THE DWELLING AS A NODE OF DAILY ACTIVITY

AMONG NON-INSTITUTIONALIZED RETIRED MEN

by

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The Dwelling As A Node of Daily Activity Among

Non-Institutionalized Retired Men

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A B S T R A C T

The thesis focuses on the ordinary experience of retired men who live in private dwellings. The fundamental hypothesis is that the activity patterns of this population may be differentiated more by characteristics of their housing than by traditional sociometric variables other than age.

A telephone survey was conducted among a random sample of 91 retired men in the Vancouver area. They were asked to give a total one-day-recall 24-hour time and location budget, as well as information on housing history, current dwelling characteristics, and household demographic and socio-economic characteristics.

Background research utilized data from the **1981 Census of Canada**, the **1974 Survey of Housing Units** and other government sources. Several methodological advances were made in the thesis. The standard time-budget taxonomic classification system was supplemented by original applications of such analytical concepts as 'social intercourse' and 'muscular motility'. The geographical components of activities were carried beyond co-ordinate geometry: activities were distinguished by 'social tenure of space', and by their locations 'associated with the dwelling or away from the dwelling' and 'indoors or outdoors'. Innovative 'data-rich' graphical presentation methods were also introduced.

The principal findings are: 1) Ownership tenure and single detached or mobile home residency significantly correlate with activities which respondents classified as 'work' rather than 'leisure' and with activities requiring relatively vigorous muscular motility. 2) The number of rooms in the dwelling and the number of rooms per person both correlate positively with muscular motility; the number of rooms correlates inversely with respondent age and with leisure activities. 3) Age of respondents correlates negatively with muscular motility. 4) Higher socio-economic status correlates with outdoor activities. This is the only finding which directly contradicts the fundamental hypothesis. 5) A counter-intuitive inverse relationship between household income and interior dwelling space per person emerged from aggregate government data. This finding could be neither confirmed nor contradicted at the level of this survey sample.

TO RACHEL AND MATTHEW

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CHAPTER ONE
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AMONG NON-INSTITUTIONALIZED RETIRED MEN

I. INTRODUCTION

The central theme of this dissertation is the explication of the rela-
tionships between the retired man's long-term choices about housing and his
everyday choices about living. In simple language, in order to make sense of
his various activities, we need to pay more attention to his dwelling.

Some geographical studies of similar subjects have concentrated on
very localized environments, such as Rowles' (1978) classic perception study,
Wilson's (1982) pedestrian distance study, and Bernadin-Haldemann's 'home
range' study (1982). Other geographers have focused on migration, distribution
and intra-urban travel of the aged population. (Golant 1972 and 1984, Priest
1970, Smith and Hiltner 1975) The present study adopts a mid-range approach
through a field study of retired men in parts of the metropolitan Vancouver
area. Daily activities were sampled by means of a one-day recall 24-hour time
budget which included locational details. Information about the housing con-
text was obtained through some specific questions about housing history and
the current dwelling situation.

Most time budget information about the aged population which is cur-
rently available comes as a bi-product of some large-scale time budget studies
of people of all ages rather than of subgroups. (See, for example, a number of
major national and even international studies, such as Matsushima 1981, Szalai
1972, Nakanishi 1982 or especially Kinsley and O'Donnell 1983.) Time budget
research which specifically focuses on the aged population is rare. Some be-
ginnings in this effort are emerging in Canada with Ujimoto's work on aged
ethnic minorities (1982).

Time budget research in the sociological tradition typically includes
certain sociometric variables such as age, education, income and marital sta-
tus of respondents. The important 1981 **Canadian Time Use Pilot Study** is an
example of this sort of approach. (Kinsley and O'Donnell: 1983:30-34) In a
retired population, some debilitating effects of aging must be expected, but

the sociometric variables are probably given more attention than they deserve.
The sociological time budget researchers have failed to examine the sig-
nificance of location relative to the dwelling in the patterns of daily life.

Studies in the Lund geographic tradition, following Hägerstrand
(1970), have made the time-location 'prism' a central focus of analysis. This
'prism' is a three-dimensional graphic presentation of human movement in a
time and space framework. A typical 'prism' begins and ends at the individual
dwelling (Lenntorp 1976). Although this emphasis on locational aspects of tem-
poral phenomena is a useful addition to time-budget research, in practice,
scant attention has been paid to the dwelling itself by the Lund geographers.

There is no precedent in the literature known to this author which
combined a time budget survey among retired or aged subjects with a study of
their current and past dwelling situations. In the light of this significant
gap, the dwelling is made central to the conception of this dissertation. A
formal purpose of the thesis is expressed as a fundamental hypothesis: **The ac-
tivity patterns of retired men may be differentiated more by characteristics
of their housing than by traditional sociometric variables other than age.**

A. SOCIAL TIME AND SOCIAL SPACE

A broader concern underlying this research topic is to develop an un-
derstanding of the intersection between choices about the use of **social time**
and the use of **social space** in contemporary society. These **space** and **time**
choice patterns are examined among men who are retired. Trends toward an older
population in North America and Europe have stimulated widespread recent in-
terest in gerontological studies among practitioners of a number of dis-
ciplines. Retired men share most of the same values as other men. Another way
of stating the case is that retired men differ among themselves with respect
to their basic values as much as they differ from younger men. Their life
circumstances are quite different, however. They are generally confronted with
few parental responsibilities and they are not at all constrained by the jour-
ney to work. They may be expected, therefore, to enjoy more latitude in their
dwelling and activity choices than younger employed men. It was because of
their posited **high degree of freedom to choose their own uses of time and
space** that retired men were chosen as the subjects of this thesis.

B. CONCEPTUAL ISSUES

The thesis focuses on the daily activity of retired men who live in private dwellings in the Vancouver area. This is a topic which is **local** and **contemporary.** As a general rule, a topic which is near at hand in time and space gives the researcher more scope for collecting data. Thus, if a person is interviewed at one point and later during analysis some need for clarification arises, then the research subject can be consulted again. Similarly, government and other archival statistical information can be interpreted with occasional consultations with people who were involved in the original compilation.

Some difficulties can arise because a topic is local and contemporary. If personal information needs to be obtained from living people, for example, then their privacy must be protected. The privacy problem was overcome by reporting information about the men in such a way that they could not be individually identified.

Another difficulty of researching a topic within the researcher's own culture is intellectual. Some important aspects may be ignored by the investigator precisely because they are too familiar. In order to minimize this hazard, two quite different research methods are employed.

The first is the **inductive ethnographic method,** which attempts to frame an analysis with conceptual categories which are derived from the research subjects. At an early stage in the research, the conducting of a series of in-depth interviews was considered. A test of this approach in the field yielded information which was too idiographic to contribute to a general understanding of housing and time-use choices. A way to collect information from many more respondents was needed. Although a wholly inductive approach was rejected, it was not entirely abandoned. Some open-ended questions were included in the survey instrument, and these were coded after the fact. (See the 'POST HOC' coding categories, for example, in Appendix E.)

The second research method is more **deductive,** whereby a conceptual framework was planned by the investigator and data were collected which are amenable to statistical analysis. The researcher examined leisure and time-budget literature and met with some of the principal researchers in these

fields. Time-budget research methods seemed promising for the projected research problem, but the **'taxonomic'** activity classification system which is used by time-budget sociologists is too descriptive rather than analytical in its conception to suffice for the purpose. Alternative **'deductive activity classification schemes'** were formulated by the author for field research and presented to colleagues at the World Congress of Sociology in Mexico City.

C. A TELEPHONE SURVEY

The present study owes much to the **1981 Canadian Time Use Pilot Study** (Kinsley and O'Donnell 1983), which used long-distance telephoning successfully. Since in-person interviews would have been too time-consuming at the scale contemplated for this project and would likely have yielded information similar to that obtained by telephone (Herzog, Rodgers and Kulka 1983), the **Pilot Study** telephone method was used.

The problem of finding a source of information which listed retired people was vexing. Lists of pensioners which are kept by Health and Welfare Canada are not available to private researchers. Voter lists no longer include occupational information. The author's eventual discovery of Polk Directories as the only known source of a publicly-available list of people who are retired was seminal for the success of the project. A random sample survey was thus possible.

D. STATISTICAL TESTING

The information collected in the course of the telephone survey consists mostly of categorical and rank-ordered rather than ratio- or interval-scale data. For this reason the statistical testing reported in Chapter Five and later uses non-parametric statistical methods. A series of indices were developed, the values of which are calculated by linear transformation techniques. The details of these methods and procedures are given in the chapters which follow and in chapter footnotes.

II. THE THESIS

A. THE DWELLING AS A NODE . . .

A retired man's dwelling is the centre of his life. His dwelling is a node, a focus, a pivot. He usually begins and ends his day in his dwelling. If he travels, he **leaves** his dwelling and **returns** to it. For most urban Canadians, the dwelling is not the place where a livelihood is earned. It is the place associated with repose, with leisure. At its best, the dwelling is also 'home'. It is the place where people feel most secure and most comfortable.

The physical structure of a dwelling is its most obvious manifestation, but a dwelling is much more. It is a package of expectations and services which are set in a particular social and spatial context. For the purpose of this study, this package must include 1) shelter from the elements, 2) privacy and security from unwanted intrusion, 3) provisions for sleeping, sanitation, food preparation and consumption, indoor recreation and storage of personal effects, and 4) accessibility to means of sustenance and essential health facilities.

B. . . . OF DAILY ACTIVITY . . .

Except for a few Arctic peoples in the summertime, the diurnal cycle is the basic regulator of human activity. Some of the activity patterns which we follow are common to our whole culture. Others we develop individually or communally within our household.

A second regulator of activity in the whole Judeo-Christian-Islamic world is the seven-day week. The traditional weekly pivot is the holy day: Friday for Muslims, Saturday for Jews and a few Christians, and Sunday for most Christians. Relatively recently in North America and in much of Europe, the week has come to be divided into a more generalized dichotomy: weekdays and the weekend. The core of the weekend is Saturday and Sunday, but there are some anticipatory weekend activities on Friday and some lesser lag effects on Monday. Many employed people routinely stop working early on Fridays. Official holidays are often fixed on Mondays to create 'long weekends'. Some businesses which are open on Saturdays are closed on Sunday and Monday. The core weekdays are therefore Tuesday, Wednesday and Thursday. The present survey includes

time diary data for each day of the week.

The monthly cycle is not a very important regulator of activity patterns, except for a few subgroups such as welfare recipients, whose 'cheque day' is critical. (Prior 1980: 61, 64)

The annual cycle is important for activity patterns in two ways: seasonality and holidays. Although the Lower Mainland of British Columbia has warm and relatively dry summers and cool, wet winters (Farley 1979: 45), the area experiences considerably less marked seasonality than most of Canada, which is dominated by Continental climate regimes. Holidays are of two types: fixed official non-working days and variable vacation periods. The official holidays are often associated home-based activity or short trips. Vacations are often characterized by extensive travel.

Although the weekly and annual cycles will be considered, this study is grounded on the assumption that the most important patterns of our lives as a whole are mirrored in our daily activities. What people make of their lives they are making today.

C. . . . AMONG NON-INSTITUTIONALIZED . . .

Most scholarly effort in the field of housing for the aged population has concentrated on "unique residential situations" (Rosenberg 1985: 377) which are designed for people with special needs. Such research work is important, because it has major implications for public policy. There have been a number of field studies which have enhanced knowledge about institutional and special needs housing for the aged. (See, for example, Lawton, Nahemow and Teaff 1975, Gutman 1978, Sherwood, Morris and Barnhart 1975, Sherman 1975a and 1975b, Teaff, Lawton, Nahemow and Carlson 1978, and especially Malozemoff, Anderson and Rosenbaum 1978.) Another body of literature describes facilities and programs which have been designed for the special needs of aged residents of institutions. (Lightman and Kantrowitz 1975 is a typical example of this sort of writing.)

Research which is oriented toward institutions has to miss those aged people who are living rather normal lives, those who are living the kind of retirement toward which most members of the working population are aspiring. The aged population which is not dependent on public institutions for their housing is the overwhelming majority. (Wilson and Boniface 1985: 18) Indeed, it is now realistic for many people to look forward to perhaps two decades of relatively unencumbered retirement. Much more attention to this unexceptional population is clearly warranted. This thesis therefore concentrates on retired men who are living in private dwellings rather than in institutional settings.

E. . . . RETIRED . . .

The meaning of retirement is obvious. Or is it? It is such a common concept that people seldom think about it in precise terms. If the statement is made, "Mr Affenby started his retirement over six years ago," it may mean that he reached a point in his life when he stopped working at a regular job. At that time, he acquired a new social status as a 'retired man', or more specifically, a 'retired plumbing contractor'. Attached to that social status is a social role, or set of expected behaviours, including not working at a regular job and collecting a pension for support. A discussion of retirement from several perspectives follows which will be helpful in interpreting the housing and activity choice patterns of survey respondents.

1. Status and Role

The concept of **social status** is used in this work in a particular way that is at variance with ordinary usage. It is a neutral term with no necessary implications of social stratification, asymmetry or non-reciprocity (see Henley, Horsfall and De Soto 1969: 194) which are better communicated with such terms as **social prestige, social class** or **power**. A **social status** is simply one of a number of positions which an individual occupies. Such a meaning is much more consistent with the Latin noun, 'status': which has been defined as "a standing, mode of standing, position, posture...." or metaphorically, "posture, position, situation, state". (Smith 1933: 707) A social status often functions in a relative way with respect to others who occupy a different set of statuses. One man may be a husband, a father, a nephew, a civil servant, a

rock hound, a Canadian, and many other statuses. In addition to permanent sta-
tuses, there are temporary statuses as well, such as tourist, shopper, drunk
driver, or orthopedic patient. Associated with each status, or a combination
of more than one, are **roles**, or sets of behavioural expectations which are
generally associated with these statuses. This culturally-defined juxtaposi-
tion of status and role gives semantic coherence to social structures.

