 +.500  (Higher existing intimacy if 5 preferred)

16 Outside Socialization +.627  (Higher existing intimacy if a lot of outside socializing)

20 Decorating the room -.515  (Lower existing intimacy if a highly decorated room)

27 Reserve -.545  (Lower existing intimacy if need of reserve)

Intimacy existing thus is a function of social interaction of the group (note +.330 only with F.Q.) and is less prevalent where the best friend is outside the suite.
### 18. PREFERRED INTIMACY

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Variable Description</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Urban</td>
<td>+.662</td>
</tr>
<tr>
<td>5</td>
<td>Residential intention</td>
<td>+.512</td>
</tr>
<tr>
<td>6</td>
<td>Shut doors</td>
<td>-.655</td>
</tr>
<tr>
<td>9</td>
<td>Time in C.R.</td>
<td>+.667</td>
</tr>
<tr>
<td>10</td>
<td>Suite friends</td>
<td>-.788</td>
</tr>
<tr>
<td>12</td>
<td>Friendship Quotient</td>
<td>+.565</td>
</tr>
</tbody>
</table>

- **(Want more intimacy if urban)**
- **(Want more intimacy if intend to stay)**
- **(If want more intimacy leave door open)**
- **(If want more intimacy - spend more time in C.R.)**
- **(Want more intimacy - low probability best friend is in suite)**
- **(Want more intimacy - higher F.Q.)**

If the students want more intimacy then they are lonely for other's company - again the relatively high F.Q. seems to indicate that it is a measure of desired friendship.

### 19. INDIVIDUAL'S CONTRIBUTION TO SUITE DECORATIONS

<table>
<thead>
<tr>
<th>Variable No.</th>
<th>Variable Description</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Time in C.R.</td>
<td>+.480</td>
</tr>
<tr>
<td>13</td>
<td>Number in C.R.</td>
<td>+.603</td>
</tr>
<tr>
<td>20</td>
<td>Room decorations</td>
<td>+.601</td>
</tr>
</tbody>
</table>

- **(Contribute to decorations - spend more time in C.R.)**
- **(Contribute to decorations - more people use C.R.)**
- **(Contribute to decorations - decorate own room also)**

All fairly expected.
20. AMOUNT OF DECORATION IN INDIVIDUAL'S ROOM

Variable No.

17 Existing intimacy -.515 (More individual decorations then less existing intimacy)

19 Contributes to decorations in Common Room +.601 (More individual decorations then contributes to C.R. decorations)

Variable 19 is predictable. Variable 17 is paradoxical.

21. SELF DISCLOSURE

Variable no.

1 Urban background -.719 (High self disclosure - rural background)

2 Family size +.455 (High self disclosure - larger family)

5 Residential intentions +.477 (Higher self disclosure then intend to stay)

6 Door shutting -.300 (High self disclosure - keep door open)

7 Wear towel +.548 (High self disclosure then wear a towel)

8 Display affection +.685 (High self disclosure then display affection)

9 Time in C.R. +.646 (High self disclosure - more time in common room)

28 Total PPS -.524 (High self disclosure - need less privacy)

All the above follow in fairly logical manner. The high S.D. group seems to be the well adapted group. Thus the low correlation with the lonely group, .168 with preferred more intimacy; .052 with friendship quotient.
28. TOTAL P P S

Variable No.  

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Correlation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Larger family</td>
<td>-.459</td>
<td>(Require less privacy if from a larger family)</td>
</tr>
<tr>
<td>3</td>
<td>Bedroom sharing</td>
<td>-.551</td>
<td>(Require less privacy if a shared bedroom)</td>
</tr>
<tr>
<td>4</td>
<td>Sample females</td>
<td>-.512</td>
<td>(Require less privacy if female)</td>
</tr>
<tr>
<td>5</td>
<td>Intend to stay</td>
<td>-.565</td>
<td>(Require less privacy if intend to stay)</td>
</tr>
<tr>
<td>6</td>
<td>Shut door</td>
<td>+.471</td>
<td>(Require more privacy if shut door)</td>
</tr>
<tr>
<td>9</td>
<td>Time in C.R.</td>
<td>-.468</td>
<td>(Require less privacy if time spent in C.R.)</td>
</tr>
<tr>
<td>21</td>
<td>Self disclosure</td>
<td>-.524</td>
<td>(Require less privacy if higher S.D.)</td>
</tr>
<tr>
<td>22</td>
<td>Intimacy</td>
<td>+.780</td>
<td>(Require more privacy if want more Int)</td>
</tr>
<tr>
<td>24</td>
<td>Seclusion</td>
<td>+.925</td>
<td>(Require more privacy if want more seclusion)</td>
</tr>
<tr>
<td>25</td>
<td>Solitude</td>
<td>+.788</td>
<td>(Require more privacy if want more solitude)</td>
</tr>
</tbody>
</table>
APPENDIX B

Student Residence Analysis

Dear Toad Resident,

I am doing some research into the advantages and disadvantages of various types of student residences and would appreciate your completing the following questionnaire.