2. Retirement Status

The **Oxford English Dictionary** (1933, Vol. VIII) gives one definition
of the intransitive verb, 'to retire' as follows:

> To withdraw from office or an official position;
> to give up one's business or occupation in order to enjoy
> more leisure or freedom (esp. after having made a compe-
> tence or earned a pension).

Two early quotations in the **OED** illustrate this definition:

> 1667 [Samuel] Pepys, **Diary**, 30 Aug., He did not think any
> man fit to serve a prince that did not know how to retire
> and live a country life.

> 1712 [John] Arbuthnot, **John Bull**, I. xvi, I have,
> indeed, a small Pittance left, with which I might retire.

The concept of retirement also has emotive content. As a young boy,
this author once asked a great uncle if he were retired. He replied, "No, I'm
just tired." In many cases, a person's job status may be ambiguous enough that
he or she would honestly not know how to answer that question seriously.

For purposes of research, an operational definition must be formula-
ted. The sort of definition used depends on the research problem and the data
collection methods. One British Columbia study defined the concept broadly but
simply enough to isolate the 'retired' from the 'non-retired':

> For the purpose of the study the 'retired' are those per-
> sons who have permanently left the work force. (Curtis et
> al. 1970: 6)

The practical problem in that case was to determine what was meant by 'perma-
nently' and 'the work force'.

Another study used the concept of variable degrees of retirement which
could be quantified as its definition (Palmore 1971). In this case, Social
Security recipients in the United States were classified according to the num-
ber of weeks they had not worked in paid employment in one year. (Atchley
1976: 7, 20) Specifically, the number of weeks not worked was calculated as:

. . . 52 minus number of weeks of full-time work and minus
one-half of the number of weeks of half-time or part-time
work. (Atchley 1976: 155)

Robert Atchley has recognized the relative, rather than the dichoto-
mous nature of retirement in his definition:

Retirement . . . refers primarily to the final
phase of the **occupational** life cycle. It refers to the
period, following a career of employment, in which occupa-
tional responsibilities and often opportunities are at a
minimum and in which economic wherewithal comes at least
in part by virtue of past occupational efforts. (1976: 2)

Atchley shows valuable insight in his more detailed discussion of the concept:

The most essential characteristic of retirement as
a social institution is that the norms of the society al-
low an individual, by virtue of the work he performs on
the job, to establish a **right** to an income without holding
a job. And this income in turn gives the individual the
opportunity to play the role of retired person. (1976: 2)

Atchley often uses the concept of 'role' in the sense in which this author
prefers to use 'social status'. In the context of "to play the role", however,
Atchley's usage probably lies somewhere between the concept of 'social status'
and 'social role' discussed on pages 7 and 8.

3. Retirement as a Rite of Passage

For many people, the event of retirement is marked by a formal cere-
mony which constitutes a rite of passage from the social status of job holder
to retired person. It is through such ceremonies that societies symbolically
express their collective attitudes toward the newly attained status. Arnold
van Gennep classified rites of passage into three major classes: "preliminal
rites (rites of separation), liminal rites (rites of transition), and post-
liminal rites (rites of incorporation)." (1960: 11) Actually, any one ceremony
normally contains all three of these elements, so classification depends on
identifying the major emphasis.

Atchley points out that the retirement event emphasizes separation.
(1976: 54) The gift-cliché of a watch is symbolically revealing in this con-
text. For somebody retiring from a nine-to-five job, a time-piece seems to be
peculiarly useless. It would seem that a gift of a watch would be more mean-
ingful at the beginning of a career than at the end of it. Perhaps the em-
ployee could gleefully return the watch during the retirement ceremony! More
importantly, the gift of a watch punctuates the backward rather than the for-

ward focus of the retirement ceremony. Most of the people attending, and cer-
tainly those who are controlling the ceremony are themselves job holders who
have not yet retired. More careful reflection reveals that a watch is not as
inappropriate as it may seem. A lifetime of clock-time orientation does not
get reversed on retirement day. Indeed, during the telephone survey, retired
men displayed little difficulty in reconstructing yesterday's activities in
terms of clock time. Another typical retirement gift is some travel-oriented
token, such as a set of luggage. This sort of gift purports to be forward
focusing, but it expresses its own stereotype of a retiree as a carefree trav-
eller.

4. Retirement as a Process

Retirement is a social status which has an end as well as a beginning.
For those who die suddenly, the end may coincide with the end of life. For
many others who gradually lose independent control of their lives through in-
firmity or disease, a loss of dignity often coincides with the loss of the
social status of retirement. A person in such a position of course would still
be a former job holder and would normally draw a pension. Such a person, how-
ever, would seldom be referred to or even think of himself or herself as a re-
tiree.

Robert Atchley has identified six major phases of the process of re-
tirement:

```
1. Preretirement
        a) remote phase
        b) near phase
2. Honeymoon
3. Disenchantment
4. Reorientation
5. Stability
6. Termination
        (1976: 63-71)
```

The retirement process for any one individual need not include all the stages.
Neither does it have to proceed in the order listed above. Nevertheless,
Atchley's scheme appears to be thorough and quite useful for putting given
case histories into a general theoretical context. The year in which each re-
spondent's retirement period began and his housing history are therefore im-

portant elements of the telephone survey which was designed for this thesis. (See Figure 6-1 and Appendix D.)

5. Retirement and Age 65

Metropolitan Vancouver includes a large number of retired people. The actual number of retired is difficult to determine, however, because there is no comprehensive source of information available to researchers on the retired population.[1] Even the national censuses in Canada have contained no direct questions about retirement status.

There is fairly good information now available on the distribution of Old Age Security [OAS] and Guaranteed Income Supplement [GIS] recipients. (Health and Welfare Canada 1985) The retired population does not coincide, however, with the pensioner population. A person becomes eligible for OAS simply by meeting certain residency requirements and attaining 65 years of age. The person's occupational status is irrelevant. (Health and Welfare Canada 1984: 21-22) Some people retire before they become eligible for OAS, and others continue to work for pay after age 65.

In any case, age 65 is the watershed. Certainly the most common age at which men retire is 65 years old.[2] For the purpose of selecting the study area and for gathering associated demographic information, the population 65 years of age and older will be used as a surrogate for the retired population.

The following analysis will emphasize characteristics of the retired population, but the residential situation of people before retirement also can affect their housing and activities after they retire, so certain aspects of housing for the general population will also be treated.

6. An Operational Definition

Retirement is a social institution of great importance in the industrialized world. It is not the central purpose of this thesis, however, to study retirement as a social institution. Rather, the study focuses on certain perceptions and decisions relevant to the use of urban space by a group of men who occupy the social position or social status of 'retiree'. Stated another way, the study is to be at base geographical rather than gerontological. An important research objective is to delineate the relationship between housing

choice and adult activity patterns in an urban setting. Retired men have been chosen as subjects since the journey-to-work and family-rearing constraints can thereby be eliminated or at least minimized.

It is therefore this social status which requires an operational definition. For the purpose of this study,

> a retired man is a man with the physical and mental ability to lead an independent life, who was previously employed, but in a specified recent 12-month period was not working for pay for 39 weeks (3/4 of the year) or more, and whose principal income was derived from one or more pensions, annuities or similar sources.

F. . . . MEN

It is reasonable to assume that for the overwhelming majority of retired people who are or were married, the husband's occupation and work location has had a central impact on decisions about housing. Furthermore, the occupational status, including the retirement status of the couple was and is determined very largely by the status of the husband.

The general activity patterns of adult Canadian males differs markedly from those of their female counterparts. (Shaw 1982: 235) Married females who are occupied outside the home, and even more so married females without paid employment responsibilities, generally play a more important role in the work and administration of the dwelling than married males. Thus married males who retire face a larger adjustment to spending more time at home than female retirees or the wives of male retirees. These and other gender-based differences in activity patterns are beyond the scope of the present study. The inclusion of both females and males in the study population therefore would clutter the analysis of the relationship between the use of time and housing choice with extraneous variability. The subject population of the field research for this study for this reason is limited to men.
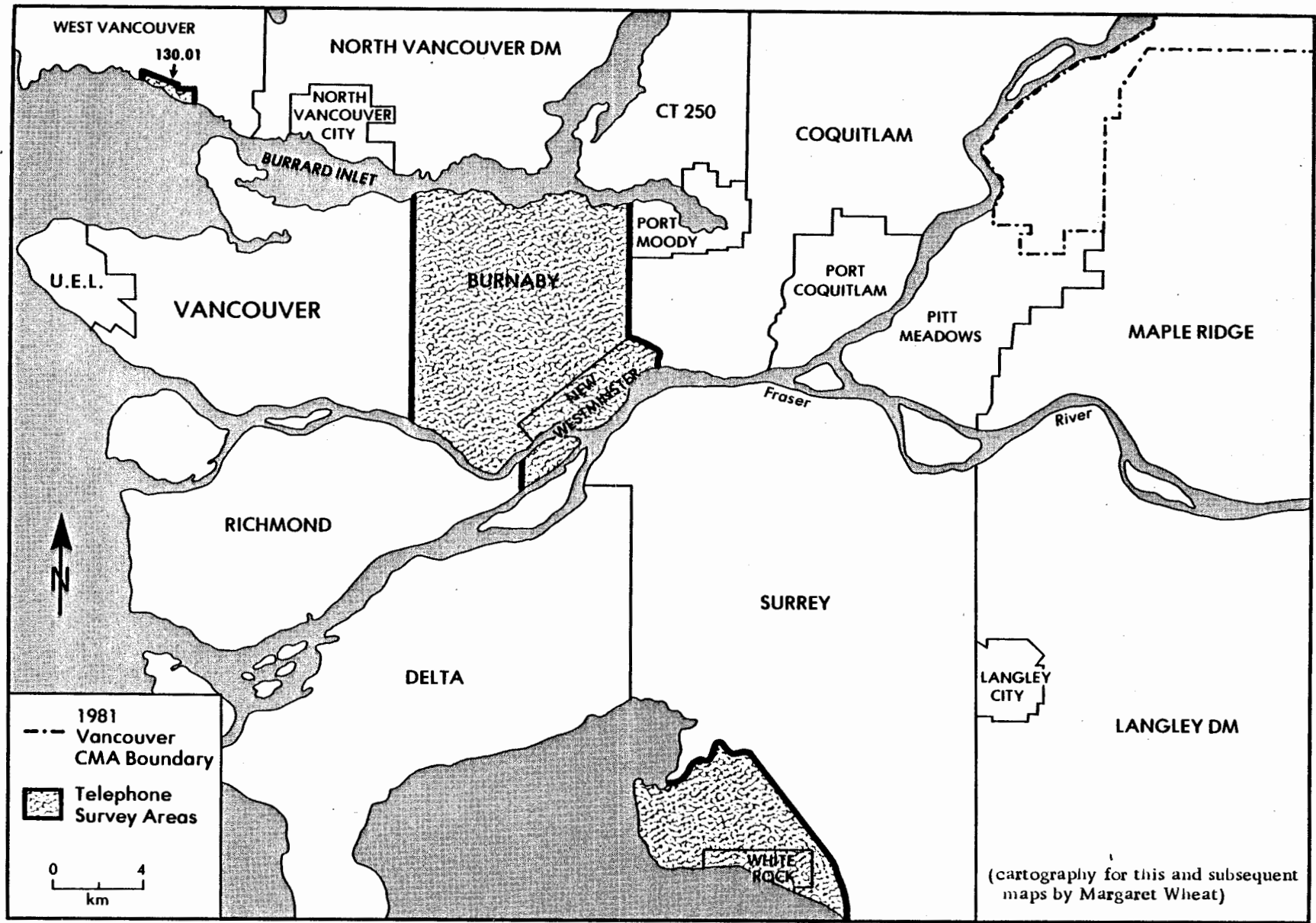
MAP 1-1: THE TELEPHONE SURVEY AREA AND MUNICIPALITIES OF THE 1981 VANCOUVER CMA

III. BACKGROUND RESEARCH

Major background research was carried out by analyzing three major
data sources: 1) the **1974 Survey of Housing Units,** 2) the **1981 Census of Can-
ada** and 3) statistics from Health and Welfare Canada regarding the **Guaranteed
Income Supplement.**

B. THE 1974 SURVEY OF HOUSING UNITS

An extensive analysis was carried out with the Vancouver area data
from the most recent comprehensive urban housing study in Canada: the **1974
Survey of Housing Units (SHU),** which was conducted by Statistics Canada under
contract with the Central (now Canada) Mortgage and Housing Corporation. The
1974 SHU used the 1971 Census as a sample frame, supplemented by a sample of
the dwelling units which were constructed between 1971 and 1974. The only geo-
graphical differentiation reported was the urbanized cores of the major metro-
politan areas of Canada. In the case of Vancouver, this included Vancouver
City, Burnaby District Municipality, New Westminster City and North Vancouver
City. (CMHC n.d.(a): Appendix A) The boundaries of these municipalities are
included on Map 1-1.

For this analysis, all tables which included ratio-scale data were
summarized both horizontally and vertically by median values which were cal-
culated by linear interpolation within the median cell.

1. Structural Type

The **1974 SHU** distinguished six different structural types which may be
collapsed into two for this summary: **single** detached dwellings and dwellings
in **multiple** dwelling-unit buildings. The **attached** type of dwelling, which is
connected with a major non-residential structure is agglomerated with the **mul-
tiple** type. Some structural types were excluded from the survey, including mo-
bile homes and rooming houses with more than ten lodgers. (CMHC n.d.(a): 2)
The results of the analyses of the **1974 SHU** data with respect to structural
type may be summarized as follows:

—The housing stock was almost evenly divided between single and mul-
tiple dwelling units. The general trend was toward more high and medium densi-

ty residential land use forms since the early 1960's. Since the telephone sur-
vey area for this present inquiry included more peripheral parts of the Urban-
ized Core (Map 1-1), as well as areas outside of it, the proportion of single
detached dwellings in the sample was considerably higher (69%) than for the
1974 SHU Vancouver survey area (48%) (CMHC n.d.(b): 1.1:1, 1.2:1).

—Multiple dwelling units were more commonly occupied by households
headed by young and old people, while middle aged householders tended to live
in single houses. Young and old householders are less likely to be living with
a spouse or with dependent children than their middle-aged counterparts. These
trends are consistent with the further finding of the **1974 SHU** that families
which included couples only and families with children were the most prevalent
household types living in single houses. Since the overwhelming majority of
respondents to the telephone survey were married and living only with their
wives, their strong tendency to be living in single detached dwellings is con-
sistent with these **1974 SHU** results.

2. Tenure

The **1974 SHU** distinguished between three types of tenure: **ownership**
units, **condominium ownership** units, and **rental** units. Co-operative tenure was
not recognized as a separate kind of tenure and was not mentioned in the docu-
mentation for the **1974 SHU**. Most tables agglomerated the two types of owner-
ship units. The principal tenure findings are:

—About 9 of 10 single detached dwellings were ownership units and
about the same proportion of multiple-unit dwellings were rental units. (CMHC
n.d.(b): 3.14a; 3.14b; 3.14c) Although the general directions of these rela-
tionships would be intuitively predicted, the fact that some 90% of the single
detached dwelling are owned must be emphasized because of the overwhelming
proportion it represents. Thus, these findings are fundamental to a proper un-
derstanding of how the housing stock was used in the Vancouver Urbanized Core
in 1974.

—Ownership households were in a better financial position than tenant
households according to a number of measures, including the amount and percen-
tage of income spent on housing. It will be shown that the positive relation-
ship between income and dwelling ownership continues to holds true for retired
men in the study area of the field survey for this thesis.

—Mortgage indebtedness was very low among householders in the 55+ year age group. Only 18% of the householders in this age group had any outstanding mortgages. Only 7% had mortgages whose principal outstanding exceeded $10 000. The corresponding figures for the 65+ a[3] group are 8% and 1%. These findings were so impressive that no further exploration of the phenomenon was carried out in the thesis field survey.

—The median figures were mixed, but there would appear to be a levelling off, and even possibly a decline in the equity of 'pre-retirement' owners, and there was a markedly lower equity level of 'retirement' owners compared to their middle aged counterparts. An explanation for this finding is important, but the untangling of this complex phenomenon was beyond the scope of this study.

3. Household Size and Density

Density is literally a concept of a ratio. More subtly and often more interestingly, density is a spatial phenomenon which people experience in a social context. In situations where people feel crowded, they experience sensory intrusion and interference with freedom. A contrasting negative situation is one in which people feel isolated, deprived of meaningful contact with others. Thus isolation is also a phenomenon characterized by a constriction of freedom to interact with other people. If crowding and isolation are regarded as the extremes of a continuum, then somewhere between these a state of balance may be found in which a person has the freedom to choose, to join or withdraw from the wider social world at will.

In Canada, and in many other places, a person's dwelling is a prominent expression of a need for privacy. Two important criteria by which a dwelling is valued are directly related to this conception of privacy. The first criterion is the efficacy of the dwelling as a barrier against intrusion. The second criterion is its proximity to gathering places and transportation facilities which are important to the resident.

In a social context, density is related to this continuum of crowding-privacy-isolation. It is important to recognize that there is no simple correspondence between density and crowding. Density represents "merely a quantitative expression relating numbers of people to defined areas," whereas crowding "implies a [negative] judgement on the social effects of relatively high

density." (Evenden 1981) Crowding, as well as privacy and isolation, must be seen to vary greatly in both a cultural and temporal context.

The **1974 Survey of Housing Units** produced a measure, size of household, which is an important variable in the crowding-privacy-isolation continuum as well as three direct housing density measures:

1) size of household

2) persons per room

3) persons per bedroom

4) dwelling area per person

The results of the **1974 SHU** for these density measures may be summarized as follows.

--On the basis of median figures, as household size increased, the number of rooms, bedrooms and dwelling area also increased. These increased at a slower rate, however, so the net effect of increasing household size was higher density.

--An analysis by age group showed that density generally increased until the 35-44 year age group and then declined thereafter, except that in the case of median dwelling area per person the density increased again slightly between 'pre-retirement' and 'retirement'. In other words, the households whose head was of retirement age tended to experience less stress because of high interior dwelling densities than other households.

--Finally, these measures showed a general **increase** in density as household income **rose**. Only the very highest income group consistently reversed this trend, and even then not enough to match the lowest densities experienced by the lowest income group. An examination of census data demonstrated that the controlling variable was a positive relationship between income and the number of persons living in a dwelling; the density-income relationship is probably a corollary. Nevertheless, this counterintuitive finding invites further examination by researchers.

Since the **1974 SHU** contained no spatial differentiation below the urbanized core of each metropolitan area, data from the **Census of Canada** were analyzed.

B. THE 1981 CENSUS OF CANADA

1. The 1981 Vancouver Census Metropolitan Area

Census Tract level data from the **1981 Vancouver Census Metropolitan Area (CMA)** which were published in printed form or on microfiche were analyzed. The key to the analytical procedure was fact that information for the Vancouver **CMA** is divided into 245 inhabited Census Tracts. (This is in contrast to the **1974 Survey of Housing Units,** which contained no geographical differentiation below the **urbanized core** level for each metropolitan area in Canada.) The **Vancouver CMA** includes the cities of Vancouver, North Vancouver, New Westminster, White Rock, Port Coquitlam, Port Moody and Langley, and the municipalities of West Vancouver, North Vancouver, Burnaby, Richmond, Delta, Surrey, Langley, Maple Ridge, Pitt Meadows, and Coquitlam, plus the University Endowment Area (UEL), several small Indian Reserves, and the unincorporated area designated Census Tract (CT) 250, which includes the villages of Lions Bay and Belcarra. Except for the fringe areas and the Indian Reserves, these jurisdictions, which are also Census Subdivisions, are shown on Map 1-1. The major findings of this analysis follow.

2. Dwelling Density

Dwelling density is simply a measure of the number of dwelling units per unit area. It does not imply anything specific about structural type. Neither does it take into account land use within the boundaries of the area of interest: lands used for roads, parks, business and industry are all included. In a region such as the **1981 Vancouver CMA,** where great land use contrasts exist, care must be exercised in interpreting dwelling density information at the Census Tract level. There were a total of 476 760 occupied private dwellings in the **Vancouver CMA** in 1981, which yields an arithmetic density of about 171 dwellings per km^2. This numerical density does not always indicate the densities which people actually experience. Very high densities exist in the West End of Vancouver near the Central Business District. Census Tract 065 in that area contained the highest dwelling density in the **CMA:** 16 783 dwellings per km^2. Other high density areas were also closely associated with commercial centres. Low densities are found in a number of fringe areas and in a

few areas characterized by discontinuous settlement such as near Burnaby Lake
or Burnaby Mountain which are well within the 'urbanized core'. Census Tract
250, the least dense in the CMA had only 1.5 dwellings per km2 in 1981. The
median density Census Tract 002 in southeastern Vancouver City contained 754
dwellings per km2. (Statistics Canada 1982b)

3. Pre- and Post-Retirement

There is no direct information in any Canadian Census data about peo-
ple who are retired. If, as suggested earlier in this chapter, the age of 65
years or more can be used as a surrogate for the 'retired' population, some
comparisons can be made. Similarly, the definition of the 'pre-retirement'
group is age-defined. The identification of this 'pre-retirement' age group
was also dependent on the particular choices which were made by Census Canada
in agglomerating data in the printed and microfiche sources which were used
for this study. Income data, for example, grouped a twenty-year cohort togeth-
er: **45-64 a.**

Pre- and post-retirement age groups differed significantly in several
ways in 1981. The income of the **45-64 a** groups was considerably higher than
those aged **65+ a.** Households in the **Vancouver CMA** which had **household main-
tainers** in the pre-retirement age group had a median 1980 income of $32 255 in
contrast with $15 852 for the households with post-retirement-aged maintain-
ers. (Statistics Canada n.d. (b))

The younger group carried more housing expenses than the older group.
A **weighted mean monthly housing expenses** measure was used to include both own-
ers and renters in the same figures. The **45-64 a** group spent a median amount
of $360 and the **65+ a** group expended a median of $199 on housing. (Statistics
Canada n.d. (a)) Based on information from the **1974 SHU**, it appears that the
major difference between the ownership households for these age groups must
have been that many of the younger households were still paying off mortgages,
whereas the retirement-aged ownership households were largely freed of that
burden.

Based on median **signed chi-square** $[X^2_s]$[4] calculations for the **Vancou-
ver CMA**, members of the the pre-retirement group were also more likely to live
in owner-occupied and single detached dwellings than the **65+** a group. This

finding was consistent with the **1974 SHU** results.

In order to determine the correlations among the major variables of interest from the **1981 Census of Canada** for the **Vancouver CMA**, the Census Tracts were ranked according to each variable and correlated using the Kendall Rank Correlation Coefficient **tau**. As expected, the census data indicate that there is a mutually positive correlation among single detached structural type, owner-occupancy, average (mean) houshold income and household expenses for households whose maintainer is 45 to 64 years old as well as for those whose maintainer is 65 years old or more. The most telling findings were that while the younger households in owner-occupied and single detached dwellings had more housing expenses than tenants and dwellers in multiple-unit buildings, the opposite was the case for the older households. In other words, those households which reached the retirement stage after having attained (presumably almost always mortgage-free) dwelling ownership were considerably less burdened with housing expenses during this period of lower income than those who still had to pay rent.

C. THE GUARANTEED INCOME SUPPLEMENT

The almost-universal national retirement pension system in Canada, called the **Old Age Security** program, is enhanced by the **Guaranteed Income Supplement**, which is given to **OAS** pensioners on the basis of an income test. The prevalence and amount of these **GIS** payments can be used as a measure of relative poverty among the retirement-aged population. Although lists of individual **OAS** and **OAS-GIS** pensioners are confidential, recent **OAS-GIS** data agglomerated at the national level and at the **Federal Electoral District (FED)** level for British Columbia were made available to the author for this study. (Health and Welfare Canada 1985; McKellar 1985a, 1985b, 1985c)

These figures were used in two ways. The male recipients of **maximum** GIS payments were designated as the 'poorest pensioners', and the **partial GIS** recipients were called the 'medium poor pensioners'. The twenty-eight **FED's** in the province were ranked by X^2_s and mapped for each both the 'poorest' and 'medium poor' measures. These are the principal findings:

The poorest male pensioners are most prevalent in northern and central

British Columbia and in the two inner-city FED's in Vancouver. They are least
prevalent in the rest of the **Vancouver CMA** and in all of the **Victoria CMA**. The
'medium poor' male pensioners are most common in south-central, southeastern
northeast British Columbia and in the Vancouver East FED, while this group is
least likely to be found in essentially the same FED's as the poorest group.

Since the telephone study area did not include the city of Vancouver
(see Chapter Two), the relatively poor male pensioners were less likely to be
included in the sample. Future researchers who wish to study a wider cross-
section of pensioners based on income in the Vancouver area therefore should
give careful attention to the study area selection, which should include the
city of Vancouver.

By this **Guaranteed Income Supplement** measure, poverty is less common
among British Columbian male pensioners than for all of Canada. Seven percent
of male B.C. pensioners received the **maximum GIS** in June, 1984, compared with
9% nationally. **Partial GIS** recipients were 32% of the B.C. male pensioners and
36% of those in the nation. Poverty these male pensioners is prevalent enough
to warrant attention among researchers and policy makers, but it is not an
overwhelming problem, as data from the telephone survey will support.

IV. ORGANIZATION OF THE THESIS

Following this introductory chapter, the thesis is organized as fol-
lows:

Chapter 2—**TELEPHONE SURVEY: A Methodological Introduction** describes
the population sampled and the procedures which were used for a telephone sur-
vey of a random sample of retired men who reside in a subarea of the Vancouver
Census Metropolitan Area. It also discusses certain methodological matters
such as non-response and interviewer bias.

Chapter 3—**DRAMATIS PERSONAE: A Profile of the Survey Respondents**
gives a socio-demographic overview of the survey respondents. Three indices
are constructed from these data: **income**, **career**, and a combined category, **so-
cio-economic status.** An innovative means of data presentation is used in this
and in subsequent chapters, namely 'data-rich histograms', which instead of
masking data by geometric representation, preserve the data by building geo-

metrically-meaningful shapes similar to standard histograms from the data themselves. Thus data which are usually buried in appendices in a work of this kind can be made available to the reader in the context of the discussion, but the histograms can also be read as shapes without regard to each data component.

Chapter 4—YESTERDAY'S ACTIVITIES: The Time Budgets of the Survey Respondents analyzes the activities of these retired men according to two major temporal criteria: duration and sequential pattern, and seven major classification schemes: taxonomy, simultaneity, work-leisure, mode of social intercourse, muscular motility, companions, and the most satisfying activity.

Chapter 5—YESTERDAY'S LOCATIONS: Social Space and Daily Time of Survey Respondents is conceptually a continuation of the pattern set in Chapter 4, but with the added spatial component. The data are analyzed according to the concepts of type of place, social tenure, and travel mode and distance. Then the data on the most satisfying activity are given a spatial dimension, and the three indices from Chapter 3, the four indices from Chapter 4 and the five indices from Chapter 5 are correlated and discussed. These same indices are then correlated with activity-limiting health categories.