As well as helping me complete my degree this information should be useful in helping architects and administrators establish more successful residential environments in the future.

The Psychology Department has allotted me funds to pay $2 per completed questionnaire and this can be collected by handing the questionnaire in to me outside the TOAD OFFICE at any of the following times:

Friday 17 Sept (i.e., tomorrow) 8:30 - 9:30 a.m.
12:30 - 2:00 p.m.
5:00 - 6:00 p.m.

Hoping you will find time to co-operate,

Mike Bossley
C/- Psych Department

ALL INFORMATION IS ABSOLUTELY CONFIDENTIAL

1. Room number ______ Name ______
2. Sex Male/Female Age ______
3. How long have you been at A.N.U.? ______
4. How long have you lived in your present block? ______
5. Have you spent most of your life in:
   rural surroundings
   small town (500 or less)
   large town (5000 - 20,000)
   city (20,000+)

6. How many people lived in your house most of the time while you were growing up?

Life in the Residences

7. Most people seem to have a more or less well defined group of friends.
   i) What is the approximate size of your group in Canberra?
   ii) How many of them live in this residence?
   iii) How many of them live in this block?
   iv) How many of them are doing the same course as you?

8. Do you usually entertain visitors in the common room/lounge area?

9. Approximately how many hours per day do you usually spend in the common room/lounge?

NOTE: The following two questions are asked because they seem to be important in determining a person's lifestyle in the residences. I apologise for the personal nature of the questions and ask them only because they seem to be so relevant.

10. Does your boyfriend/girlfriend live in this block?
   YES  NO  NOT APPLICABLE
11. Does your boyfriend/girlfriend live in this residence? 

   YES  NO  NOT APPLICABLE

12. Do the other people in your block usually know who your friends are? 

   YES  NO  NOT APPLICABLE

13. Is your room well insulated for sound? 

   YES  NO  NOT APPLICABLE

14. At what time do you usually get up during the week? 

15. What time do you usually eat your evening meal during the week? 

16. What time do you usually go to bed during the week? 

17. Do you usually study in your room? 

NOTE: Questions 18 - 24 refer to your block (i.e., the unit based on your kitchen).

18. How many females live here? 

19. Do you feel this group is one of the more successful ones in Toad? 

   YES  NO  UNSURE

20. If you feel there is an accepted leader of this group would you please indicate the person's name. 

21. How often this year has most of your group participated in a social event of some kind together? 

22. Does your group have fairly well defined rules about: 

   i) Noise 

   YES  NO  UNSURE

   ii) Borrowing 

   YES  NO  UNSURE

   iii) Cleanliness 

   YES  NO  UNSURE

   iv) Friends visiting 

   YES  NO  UNSURE
23. Would you please name (in order) the three people in this block that you interact with best?
   1. ____________
   2. ____________
   3. ____________

24. Would you please name below (in order) the 3 people in Toad that you interact with best?
   1. ____________
   2. ____________
   3. ____________

25. Approximately how many people in your block do you think have similar views to you own on
   i) Politics
   ii) Money
   iii) Sexual morality
   iv) Lifestyle

26. Do you feel the general layout of Toad is satisfactory?
   YES  NO  UNSURE

27. Do you feel you have satisfactory facilities for entertaining your friends?
   YES  NO  UNSURE

28. Do you consider your diet while living here is satisfactory?
   YES  NO  UNSURE

29. Are you satisfied with your day to day schedule of getting up, eating and going to bed while living here?
   YES  NO  UNSURE

30. Have you been satisfied with the amount of privacy you have been able to obtain while living here?
    YES  NO  UNSURE

31. Have you been satisfied with the amount of study you have been able to do while living here?
    YES  NO  UNSURE
32. Have you been able to adopt an acceptable lifestyle while living here? YES NO UNSURE

33. Do you think your room is large enough? YES NO UNSURE

34. If you were going to be at A.N.U. next year would you like to stay here? YES NO UNSURE
Dear Burton Resident,

I am doing some research into the advantages and disadvantages of various types of student residences and would appreciate your completing the following questionnaire.

As well as helping me complete my degree this information should be useful in helping architects and administrators establish more successful residential environments in the future.

The Psychology Department has allotted me funds to pay $2 per completed questionnaire and this can be collected by handing the questionnaire in to the collector outside the BURTON OFFICE at any of the following times:

Friday 17 Sept (i.e., tomorrow) 8:30 - 9:30 a.m.
12:30 - 2:00 p.m.
5:00 - 6:00 p.m.

Hoping you will find time to co-operate,

Mike Bossley
C/- Psych Department

---

**ALL INFORMATION IS ABSOLUTELY CONFIDENTIAL**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Room number</td>
<td>Age</td>
</tr>
<tr>
<td>2.</td>
<td>Sex</td>
<td>Name</td>
</tr>
<tr>
<td>3.</td>
<td>How long have you been at A.N.U.?</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>How long have you been living on this floor?</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Have you spent most of your life in:</td>
<td></td>
</tr>
</tbody>
</table>

- rural surroundings
- small town (5,000 or less)
- large town (5,000 - 20,000)
- city (20,000+)
6. How many people lived in your house most of the time while you were growing up?

7. Life in the Residences
   Most people seem to have a more or less well-defined group of friends.
   i) What is the approximate size of your group in Canberra?
   ii) How many of them live in this residence?
   iii) How many of them live in this block?
   iv) How many of them are doing the same course as you?

8. Do you usually entertain visitors in the common room?

9. Approximately how many hours per day do you normally spend in the common room/lounge?

NOTE: The following two questions are asked because they seem to be important in determining a person's lifestyle in the residence. I apologise for the personal nature of the questions and ask them only because they seem to be relevant.

10. Does your boyfriend/girlfriend live in this floor (that is the unit sharing one set of bathroom facilities)?

11. Does your boyfriend/girlfriend live in Burton?

12. Is your room well insulated for sound? YES NO UNSURE

13. Do the other people on this floor usually know who your friends are? YES NO UNSURE

14. What time do you usually get up during the week?
15. What time do you usually eat your evening meal during the week?

16. What time do you usually go to bed during the week?

17. Do you usually study in your room? YES NO UNSURE

NOTE: Questions 18 - 24 refer to your floor, that is the group based on a bathroom.

18. How many females live here?
   How many males?

19. Do you feel this group is one of the more successful ones in the residence?

20. Do you feel there is an accepted leader of this group? If so, would you please name the person.

21. How often this year has your group participated in a social event of some kind?

22. Does your group have fairly well defined rules about
   i) Noise YES NO UNSURE
   ii) Borrowing YES NO UNSURE
   iii) Cleanliness YES NO UNSURE
   iv) Friends visiting YES NO UNSURE

23. Would you please name below in order the 3 people in this floor that you interact with best?
   1. ____________
   2. ____________
   3. ____________

23b Would you name below (in order) the 3 people in this Hall that you interact with best?
   1. ____________
   2. ____________ 3. ____________
24. Approximately how many people on your floor have similar views to your own on:
   i) Politics
   ii) Money
   iii) Cleanliness
   iv) Life style

25. Do you feel the general layout of the Hall is satisfactory?

26. Do you have satisfactory facilities for entertaining friends?

27. Do you consider your diet while living here is satisfactory?

28. Are you satisfied with your day to day schedule of eating, rising and going to bed while living here?

29. Have you been satisfied with the amount of study you have been able to do while living here?

30. Have you been satisfied with the amount of privacy you have been able to get while living here?

31. Have you been able to adopt an acceptable lifestyle while living here?

32. Do you think your room is large enough?

33. If you were going to be at A.N.U. next year would you like to stay here?
APPENDIX 10

STUDENT RESIDENCE SURVEY

ALL INFORMATION IS ABSOLUTELY CONFIDENTIAL

Name ____________________

1. Room Number ________ Age ________

2. Sex Male Female

3. How long have you been at this College? ________

4. How long have you been living at this residence? ________

5. Have you spent most of your life in
   small town (less than 5,000) ________
   rural surroundings ________
   large town (5,000 - 20,000) ________
   city (20,000+) ________

6. How many people lived in your house most of the time when you grew up? ________

LIFE IN THE RESIDENCES

7. Most people seem to have a more or less well defined group of friends.
   i) What is the approximate size of your group? ________
   ii) How many of them live in this residence? ________
   iii) How many of them live in this block? ________
   iv) How many of them are doing the same course as you? ________

8. Do you usually entertain visitors in the common area? ________

9. Approximately how many hours per day do you usually spend in the common area? ________

10. Does your boyfriend/girlfriend live in this block?

   YES   NO NOT APPLICABLE
11. Does your boyfriend/girlfriend live in this residence?
   YES  NO  NOT APPLICABLE

12. Is your room well insulated for sound?
   YES  NO  NOT APPLICABLE

13. Do the other people in your block usually know who your friends are?
   YES  NO  NOT APPLICABLE

14. What time do you usually get up during the week? 

15. What time do you usually eat your evening meal during the week?

16. What time do you usually go to bed during the week?

17. Do you usually study in your room? YES  NO  UNSURE

Questions 18 - 24 refer to your block.