Chapter 6—MOVING AND STAYING: The Dwelling History of Survey Respondents uses certain life-courses transitions or phases to delineate the housing history of respondents in comparable ways. These include the maximum household size period, the 'empty nest' period, the retirement period and the most recent residential move. Respondents are classified into four groups according to the interlacing relationships among these periods—the very stable group, the adaptively stable group, the empty nest pre-retirement movers, and the post-retirement movers. These four groups are used for systematic comparison based on the thirteen personal and activity indices which were developed in the previous three chapters.

Chapter 7—THE DOMESTIC NODE: Moving into and Living in the Current Dwelling examines physical aspects of the respondents' current dwelling, and perceived advantages and disadvantages of both the dwelling itself and its location. This information is then compared with the personal, activity and mobility variables developed in the previous four chapters.

Chapter 8—CONCLUSIONS AND IMPLICATIONS reviews the major findings of

the entire thesis and suggests implications for public policy and for future research.

[1]There is one exception. The city directories published by R. L. Polk & Co. Ltd. and its subsidiaries list 'retired' in their alphabetized name listings. As explained in more detail in Chapter Two, this source was used to select the sample frame for the telephone survey. However, the city directories remain unanalyzed archival sources from which spatially-definable data on the retired population could be garnered.

[2]Since hard data on retirement age is difficult to find, it is useful to anticipate the results from the telephone survey for this study: the modal age at retirement was 65 years (23 of 90 cases). The mean retirement age was 62 years with a standard deviation of 6 years and the median retirement age was 64 years.

[3]The abbreviation, 'a', from **annum**, will be used throughout this thesis to denote 'years' or 'years of age'. The year (presumably the Civil or Gregorian Calendar variety) is not an SI unit, but like angular degrees and degrees Celsius, is 'permitted for universal use' by the SI. (Council of Ministers of Education, Canada 1976: section 431)

[4]The **signed chi-square** measure was originally developed by Visvalinghan (1978; 1981) as an aid to mapping subpopulations agglomerated into small, but unequally sized and populated areas. A modified version, called the **signed chi-square with a floating national base** was developed by this author (Prior 1983). These measures are a compromise between raw subpopulation totals and percentages and are especially useful for identifying extreme deviations.

C H A P T E R   T W O
T E L E P H O N E   S U R V E Y :
A METHODOLOGICAL INTRODUCTION

I. CRITERIA FOR THE SELECTION OF THE STUDY AREA

In the development of this topic the original intention was to sample the coverage area of the two Polk directories (B. C. Directories 1983, 1984a, 1984b), which include all but nine of the 245 inhabited Census Tracts in the **1981 Vancouver Census Metropolitan Area**. As a result of the discussion following the thesis proposal to the Department of Geography, this was judged not to be possible and the study area was reduced to those areas mentioned in Chapter One and depicted on Map 1-1: parts of Surrey and West Vancouver and all of Burnaby, New Westminster and White Rock.

In the event, the reduction of the study area complicated the process of drawing a sample from the city directories because of the need to limit it to subareas which were not organized separately in the directories. In addition, the smaller study area had to be defined so that the important variables which were needed to address the basic questions of the thesis would still be present among the new population. An appropriate mixture of densities, incomes, levels of housing expenditure, tenures and structural types needed to be retained for a study area which would be smaller than the whole metropolitan area.

This study area was selected after an extensive examination of data from the **1981 Census** for the **Vancouver Census Metropolitan Area [CMA]**. Some of the results of that research were summarized in Chapter One. It was found that for most census variables which seemed to be relevant for the present study, the 'core area' of Burnaby and New Westminster included Census Tracts which appeared in all five quintiles of ranked **CT's** for the whole CMA. In addition, the city of White Rock and the surrounding part of south Surrey were included because of their large retired populations which are peripheral to the urbanized core of the **CMA**. Further, one Census Tract in the Dundarave-Hollyburn area of West Vancouver was chosen in order to include some high-income apartment dwellers in the sample. The study population is the non-institutionalized
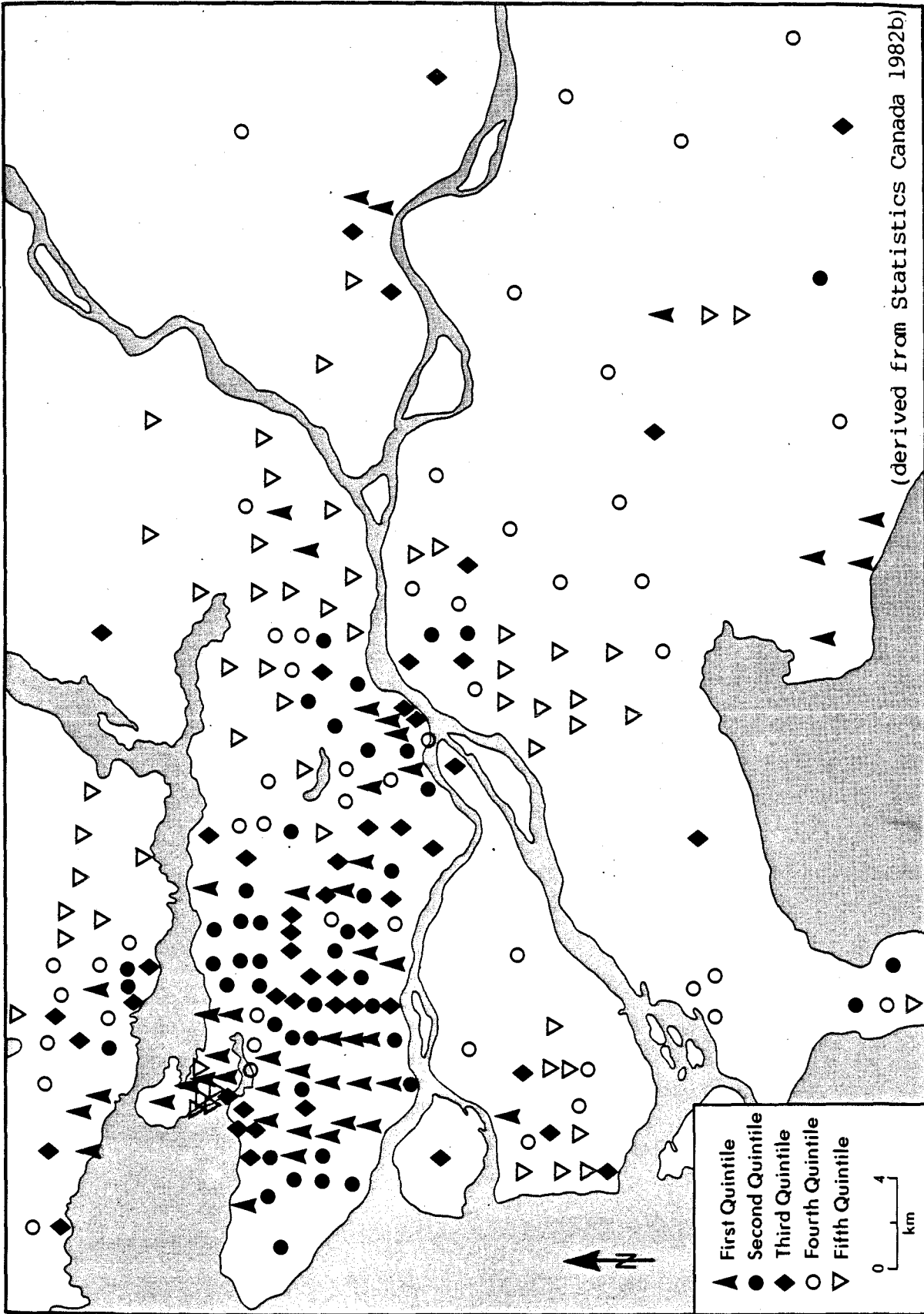
MAP 2-1: MALES AGED 65+ a IN VANCOUVER CMA CENSUS TRACTS RANKED BY X_s^2 QUINTILES

(derived from Statistics Canada 1982b)

First Quintile
Second Quintile
Third Quintile
Fourth Quintile
Fifth Quintile

male retired population residing in this three-part study area.

Different methods for determining relative regionalization of subpopulations within a metropolitan area have been discussed previously by this author. (Prior 1983) The most useful method to map the relative distribution of retired men in the **Vancouver CMA** is to use the surrogate of **65+** a, and to map the population at the Census Tract level with the **signed chi-squared** $[X_S^2]$ measure. Map 2-1 shows this distribution.

The marked clustering of this age group is obvious, with the City of Vancouver showing most prominently. Other important areas are in West Vancouver, New Westminster, parts of Burnaby and White Rock and the immediately surrounding Census Tracts in southwestern Surrey. There are noticeable concentrations of this population as well in Upper Lonsdale in North Vancouver City, the Minoru Park area of Richmond, Langley City, Haney, and the part of Coquitlam dominated by Riverview Hospital.

The final determination of the study area was made on the following bases: The two Census Tracts which make up White Rock City rank the very highest by X_S^2 for this age group in the whole **Census Metropolitan Area.** All of Burnaby and New Westminster were included to provide a wide variety of dwelling types and income levels which could be sampled within one contiguous region. The White Rock-southwestern Surrey area would combine a marked clustering of males **65+** a with the presence of mobile homes and other very economical ownership dwellings. Thus the only important variable which these two study areas would miss would be upper-income apartment dwellers. To ensure coverage of this variable too, a small part of West Vancouver was included which is predominantly high-rise apartments inhabited by people with high incomes, according to Census figures.

II. SAMPLE SELECTION

A. POLK DIRECTORIES

The best source of a reasonably complete list of retired people in Canada would be the recipients of **Old Age Security** pensions. This list is unavailable to non-government researchers in order to respect the privacy of **OAS** pensioners. In many urban areas across North America there is, however, one

other important source: city directories. Most of these city directories are
published by R. L. Polk Co. and its subsidiaries. Sidney Goldstein pointed out
some time ago (1954) that these directories are valuable primary resources for
demographic research. For the present study, the relevant Polk directories
were used to define the study population and to enable the researcher to con-
tact a sample of this population.

The study area is included in two directories (B. C. Directories 1983;
1984a). On the basis of previous studies on optimizing response rates in tele-
phone surveys with a mailed pre-contact letter (Dillman, Gallegos and Frey
1976), a goal of successfully interviewing about one hundred from an initial
selection of 300 people who appeared to be men (or at least who could not
obviously be identified as women) seemed reasonable. The gender of those in-
cluded in the directories is not always clear. Any who were easily identified
as women from their given name were of course eliminated. Those listed with
only initials and surname were included. (Almost all of those listed with ini-
tials in the Polk Directories in fact turned out to be women. This result
might prove useful to future researchers who wish to use Polk Directories to
contact women.) These people were listed as retired and lived within the study
area, but not at an address which had been previously identified as a residen-
tial institution. In order to achieve an initial balance, the **1981 Census** pop-
ulation of men aged 65 or more who lived within the study area in the region
covered by each directory was calculated, as follows:

TABLE 2-1
QUOTA ALLOCATION OF SAMPLE TO
TWO POLK DIRECTORIES FROM 1981 CENSUS DATA

| | MALES 65+ a | | QUOTA FOR |
	POPULATION	%	A SAMPLE OF 300
VANCOUVER CITY DIRECTORY:			
BURNABY	6 755	51.2	154
WEST VANCOUVER CT 130.01	510	3.9	12
SUBTOTAL	7 265	55.1	166
LOWER FRASER VALLEY DIRECTORY:			
NEW WESTMINSTER	2 635	20.0	60
WHITE ROCK	1 900	14.4	43
SURREY CT's 181.01 & 181.02	1 390	10.5	32
SUBTOTAL	5 925	44.9	135
TOTAL	13 190	100.0	301

(data derived from Statistics Canada 1982b; 1982d)

The subtotal quotas were used to determine how many potential respondents would be contacted from those listed in each Polk directory. To do this, a program was written by this author for the Hewlett-Packard 41CV calculator. The program selects randomly 1) a page number, 2) a column and 3) instructions to read the column from the top down or from the bottom up. The heart of the program is a pseudo-random number generator algorithm which produces a series of six-digit numbers between 0.000 000 and 0.999 999, as follows:

Where S_i is either any positive real number seed or the immediate past generated random number and S_{i+1} is the current random number between 0.000 000 and 0.999 999 and FRC is the fractional portion of the expression which follows it, then
$$S_{i+1} = FRC((9821 \times S_i) + 0.211\ 327).$$
(adapted from Kennedy 1981)

This program was used to select the quota from the white pages of each directory. A list of residential institutional addresses was drawn up to pre-

vent any of their residents from being selected. For Surrey and West Vancouver a list of streets and number ranges within the study area was prepared so that all outside of these areas could be eliminated. If no sample candidate was found in the selected column, the calculator program was re-initialized.

The telephone number for each selected entry was sought in the green pages of the city directory. If unavailable there, the telephone directory was consulted. If still unavailable, the previous city directory and the previous telephone directory were searched. In the cases where no telephone number was available, a substitute potential respondent was obtained by the same calculator selection technique.

B. LIMITATIONS OF THE POLK DIRECTORY METHOD

The use of city directories carries with it a few inherent limitations. First, any directory is an historical document. It is obsolete even before it goes to press. There is a time lag from the day when a B.C. Directories employee contacts a resident at the door or records data from the provincial Land Title Office until the day that the directory is delivered to its subscribers. Obviously, there is a continuous stream of residence changes during that period.

Furthermore, the publication of the directories is staggered in order to smooth out the work load for its publishers. The two directories which were used for this survey are therefore not synchronous. In fact, the **Lower Fraser Valley (Vancouver Suburban) Directory** (B.C. Directories 1983) was quite out of date, and was actually replaced by the new edition (B.C. Directories 1984b) just after the contact letters had been sent and the telephone survey was about to begin. The **Vancouver B.C. City Directory** was replaced by the 1985 edition in June. The suburban directories were thus published at 15-month intervals, whereas the Vancouver city directories appeared with an interval of 18 months. The bias which time-lagged data sources produce is to decrease the probability of sampling the most mobile segments of the population, and conversely to increase the probability of sampling the more stable segments.