18. How many females live here?  
   How many males?  

19. Do you feel this group is one of the more successful ones in the residence?
   YES  NO  UNSURE

20. If you feel there is an accepted leader of this group would you please name him/her?

21. How often this year has your group participated in a social event of some kind?

22. Does your group have fairly well defined rules about:
   i) Noise  YES  NO  UNSURE
     ii) Borrowing  YES  NO  UNSURE
     iii) Cleanliness  YES  NO  UNSURE
     iv) Friends visiting  YES  NO  UNSURE

23. Would you name below (in order) the 3 people in this residence that you interact with best.

   
   
   

23b Would you please name below (in order) the 3 people in this block that you interact with best.

__________________________
__________________________

24. Approximately how many people in this block have similar views to your own on:

i) Politics
   NONE SOME MOST

ii) Money
    NONE SOME MOST

iii) Sexual morality
     NONE SOME MOST

iv) Lifestyle
    NONE SOME MOST

25. Do you feel the general layout of this residence is satisfactory? YES NO UNSURE

26. Do you have satisfactory facilities for entertaining friends? YES NO UNSURE

27. Do you consider your diet while living here is satisfactory? YES NO UNSURE

28. Are you satisfied with your day to day schedule of eating, rising and going to bed while living here? YES NO UNSURE

29. Have you been satisfied with the amount of study you have been able to do here? YES NO UNSURE

30. Have you been satisfied with the amount of privacy you have been able to get while living here? YES NO UNSURE

31. Have you been able to adopt an acceptable lifestyle while living at this residence? YES NO UNSURE

32. Do you think your room is large enough? YES NO UNSURE

33. If you were going to be at this College next year would you like to return to this residence? YES NO UNSURE
Dear ......

I am doing some research into student's attitudes toward the residences provided by this College.

As you have left your residence I am particularly interested in getting some information on your opinion of the residence and residence life.

Would you please indicate which of the following was involved in your decision to seek alternative accommodation:

a) Residence too remote
b) Lack of recreation facilities
c) Poor physical design
d) Administration of the residences
e) Lack of privacy
f) Expensive rent
g) Unable to get on with other residents
h) Other (please specify) (see below)

If you wish to nominate more than one of the above please number your choices so that 1 = the most significant factor: 2 = next most significant; etc.

I would also appreciate any general comments you would like to make concerning the residences. Perhaps you could jot them on the other side of this sheet?

Thank you very much for your help.

Yours sincerely

Mike Bossley
APPENDIX 12

DESIGN IMPLICATIONS FOR STUDENT RESIDENCES

It is inappropriate to offer detailed prescriptive comments on the design of student residences on the basis of this research. A number of specific recommendations concerning the residences studied have been made in the body of the thesis and need not be repeated here.

A number of general implications for the design of student residences can be outlined. These include:

(a) The perception and use of environment changes over time. It follows that flexibility should be maximised in any residence design.

(b) The student body consists of a collection of diverse individuals with a corresponding diversity of environmental preferences. It seems desirable to provide as wide a range of residential environments as possible.

(c) Suite style accommodation should provide adequate extra-suite facilities to allow friendships to develop between students from different suites.

(d) Noise insulation should be accorded priority placement on the architect's brief as noise was a major irritant in all residences studied.

(e) Facilities not tied to a subsection of a residence seem to represent a bad design - behaviour relationship. Totally "public" facilities (e.g. the washing machines in Toad Hall) tend to be mistreated.

(f) Although it is difficult to be categorical the research suggests an optimum suite size may be seven to eight individuals.
(g) Meal preparation and eating are important social functions within the student residence. Facilities at least the equivalent of the suburban domestic kitchen are expected by residents.

(h) Periodic investigations of user satisfaction should be conducted in order to monitor the adequacy of the residence environment. Changing lifestyles, attitudes and architectural fashions may produce quite rapid changes in the satisfaction level of residents.

In summary, any architectural strategy which might increase a residence's flexibility (e.g., modular design), seems desirable both economically and socially.