III. SURVEY PROCEDURES

A. CONTACT LETTERS

It was judged essential to contact potential respondents by mail be-
fore attempting a telephone interview with them. Contacting people by tele-
phone without warning is often discouraged by committees reviewing the ethics
of research projects in a university setting. It is much more appropriate to
give people some reassurance in advance of a telephone call, and to give them
a chance to consider whether they wish to be interviewed or not. It has also
been demonstrated in an experiment in the State of Washington that a brief
letter on university stationery appears to decrease the refusal rate for a
telephone survey. (Dillman, Gallegos and Frey 1976: 74-77)[1]

A sample contact letter appears in Appendix A. There were actually
four different forms of the contact letter. Two types were sent to people
whose names indicated that they were men, with specific reference to the par-
ticular city directory from which their names were derived. The other two
types, which also referred to the appropriate city directory, were sent to
people whose gender was ambiguous from the listing. These forms added the fol-
lowing statement:

> There is no way to know without talking to you whe-
> ther the name listed as ' . . .   ' re-
> fers to a man or a woman. If you are a woman, please
> excuse me for sending you this letter unnecessarily.

The letters were produced by the mail-merge facility of the **Spellbin-
der Word Processing and Office Management System** (Lexisoft 1982), so that each
letter was individually produced on a daisy-wheel printer.

B. CONTROLLING FOR THE DAY OF THE WEEK

Since patterns of daily activity, even among retired men, were posited
to vary according to the day of the week, (Kinsley and Graves [1983]: 14-15)
each potential respondent was randomly assigned to a 'diary day' before being
telephoned. The same pseudo-random number generator mentioned above was used.
The use of a random sample was not so useful in this case. The result was to
over-represent Wednesdays (18.9%) over Sundays (10.9%). A systematic sample
which began on a random day and then simply went down the list of potential
respondents and assigned each day of the week to each in turn would have been
preferable.

C. THE TELEPHONE INTERVIEW

Each telephone interview required considerable simultaneous written
data recording. In order to facilitate this process, the Simon Fraser Univer-
sity Geography Department provided an operator-style telephone headset to al-
low a hands-free operation.

The telephone interview format was pre-tested with five completed in-
terviews in late August, 1984. Most of the interviews were completed during
September of the same year, and four were finished in October. Several men had
to be telephoned again in December to clarify a few items.

The interviews were projected to last about forty minutes each. In
fact they ranged from 22 to 98 minutes, with a mean of 57 minutes. It was
quite common for respondents to become very interested in talking about previ-
ous day's activity and other topics related to the survey which went beyond
the level of detail which was actually necessary for the survey. In some cas-
es, these extra comments were helpful to the researcher to clarify and amplify
topics of concern for the survey. In other cases, this extra interview time
was merely helpful in maintaining rapport with the respondent.

1. The Contact Form

A careful record was kept of the results of each telephone call on the
Contact Form, which is reproduced in Appendix B. The original forms include
some confidential information, such as names, addresses, telephone numbers and
former addresses of all potential respondents. Only the information which

could not be traced to an individual was entered on a **KnowledgeMan** data table.

All potential respondents were assigned a **respondent number**, which was used as a key identifier on all data tables for the telephone survey, so that data from any other table can be dynamically linked for analytical purposes. The **diary day code** contains the pre-selected day-of-the-week codes: Sunday = 1, Monday = 2, etc. The respondents were telephoned on the day of the week following this day. If they could not be contacted, the process was repeated the next week. A record was kept of each attempt in the **call record** section of the **Contact Form**.

An attempt was made to recruit three volunteer interviewers who were themselves retired. It was thought that they would have an empathy for the subject and also would be free to talk on the telephone during the day. The initial of their first name was to be used to identify them with an **interviewer** code. Two volunteers appeared for a lengthy training session. Twelve interviews were actually completed by one volunteer, but most of these respondents had to be telephoned again by the researcher in order to clarify some information which had not been specified on the survey forms. Seventy-nine interviews were carried out by the author. The administration of a properly-designed time budget survey is complicated enough that it requires close supervision of interviewers with little appropriate previous experience, (Kinsley and O'Donnell 1983: 24-25) and such supervision was not practical when volunteers had to do their telephoning at home away from direct contact with the principal investigator.

The **mail date** was the date when the letter was mailed to each potential respondent. Except for those potential respondents who were selected for the pre-test, and one repeat mailing to a man who, when telephoned, reported that he had not received a letter, all letters were mailed on Monday, 1984-08-27.

Sometimes the potential respondent was not available when telephoned, or was caught at an inconvenient time. In these cases, an appointment was sought for later that day or one or two weeks hence on the same day of the week, and noted on the **appointment record**.

The **Contact Form** was also used to record certain dwelling addresses which were elicited in the **Housing History** section of the interview, which is
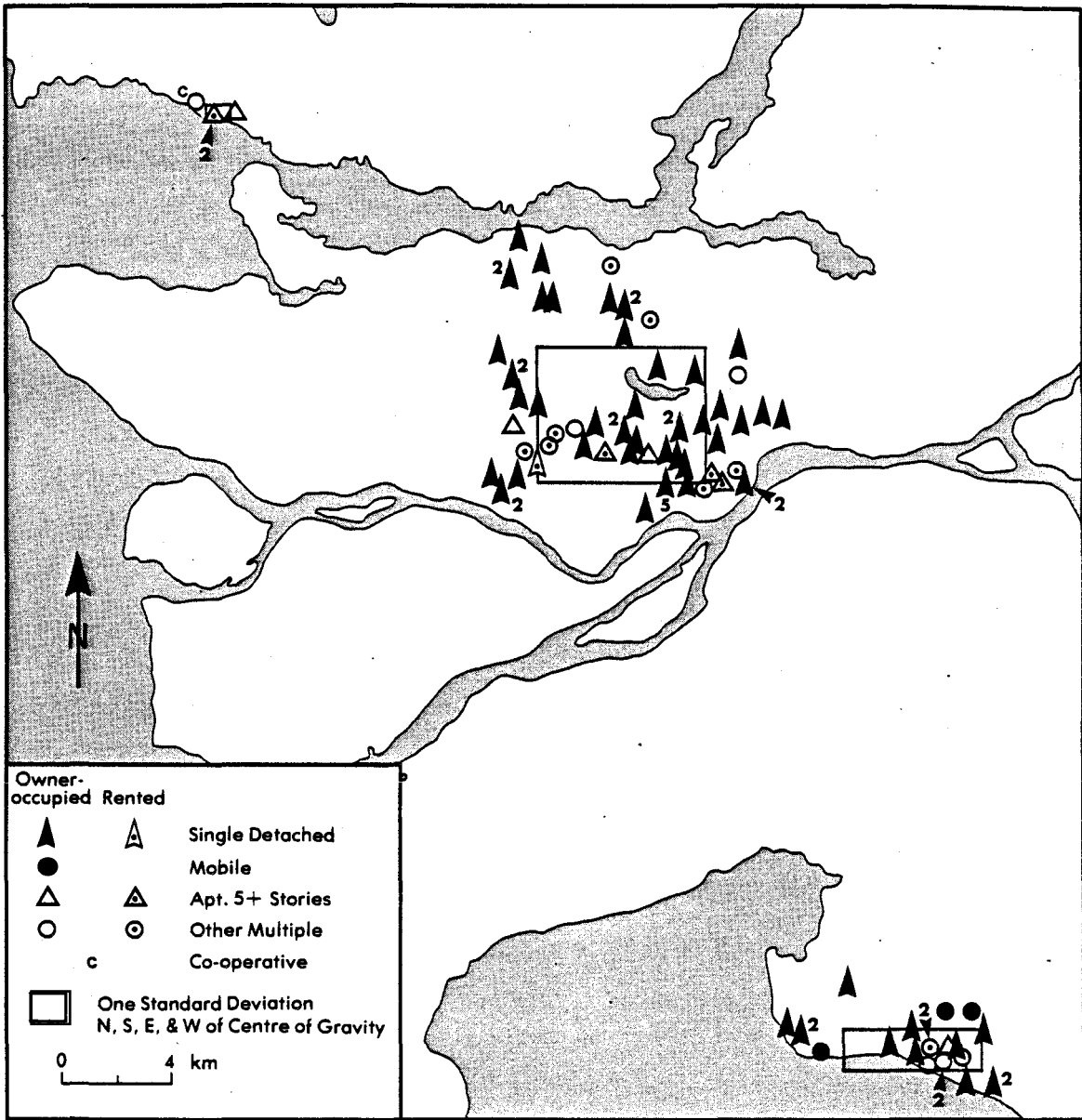
MAP 2-2

DWELLING LOCATIONS OF RESPONDENTS BY STRUCTURAL TYPE AND TENURE WITH
STANDARD DEVIATIONAL RECTANGLES CENTRED ON THE REGIONAL MEAN POINTS

described later. Since this information is confidential and could identify an individual respondent, it was recorded on the **Contact Form** to facilitate guarding the privacy of men who cooperated with the survey.

2. Response Results

A key to the **result codes** was included on the **Contact Forms**, so that they could be coded during the telephoning process. If more than one attempt was made to contact the potential respondent, the intermediate result codes were recorded on the **Contact Forms**, but only the final **result code** was entered on the computer data table and used for the following summary.

The dwelling locations of the 91 respondents are depicted in Map 2-2. Other data on the map are discussed in more detail later in this chapter and in Chapters Nine and Ten. Of the original 301 potential respondents, 19 were reported deceased by someone answering the telephone, and 87 were not qualified for the study. These latter included females, men who were not retired, men who were too ill to be interviewed (and therefore could not meet a basic self-defined health requirement), and men who were no longer living in the study area.

TABLE 2-2
FINAL RESPONSE RESULTS OF THE TELEPHONE SURVEY

Total Letters Sent [L]	**301**
Qualification Problems [Q]	87
Deceased [D]	19
Maximum Possible Qualified Men [M = L − (Q+D)]	**195**
Interviews Completed [I]	**91**
No Answer	4
Line Busy	0
Number Not in Service	7
Wrong Number	3
Total Telephone Problems [T]	**14**
Not Available when Telephoned	0
Not Available on Any Day after Assigned Diary Day	3
Too Deaf to Converse Adequately on Telephone	10
Unable to Converse Adequately in English	4
Letter Returned by Canada Post	4
Total Contact Problems [C]	**21**
Refused to be Interviewed	61
Interview Incomplete: Respondent Refused to Continue	1
Interview Refusal Communicated by Another Person	7
Total Refusal Problems [R]	**69**

The question of defining response rates can be vexing. The biggest difficulty is estimating the unqualified people from among those who could not be contacted or about whom too little is known to ascertain whether they are qualified or not. Wiseman and Billington have proposed a solution (1984: 337) whereby the nonrespondents whose qualification status is unknown are adjusted downward by the same proportion as the respondents divided by the respondents plus the known unqualified people in the original sample.

By the most straightforward method, the response rate was simply the number of completed interviews divided by the maximum possible qualified men:

$$I / M = 46.7\%$$

Adapting the Wiseman-Billington method increases this rate as follows:

$$I/(I+(I/(I+Q+D) \times (T+C+R))) = 65.4\%$$

This calculation appears to be too high in the present case. For this study, care was taken in most cases of refusal to determine whether the person was a retired man who was still living in the study area and whose reason for refusal was not illness. It would be wiser, therefore, to subject only the telephone and contact problems to the Wiseman-Billington adjustment:

$$I/(I+R+(I/(I+Q+D) \times (T+C))) = 51.7\%$$

This more conservative estimated response rate of 51.7% is most likely the appropriate figure for this telephone survey.

D. NON-RESPONSE BIAS

The decision to try to contact all randomly-selected potential respondents whose gender was ambiguous was made in order to be sure not to systematically factor out men who might habitually use their initials in directory listings. As it turned out, only three such men actually completed interviews. Almost all of the people so listed turned out to be women, so the precaution was not necessary. Since these women were not qualified, their inclusion merely made the sampling process less efficient. It did not introduce any sampling bias. The occurrence of deceased men among the original sample was of course expected for a retired population.

1. Interview Day of the Week

It is never possible, of course, to discover all the significant ways in which the respondents differ from non-respondents, and therefore to know for certain how the absence of non-respondents affects our knowledge about the population. A few things are known about both respondents and non-respondents. One is the **diary day,** and, of course, the day of the week on which the telephone calls were made to that man. These data are shown on the following table.

TABLE 2-3
NUMBER OF RESPONDENTS AND NON-RESPONDENTS
BY DIARY DAY AND DAY OF WEEK TELEPHONED

DIARY DAY	DAY TELEPHONED	RESPONDENTS	NON-RESPONDENTS
Sunday	Monday	14	15
Monday	Tuesday	14	15
Tuesday	Wednesday	12	17
Wednesday	Thursday	23	15
Thursday	Friday	13	14
Friday	Saturday	7	16
Saturday	Sunday	8	12

There is no significant difference between the two groups when day of the week is considered. (x^2 = 6.13; **df** = 6; C_c = 0.17; **Q** = 0.41; Goodman-Kruskal **tau** = 0.0058) If the most extreme differences are compared, namely Wednesday diary day and Friday and Saturday diary days combined, there is a significant difference between the two groups, but the degree of difference is still relatively minor. (x^2 = 5.33; **df** = 1; C_c = 0.25; **Q** = 0.02; Goodman-Kruskal **tau** = 0.0658) Since the Friday and Saturday conversations took place on Saturday and Sunday, respectively, the data appear to indicate more difficulty in successfully interviewing retired men on the weekend than on Thursdays. Comparing all weekdays with the weekend, however, the difference between respondents and non-respondents is considerably less significant. (x^2 = 3.08; **df** = 1; C_c = 0.12; **Q** = 0.08; Goodman-Kruskal **tau** = 0.0158) In brief, there appears to be very little difference between the respondent and the qualified non-respondent groups according to the day on which the telephone call was made.

2. Interviewers

For some of the original 301 names selected, no interview attempt was

made. These included four whose letters were returned by Canada Post and twelve people who contacted the Simon Fraser University Geography Department office to say that they did not wish to be interviewed. One volunteer received one refusal before the interviewer withdrew from the project. The other volunteer interviewer was more successful. It is useful to know whether there was a different pattern of completed interviews versus refusals from those among the sample who were telephoned by different interviewers. The next table shows these results:

TABLE 2-4
COMPLETED INTERVIEWS VERSUS REFUSALS FOR DIFFERENT INTERVIEWERS

	COMPLETED INTERVIEWS	REFUSALS
Volunteer Interviewers	12	16
Researcher	79	41

The higher completion rate for those retired men interviewed by the researcher is significant. (x^2 = 5.06; df = 1; C_c = 0.18; Q = 0.02; Goodman-Kruskal **tau** = 0.0342) However, the total number of refusals which were made to the volunteers was small enough that only about six more interviews would have been completed by the volunteers had the rates of the interviewers been the same.

3. Location

For this study, it is crucial that the geographical distribution of the sample not be materially affected by the non-response bias. One way to measure the distribution of the respondents and the non-respondents is to analyse their distribution among the five municipalities in the study area. These figures are given in the following table.

TABLE 2-5
THE DISTRIBUTION OF RESPONDENTS AND NON-RESPONDENTS
IN FIVE MUNICIPALITIES

	RESPONDENTS	NON-RESPONDENTS
West Vancouver	4	5
White Rock	12	10
Surrey	10	11
New Westminster	18	24
Burnaby	47	54

The respondents and non-respondents are virtually identical with respect to their distribution among the five municipalities. (x^2 = 0.82; df = 4; C_c = 0.06; Q = 0.94; Goodman-Kruskal tau = 0.0009) At this level, any geographical bias is therefore entirely negligible.

Another way of comparing the geographical distribution of the respondents and the non-respondents is to examine the specific locations of their dwellings. In order to preserve the privacy of individual respondents, the population centroids defined by Statistics Canada (1981) for 1981 Enumeration Areas are used. The Universal Transverse Mercator (UTM) grid coordinates were rounded to the nearest 100 metres. For purposes of a spatial analysis, the study area can be divided into three regions: West Vancouver CT 130.01, Burnaby-New Westminster and White Rock-Southwestern Surrey. The **centre of gravity** of the distributions has been determined by calculating the arithmetic mean of the UTM **eastings** and **northings** of all of the appropriate dwellings within each of the three regions. Similarly **standard deviations** of the northings and eastings have been calculated to indicate the amount of dispersion along these dimensions. The next table gives these results.

TABLE 2-6
CENTRE OF GRAVITY AND STANDARD DEVIATIONS OF DWELLING LOCATIONS
OF RESPONDENTS AND NON-RESPONDENTS IN THREE REGIONS OF THE STUDY AREA

	UTM EASTING	STANDARD DEVIATION	UTM NORTHING	STANDARD DEVIATION
West Vancouver CT 130.01				
Respondents	4879	0.3 km	54639	0.2 km
Non-Respondents	4879	0.3 km	54639	0.2 km
Burnaby-New Westminster				
Respondents	5029	2.7 km	54534	2.7 km
Non-Respondents	5029	3.0 km	54530	2.7 km
Southwestern Surrey-White Rock				
Respondents	5134	2.3 km	54306	0.7 km
Non-Respondents	5138	2.0 km	54311	1.0 km

The results are identical for West Vancouver. In Burnaby-New Westminster the centre of gravity of non-respondents is only 400 m south of that for respondents, and the dispersion measures are very close to conterminous. In Southwestern Surrey-White Rock the centre of gravity for the non-respondent group is 640 m northeast of the centre of gravity for the respondents. As with
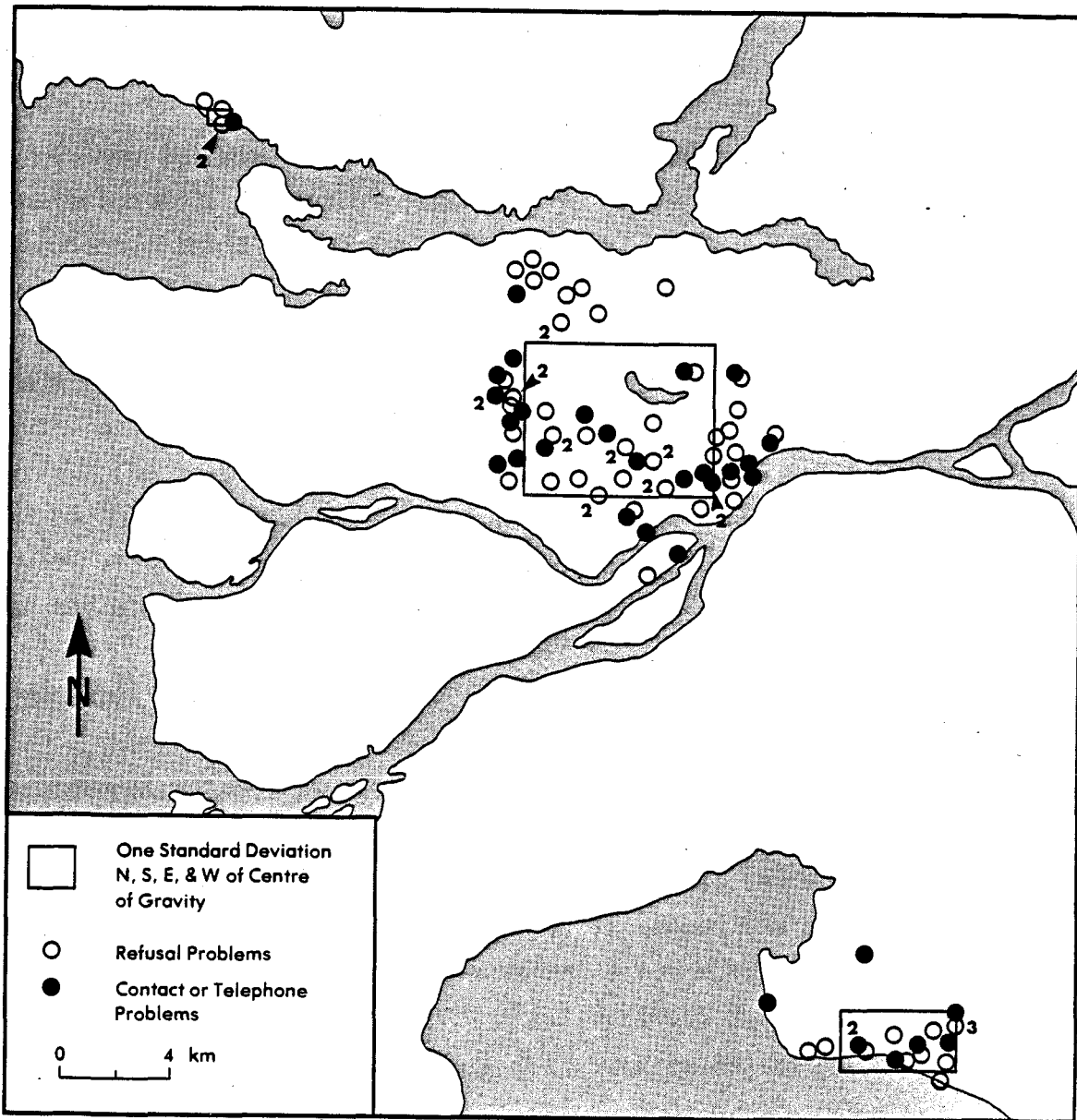
MAP 2-3

DWELLING LOCATIONS OF APPARENTLY-QUALIFIED NON-RESPONDENTS BY NON-RESPONSE
REASON WITH STANDARD DEVIATIONAL RECTANGLES CENTRED ON REGIONAL MEAN POINTS

the figures comparing the two groups in the five municipalities, these differ-
ences are minimal. There is therefore no evidence of any significant differ-
ence between the geographical location of non-respondent and respondent dwell-
lings.

Map 2-3 shows the dwelling locations, according to their **1981 Census
Enumeration Area** population centroids, of the apparently qualified non-
respondents. Standard deviational rectangles for each of the survey area reg-
ions are included to allow visual comparison with those for respondents, shown
in Map 2-2. The rectangles outline the distances which are, respectively, one
standard deviation north, south, east and west of the mean point or centre of
gravity of the distribution of the residence **EA** centroids. For cartographic
clarity, the mean point is not indicated on the two maps, but can be visual-
ized as the intersection of the diagonals of each standard deviational rec-
tangle. Visual comparison of the two maps confirms that the differences bet-
ween the distributions are minuscule.

D. THE TIME BUDGET FORM

The time budget portion was the first part of the telephone survey
administered to each respondent. This order was felt to be important. These
time budgets are the conceptual core of the telephone survey stage of this
thesis project. Eliciting the time budget was also the most time-consuming
part of most interviews. Once completed, it imbued the interview with pacing
and gave respondents a justifiable sense of accomplishment for having remem-
bered a great deal of detail about their activities on the previous day. The
time budget query method was designed to conform to standards which have been
developed among social scientists in Canada and in many other parts of the
world. (Szalai 1972; Ås 1982; Kim and Oh 1982; Harvey, Elliott and Stone
1977) The **time budget form**, given in Appendix C, was to a major degree pat-
terned after that used for the **1981 Canadian Time Use Pilot Study** (Kinsley and
O'Donnell 1983), with some useful additions borrowed from Susan Shaw (1982),
and with major adaptations to conform with the purposes of the present study.

1. Episodes

After preliminaries which are detailed in the **instructions** section of
Appendix C, the **time budget form** was used to record the data on paper while
the interview was underway. The original form was produced by mimeograph on
both sides of a single sheet. The obverse side of one form was used to record
the data for each **episode.** An **episode** is a specified period of time during
which the respondent reported that he was engaged in one particular activity
or one particular set of more than one activity. For example, eating dinner
while watching TV news from 1800 to 1900 hours would be recorded as one epi-
sode. Washing dishes from 1900 to 1915 would be another episode. Waiting for a
bus at a given intersection from 1000 to 1005 would be one episode. Riding it
to a shopping centre from 1005 to 1015 would be another episode. When all of
the episodes for the diary day were recorded on separate time budget forms,
the reverse side of the last form was used to record responses to its ques-
tions.

2. Data Management

The time budget form was constructed so that the information could be
coded and transferred to a computer data base as efficiently as possible. The
respondent number is the key field by which the time budget data can be tied
to all other recorded survey information. The **diary date** and **diary day code,**
which are also common to the **contact form,** were included to allow for a data
quality check based on redundancy. Questions **a** through **f** on the time budget
form were intended to follow the introductory remarks of the **instructions,** and
then the queries about the previous episode.

3. Time and Place

Each episode has a **start time** and an **end time.** The same 24-hour system
used in the 1981 Candian Time Use Pilot Study was used. Episodes were elicited
from 4:00 a.m. (**0400**) 'yesterday' to 4:00 a.m. (**2800**) 'today'. This modified
day made it much easier to capture a whole day as actually experienced by most
people, who may stay awake beyond midnight. The extension of the standard 24-
hour numerical designations beyond **2400** was made to simplify the calculation
of activity duration.

The recorded descriptions of locations were later translated into **Federal Electoral Districts (FED's)** and **Enumeration Areas (EA's)** and thence into UTM coordinates of EA population centroids. Since the **1981 Census Enumeration Areas** were subsets of **Federal Electoral Districts** in Canada, the parent **FED** had to be specified in order to designate a unique **EA**. In fact, each episode had beginning and ending UTM coordinates entered into the computer data base, just as it also had a **start time** and an **end time**. The start time and the beginning UTM coordinates had to coincide with the end time and the ending UTM coordinates of the previous episode. Obviously, if the episode involved no major change of location, the beginning and ending UTM coordinates were the same.

The inclusion of the UTM coordinates is an important addition in this survey to the kind of data collected for the **1981 Canadian Time Use Pilot Study.** Since the UTM coordinates can, within one UTM zone, be treated as simple Cartesian coordinates, a comprehensive quantitative description of time and space characteristics of activities is possible.

4. Shared Activities

Activities which were shared with other people were differentiated by the response to question **e: Who was with you?** OR **Were you still with ... ?** The **companion** information was written on the form, and if its coding was unambiguous, then no further details about the companion were elicited. For example, the respondent's wife was normally designated under **companion coding** as **WSF1.** In other words her relationship to the respondent was **wife,** her generation was the **same generation as respondent** by default irrespective of her age, her sex was **female** and, if she had been the only person who shared the episode with the respondent, she would count as one (1) person. However, if the companion was described as a **friend,** then more questions had to be asked to determine the person's generation and sex.

5. Changing Location

If an episode involved a **significant change of location,** such as from one building to another, then the means of transit was specified by the **transit code.** Most often, such significant change is also reflected by a change

between the beginning and ending UTM coordinates. There were a few exceptions.
If a respondent went on a walk which had no specific destination, then the
transit code for that episode would be P [pedestrian], but its UTM coordinates
would remain the same. On other occasions, he might travel from one place to
another **within** the same Enumeration Area, in which case coordinates of the
representative EA population centroid would be unchanged.

6. Taxonomic Activity Classification

The three-digit numerical activity classification system called the
international coding system is derived from an effort by numerous scholars
loosely grouped together by the International Research Group on Time Budgets
and Social Activities (Szalai 1972; Staikov 1982). The system includes ten ma-
jor classifications, shown on the following table.

TABLE 2-7
OUTLINE OF THE INTERNATIONAL ACTIVITY CODING SCHEME

NUMBER RANGE	ACTIVITY GROUP
000's	employed work
100's	domestic work
200's	child care
300's	shopping
400's	sleeping, eating and personal care
500's	school and education
600's	organizations, religion and volunteer work
700's	entertainment out-of-home
800's	participatory leisure
900's	media and passive leisure

(derived from Kinsley and O'Donnell 1983: 200-211)

Except for a few additions noted in Appendix C, the International Coding
Scheme used in the **1981 Canadian Time Use Pilot Study** was the standard for the
this study. The data collected for this study can therefore be directly com-
pared with the data from many other past and future time budget surveys.

7. Perceptual-Functional Activity Classification

In addition to the International Scheme, a new classification scheme
was tailored for this study, called **perceptual-functional coding**. This is a
modified version of the scheme presented by the author at the World Congress
of Sociology in Mexico City. (Prior 1982) It was designed as a system of dis-
criminant variables which would make it possible to compare activities which

the taxonomic classification system differentiates only by its simple dendritic structure. Although a somewhat similar classification system has been used by others, (Clark, Elliott and Harvey 1982) this sort of scheme lends itself best to a unique formulation based on the particular focus of a given study. In practice, the analysis of the time budget data compares the **taxonomic** and the **perceptual-functional** schemes in some detail.

The classification of activities by **mode of social intercourse** [**SOC/IN**] is based essentially on communication paths. An activity is termed **introspective** if it requires no communication from another person. Both creative writing and landscape painting fall into this category. A **receptive** activity requires some initiation of communication by one party, but no feedback from the subject. Reading and watching television are two examples of receptive activity. **Interactive** activity requires at least one other person actively participating, and therefore communicating with the subject, so that their behaviour is interdependent. The sub-classification of interactive activity into **competitive** and **co-operative** types is borrowed from a game-theoretic concept of competitive and co-operative components of non-zero-sum games, or pure competition in zero-sum games. (Rapoport 1966) Although the concepts of **competitive** and **co-operative** activities come from game theory, this study makes no attempt to subject the time budget data to a game theoretic analysis.

Muscular motility [**MOT**], is an ordinal-scale measure of the relative amount of physical effort which a given activity required. In most cases, the coding was done after the interview, but where there might be some ambiguity, the respondent was queried directly. For example, gardening might require either a moderate or vigorous exercise of muscles, so the respondent was asked for more detail.

The **social tenure of space required** [**TEN**] for the activity is a more complex variable. Unlike legal tenure over property, which is a function of ownership and economic relations, the key to **social tenure** is control over access. The social tenure over a given space may, and often does, change over time depending upon activity which is taking place within that space. **Private space** is space which at a given moment is completely controlled and solely occupied by one individual. Thus, a rented apartment occupied by a single tenant constitutes private social tenure space, as does the interior of a private

automobile with one occupant, even while travelling on a public highway. An extreme example will further clarify the meaning of this concept. If a person in a hotel room is being subjected to offensive sounds from somewhere else in the hotel, then that invaded space can no longer be considered **private** because while the invasion is occurring, the occupant no longer has complete control over the space. Similarly, the social tenure of space over which a group of people currently has control, whether by means of ownership or usufruct, is called **group space**. A living room or a private clubhouse occupied by more than one person are obvious examples, but so is a tennis court in a public park with a game in progress. The category, **public space**, is space where there is no effective barrier for another person from the general public to use the space. In the telephone survey it was sometimes necessary to determine the applicable type of social tenure of the space in which the activity took place. For example, if the respondent said he was swimming in a municipal pool, he would have been asked whether he was swimming during open hours at the pool, in which case the pool would be called public space, or whether he was swimming with a particular group, such as an aquatic aerobic class, which had a reserved period in the pool. In that case, the pool would be called group space. In brief, the **'social tenure of space required for an activity'** may be defined as: the control status which a given individual, group or the general public hold of a particular space at a particular time.

The immediate environment of the activity is designated by the **indoors/outdoors** variable. This dimension is needed in order to describe the activity relative to the respondent's dwelling as well as to indicate its ambience as **indoors, outdoors** or **both.** If the activity took place within or closely associated with the dwelling, then there is much more differentiation within this classification scheme. In order to elicit the data necessary for this dimension, it was often necessary to probe respondents for more detail, especially about where in their dwelling the activity took place.

The **work-leisure [WRK/LE]** dimension was patterned after Shaw's study on gender differentiation in leisure activities.(1982: 288-289) The work-leisure variable was the only one within the perceptual-functional coding scheme which was exclusively derived from the respondent's own perception. Although the task was not entirely open-ended, the intent of the exercise was to elicit information which was essentially inductive. It was quite common for respondents to ask the interviewer, "What do you mean by 'leisure'?" or "Well, what would YOU call it?". These queries had to be handled diplomatically, but in such a way that the respondent understood that it was **his** definition which was important. The work-leisure coding was fairly challenging for some informants, but it was helpful that they were asked about it after they had already gone through the process of recalling their yesterday's activities. The recapitulation produced a useful review. Sometimes the informant was able to revise his chronology slightly during this second run-through; the interviewer was also given a second chance to look for possible gaps in the time budget.

Automobile travel by one person is an especially informative example of how the **perceptual-functional coding** works. Such an activity would be classified as **interactive and co-operative** [with other anonymous drivers, even though the companion coding would designate **no companion recorded**], **requiring moderate exercise of muscles,** while the driver is occupying **private space** which is **indoors** and **away from the dwelling.** The classification on the **work-leisure** dimension of course varied among respondents.

8. Satisfaction and Typicality Coding

A standard time budget survey allows researchers the ability to quantify the use of time by such measures as duration by clock time or number of episodes. Unmodified, it gives no indication of the **quality** of time use. A simple means of highlighting time which was especially meaningful to the respondents was to ask them question **g: Thinking back over the whole day, yesterday, which activity did you find most satisfying?** The question was formulated with great care. The intent was to steer respondents away from an automatic hedonistic evaluation of their activities, which a question about the **best** or **happiest** or **most pleasant** activity might have elicited. The question preceded the one about the **work-leisure** classification, and was intended to re-

veal a completely different aspect of the day's activities.

It has already been mentioned that there is an important assumption behind any 24-hour time budget survey that a great deal can be learned about a respondent's general life pattern, and certainly about the life pattern of a whole population, by examining one day in each respondent's life. It is the view of this author that there are indeed patterns in people's daily lives which **any** sample day will reveal in a time budget survey and of which survey respondents are seldom aware. For example, it is unlikely that most people are aware of how much they actually watch television.

Nevertheless, it was thought useful to allow the respondents to evaluate the typicality of their activities on their diary day **in comparison with the same day of the week for the previous four weeks.** By making the comparison that specific, the respondents were not being asked to make frank judgements about the quality of their whole lives. In addition, this formulation probably elicited more realistic judgements than a more general typicality question might have.

9. Transit Strike Coding

A special circumstance intruded on this particular time budget survey. The Metro Transit Operating Co., which serves most of metropolitan Vancouver, was not operating the bus and sea-bus system from 1984-06-15 through 1984-09-17 because its dispute with its unionized employees had reached the strike-lockout phase. Part of the survey took place while the transit system was not operating, and part of the survey continued after service resumed. The circumstance could not be avoided, but its presence had to be taken into account. A qualifying question was used to ascertain whether the respondent had been an habitual transit rider and a control question determined the sort of effect the strike-lockout actually had on the respondent's activities on the diary day.

10. Location or Housing Type Activity Limitation Coding

Since this study focuses on the relationship between housing and activity, it was important to include in the survey questions which controlled for the possible inability of respondents to pursue desired activities because

of perceived negative housing and location characteristics. (See Appendix C.)
The question also provided a natural bridge to the housing questions.

11. Simultaneous Activities

It is a common practice in modern time budget surveys to record more
than one activity that a person is carrying out simultaneously. For example,
the respondent may carry on a conversation while eating a meal with someone
else, or listen to the radio while driving a car. This survey had a capacity
for recording three simultaneous activities in a single episode.[2] The line of
questioning encouraged respondents to think about instances when they were do-
ing more than one thing at once. In the case of two simultaneous activities,
the second named or the activity which was clearly secondary in importance
during a given **episode** was designated **ACTIVITY 2** on the **TIME BUDGET FORM.**
These activities are called **secondary activities** in the subsequent analysis.
When three simultaneous activities were mentioned, the third activity was re-
corded as **ACTIVITY 3** and called a **tertiary activity** in later analysis.

E. THE HOUSING HISTORY FORM

A great deal about the present housing situation of retired men can be
affected by the circumstances in their lives which had important impacts on
their earlier housing decisions. Some of them may be living in the same house
which they have occupied for many years. Others may have moved frequently. A
general survey of retired men results in interviewing men at different phases
of their retirement years. It therefore makes no sense to ask a question such
as "Where were you living 10 years ago?". The responses to such a question
would be difficult to analyse without the context of other circumstances of
their lives available.

The **housing history** part of the telephone survey was designed to cap-
ture the respondents' histories relative to postulated major events which
would probably affect their housing needs. The strategy was to elicit some
basic information about the timing of important life events, housing location
and type, settlement type and, where relevant, commuting to work.

1. Period of Maximum Household Size

Logically, the period during which a person's neolocal household is largest is the time when there is the highest demand for housing space. The responses to this increased demand may range from tolerating the increased density, to physically expanding the existing house (Evenden 1983), to moving to a larger dwelling. Respondents were therefore asked, "...during what period of time [ELICIT YEAR RANGE] did your own household have the largest number of members? How many people were in your household during that period?" The chronology of the beginning and end of this period, the maximum household size, and the housing characteristics during the last year form important baselines for this study.

2. The 'Empty Nest'

In many households of currently retired men, the children have left to form their own households, conforming to the Canadian norm of a neolocal residence pattern. Assuming some lag effect, (Flowerdew 1978) the housing data for the year following the time when the last dependent child began living elsewhere is used to obtain basic housing data. The assumption is that after the nest is empty, some households may wish to change dwellings, since the dwelling may now be viewed as too large. Other factors, such as attachment to the dwelling, long-established relationships with neighbours and neighbourhood institutions and amenities may discourage such a move for some households.

3. After Retirement

Some people move to their 'retirement' dwelling before actually retiring, but in conscious anticipation of their retirement years. Others may move only after their actual retirement. In this survey, a possible lag effect is postulated, and the men are asked for details about their housing situation 12 months after they retired. (Since there is a built-in time lag in identifying retired people in the Polk Directories, it is unlikely that men would be selected for this survey who had been retired less than one year.) For this life-course stage, an actual address is requested, which is recorded on the **confidential contact form.** This address is used to obtain UTM coordinates for those 1981 Census Enumeration Area population centroids lying within UTM Zone

10, which includes all of British Columbia between 120° W and 126° W. Western Washington, western Oregon and northern California are also within Zone 10, so locations in that part of the United States could also be accommodated.

4. Immediate Past Dwelling

The same information is obtained for the dwelling in which the respondent was living immediately before his current dwelling. The year of that move is actually recorded on the **current dwelling form,** and can, of course, vary greatly.

F. CURRENT DWELLING FORM

The **current dwelling form and coding scheme** is shown in Appendix E. The **current dwelling form** was designed to elicit basic structural and tenure information about each respondent's current dwelling, but also more detail which might be helpful in understanding his pattern of daily activity.

The coding of the general dwelling description and the functional structure of each of the rooms in the dwelling was formulated **post hoc.** In other words, the descriptions elicited from the respondents about the whole dwelling and each room were recorded on the form in words which matched their own as closely as possible. For example, a 'front room' for one respondent may have been the 'living room' for another. Although these were eventually coded as the same type of room, the distinctive terms were retained on the handwritten forms. Only later were these descriptions divided into coded categories for entry into the computer data base. Similarly, each respondent was asked to give advantages and disadvantages of both his **dwelling location** and the **dwelling itself without regard to its location,** as well as the **most important reasons he moved** from his last dwelling to his present one. Again, these responses were coded **post hoc.**

G. GENERAL INFORMATION FORM

General demographic and socio-economic questions were left to the last in the survey. This was done deliberately. Respondents are sometimes reluctant to answer these sorts of questions if asked in isolation, but in the context of a survey whose major purpose is on a different topic, respondents are al-

most always more willing to answer them. The **general information form and coding scheme** is found in Appendix F.

1. Origins

The place of birth and mother tongue were elicited in order to yield some rudimentary information about ethnic or cultural origin. The wording of the mother tongue question was taken directly from the **1981 Census of Canada**. The **birth year** was elicited rather than age in years to promote accuracy. It is usually easier for people to remember their birth year, which is constant, than their current age.

2. Household Membership

Very simple information about the household membership was also sought. The coding is similar to the **companion** coding scheme from the **time budget form**. Most of the information was known to the interviewer after having previously carried out the time budget portion of the survey.

3. Health Status

A survey about behaviour among retired people must include some control for health status. After careful consideration in consultation with Dr. Gloria Gutman, Director, The Gerontology Research Centre, Simon Fraser University, the author concluded that the best strategy for obtaining this information was to tie health status directly to the two foci of this study: housing and daily activities.

4. Income

Three aspects of income were covered by this survey. The first aspect is **income adequacy**. An excellent set of questions on income adequacy was used for the 1958 Minnesota Consumership Study, (Hill 1968: 292) which was borrowed directly for this survey. Perceived needs probably vary considerably, so an income adequacy measurement is a useful check on the more standard quantitative query.

The second aspect of income was the respondents' estimate of the class-range of income for their household before taxes during the year 1983.

It was decided that a few income ranges would suffice for the purposes of this study. The relative distribution of household income from the 1981 Census for the study area was used as a rough guide to determine the break-points between categories. The questions [1] were formulated so that three branching questions isolated which of six income classes matched the respondent's household.

With question [m] the **source** of personal income was the third aspect of income queried. The technique has been used (Forward 1982) as a supplement to functional classification to differentiate urban areas. In the present study, income sources are used as a quality check on the other income data and as a retirement qualification. If the respondent's current principal income source is employment income, then he will not be classified for purposes of this study as 'retired' if, in answer to the follow-up question [n], he averaged more than nine hours of paid work during all of 1984.

5. Former Occupation and Formal Education

Classification of occupations can sometimes be complex. Therefore, the survey asks for information about both the **industry or field** as well as the **specific job** of each respondent's former occupation. These were then coded by standard Government of Canada numerical classification systems. (Manpower and Immigration 1971; Statistics Canada 1980e)

Formal education is defined in this study by the number of years of schooling completed and the highest diploma, certificate or degree attained.

CHAPTER TWO FOOTNOTES

[1]The research literature on increasing response rates for telephone surveys appears to be quite thin. (O'Niel 1979: 218-219, n. 1; Dillman, Gallegos and Frey 1976) There is an unpublished master's thesis from Washington State University in Pullman, Washington by Jean G. Gallegos, titled **An Experiment in Maximizing Response to Telephone Interviews Through the Use of a Preliminary Letter, Based on Principles of Exchange Theory,** (Dillman, Gallegos and Frey 1976: 69, n. 11) but the document was unavailable for this study.

[2]The original questionnaire design allowed for one tertiary, one secondary and two simultaneous primary activities, for situations where it was not clear which one of two simultaneous activities was primary. This was the same scheme which was used for the **1981 Canadian Time Use Pilot Study.** (Kinsley and O'Donnell 1983: 19) Unfortunately the data which were collected were not always consistent with this framework, so they were converted into the simple primary, secondary and tertiary activity categories.

C H A P T E R   T H R E E
D R A M A T I S   P E R S O N A E :
A PROFILE OF THE SURVEY RESPONDENTS

A great deal of attention was given in the telephone survey to the
activities of respondents. These men can be seen as 'actors' whose centre
stage is their dwelling, and whose wider field of action is best understood
relative to that home base. The activities and the dwellings of these retired
men will be treated in detail in Chapters Four through Seven.

In the present chapter, some of the personal characteristics of the
men are examined. This process will require a degree of objectification.
Whenever social scientists make general statements about a group of people,
they necessarily must set aside some of the uniqueness, and perhaps even some
of the dignity, of the individuals who make up that group. Part of the need
for such a procedure is mandated by ethical considerations: the privacy of
individuals who were randomly selected as respondents to this survey must be
carefully protected. A second part is simply the fact that social scientists
are not biographers. They often use biographical information in order to
understand their subject, but their subject is not isolated individuals. The
particular people they learn from are always seen in a social context.
Similarly, for geographers, the particularity of a place derives its meaning
within their discipline as a phenomenon within a region, or within the context
of a system of regions.

I. ORIGINS

In a fundamental sense, the identity of people is related to their
early lives: where they grew up, what dialects of what languages, and what
particular brands of what sort of belief systems they learned in childhood,
and what schooling, work and family life they experienced. For present
purposes the respondents will be characterized in terms of variables, namely
age, birthplace and mother tongue.

A. AGE
For purposes of analysis, the age of respondents is determined by

subtracting the year of their birth from 1984. These men ranged in age from 57 to 88 years old. The median age is 72 years, and the mean is 71.9 years. The standard deviation is 7.4 years. The age data are arranged in the following table in the form of a 'data-rich histogram', which was mentioned in Chapter 1, with 5-year intervals.

This graphic presentation and a number of others in this and the following chapters were inspired by the exposition of Edward R. Tufte (1983). An important principal of good graphic presentation, according to Tufte, is a high 'data-ink ratio'. (1983: [89]-105; [124]-137) One way that such presentation can be enhanced is with what Tufte calls 'multifunctioning graphical elements'. (1983:[139]-159) Table 3-1 uses the numbers representing the ages of the 91 respondents as 'graphical elements' in a histogram. The original data are thereby preserved and any marginal notation other than an explanatory title is rendered superfluous. This method of data representation is used extensively in this and in subsequent chapters. Occasionally the concept is elaborated to include multi-dimensional data which are tied to the numbers which determine the shape of the graph. For example, the data on the number of years of schooling are supplemented by notations which represent the highest certificate, diploma or degree obtained by respondents in Tables 3-4 and 3-6. In some cases the concept is carried even further, such as for Table 6-3, for which 'data-rich histograms' are constructed which include four data sets on the same graph.

TABLE 3-1
1984 AGE DISTRIBUTION OF RESPONDENTS BY FIVE-YEAR INTERVALS

```
                              70
                              70
                              70
                              70   75
                              69   74
                              69   74
                              69   74   80
                              68   73   80
                              68   73   80
                              68   73   79
                              68   73   79
                              68   73   79
                     65       67   73   79
                     65       67   72   78
                     65       67   72   78
                     65       67   72   77   85
                     63       67   72   77   85
                     63       66   72   77   85
                     63       66   72   76   84
                     63       66   72   76   84
            60       62       66   71   76   83
            57       61       66   71   76   82   88
            57       61       66   71   76   82   88
            57       61       66   71   76   81   87
   |--------|--------|--------|--------|--------|--------|--------|
```

It is notable that 13% of the respondents were younger than the 'normal' retirement age of **65 a.** The range of people from 57 years old (born in 1927) to 88 years old (born in 1896) is very wide. There is essentially a whole generation difference between the youngest and the oldest respondents. The 1927 cohort has experienced a very different history than the 1896 cohort. The younger group was in its infancy at the start of the Great Depression, for example, whereas the older group had started its fourth decade by then.

Mortality is the main explanation for the drop-off in the older age groups. Nineteen of the original 301 potential respondents are known to have been deceased at the time of the interview was attempted. There were probably more among those who could not be contacted as well. Since men who were too ill to be interviewed were disqualified for this study, there is a morbidity factor which contributes to the decline in the number of older men in the sample as well.

Although there are few aspects of age which can be demonstrated to have absolute determining effects on the lives of the men in this sample, the aging process, which is most easily symbolized by chronological age can, of course, affect them. Age will therefore be used as a controlling variable against which to weigh major aspects of their personal histories, their daily

activities, their housing histories and their current housing situation.

B. MOTHER TONGUE AND BIRTHPLACE

Based on the same question that was used in the **1981 Census of Canada**, there were thirteen different mother tongues represented among sample respondents. The following table is a matrix, showing the number of respondents by mother tongue and country of birth. The countries are called by their common current designations. In order to aid interpretation, the countries are ranked from left to right according to the number of respondents born in them and the mother tongues are ranked similarly from top to bottom.

This comparison of mother tongue and country of origin shows some interesting relationships. A high proportion of the respondents were born in Canada (69%), but they still represent considerable cultural diversity. Five of the six German speakers were born in Canada, as were three of the four Ukrainian speakers. English is the mother tongue for 73% of the respondents. Twenty-six percent of these English speakers were born in the United Kingdom, while only two percent of them were born in the United States. The United Kingdom and Canada are the countries of origin for 88% of the respondents. No respondents were born in Asia or in the Southern Hemisphere. Only one was born in Africa, and he grew up speaking Gujarati.

TABLE 3-2
RESPONDENTS BY MOTHER TONGUE AND COUNTRY OF BIRTH

COUNTRY OF BIRTH

MOTHER TONGUE	Canada	United Kingdom	United States	Czech-oslo-vakia	Italy	Norway	Denmark	Uganda	U-kraine	TOTAL
English	48	17	1							66
German	5			1						6
Ukrain-ian	3								1	4
Norwe-gian	1					2				3
Italian	1				2					3
French	2									2
Canton-ese	1									1
Danish							1			1
Finnish			1							1
Guja-rati								1		1
Letze-burg-esch	1									1
Slovak				1						1
Swedish	1									1
TOTAL	63	17	2	2	2	2	1	1	1	91

The birthplaces of respondents within Canada are given by city within British Columbia and by province elsewhere in the country in the following table:

TABLE 3-3
RESPONDENT BIRTHPLACES WITHIN CANADA

PROVINCE	CITY	NUMBER OF RESPONDENTS
British Columbia		20
	Vancouver	7
	New Westminster	5
	Mission	2
	Burnaby	1
	Cranbrook	1
	Fernie	1
	Maple Ridge	1
	North Vancouver	1
	Victoria	1
Saskatchewan		12
Alberta		10
Manitoba		10
Ontario		4
New Brunswick		3
Nova Scotia		2
Quebec		1
Prince Edward Island		1

In sum, the retired men in this sample represent a largely west-trending migration stream, which is the dominant pattern for the west coast of English North America. Many of these men moved to the Vancouver area before they retired. Some others moved west after retiring. The principal reasons why these men have chosen to live in retirement in their current neighbourhoods is one of the subjects of the current investigation.

II. CAREER

The careers of the respondents can be characterized by four factors:
1) their **schooling** background, 2) their **last occupation** before retirement, 3) their **retirement year**, and 4) their **age at retirement**.

A. SCHOOLING

The survey elicited three variables about the schooling of respondents: the number of years of primary and secondary education completed, the number of years of university or other post-secondary study and the highest certificate, diploma or degree attained. These data are summarized in the following table. The table is in 'data-rich histogram' form in groups of two years per column.

TABLE 3-4
RESPONDENT YEARS OF SCHOOLING BY TWO-YEAR GROUPS AND
HIGHEST CERTIFICATE, DIPLOMA OR DEGREE ATTAINED

```
                                   13 3
                         11 1      13 3
              9 1        11 1      13 3
              9 1        11 1      13 3
              9 1        11 1      13 4
              8 1        11 3      13 4
              8 1        11 3      13 4
              8 1        11 3      13 4
              8 1        11 3      13 4
              8 1        10 1      12 1
              8 1        10 1      12 1    15 1
              8 1        10 1      12 1    15 3
              8 1        10 1      12 2    15 4
              8 1        10 1      12 2    15 4
              8 1        10 1      12 3    15 4    17 6
              8 1        10 1      12 3    15 5    17 6
              8 1        10 1      12 3    14 3    17 5
              8 1        10 1      12 3    14 3    16 6
    5 1       8 1        10 1      12 3    14 4    16 5
    4 1       8 1        10 3      12 3    14 4    16 5
 3 1  4 1     8 1        10 4      12 4    14 4    16 5
 3 1  4 1  7 1  8 1      10 4      12 4    14 4    16 5
 |____|____|____|____|____|____|____|____|
```

KEY TO TABLE 3-4

    LEFT PART OF EACH COLUMN: total number of years of schooling
    BOLD NUMERALS: at least one year of post-secondary schooling included
in total
    RIGHT PART OF EACH COLUMN:
            1: no formal qualification
            2: other qualification without high school diploma
            3: high school diploma or matriculation certificate
            4: pre-baccalaureate certificate or degree
            5: bachelor's degree
            6: master's or equivalent professional degree

        Both the median and the mean number of years of schooling is 11. Only
8% of the sample had less than 8 years of schooling. Half of the respondents
had at least a high school diploma, and 10% had completed at least one univer-
sity degree. Considering the fact that the educational opportunities for men
now retired were much more limited in the past, this group appears to be rath-
er well educated. There is enough variation in the sample, however, to provide
useful comparisons with activity patterns and housing situations.

B. LAST OCCUPATION

        Obtaining meaningful occupational information from a survey can be
difficult. The current survey attempted to ameliorate this problem by asking
two specific questions: "Just before you retired, in what industry or field

were you working?" and "What was your specific job?" The former was classified
by the '1980 Standard Industrial Classification' (Statistics Canada 1980e),
and the latter by the 'Canadian Classification of Occupations' (Manpower and
Immigration 1971). The actual industry or field the respondents were working
in is of less interest for the present study than their specific job.[1] The
purpose of asking the two-fold question was to elicit a more distinctive de-
scription of their actual job.

Any kind of scheme for grouping occupations has an arbitrary quality
about it. The reason for making broad distinctions is the supposition that a
man's former occupation often bears some relationship to the pattern of activ-
ities which he pursues in his retirement. This sort of relationship can be by
no means simple, just as the relationship between occupation and leisure ac-
tivities of a person before retirement can be complex. (Kelly 1982: 112-132)
One important variable is the relative amount of critical decision-making that
is required in one's job. (Gill 1985) A simple trichotomous classification
among **professional-managerial workers, middle-level supervisory workers**, and
all other workers was made in order to place the decision-making distinction
among occupations on an ordinal scale. From the sample of the present study,
men whose last occupation was as major administrators or executives were
placed in the first group. A former civil engineer, a former marine pilot and
a former airline pilot were placed in that group as well, because of the
important decision-making responsibilities which people in these occupations
are required to undertake. The second level on the dimension of decision-
making responsibility included such occupations as a former distillery
foreman, a former insurance claims adjustor and a former bookkeeping
supervisor. There appeared to be no justification for making a distinction
between white-collar and blue-collar workers in this classification scheme.

The following table casts the same data from the previous table into
three histograms for each of these occupational groups.

TABLE 3-5
RESPONDENT YEARS OF SCHOOLING BY TWO-YEAR GROUPS AND HIGHEST CERTIFICATE, DIPLOMA OR DEGREE ATTAINED BY PRE-RETIREMENT OCCUPATIONAL STATUS

```
        PROFESSIONAL/MANAGERIAL              |    MIDDLE-LEVEL SUPERVISORY
               WORKERS                       |           WORKERS

                         13 4
                         13 3
                         13 3  .15 5   17 5
                         12 4   15 4   17 6
                         12 4   15 1   17 6
         9 1   11 1      12 3   14 4   16 5  |             11 1
         9 1   11 1      12 3   14 4   16 5  |      8 1    11 1   13 4
         8 1   10 1      12 3   14 4   16 5  |      8 1    10 1   13 3
 4 1   7 1   8 1   10 1  12 1   14 4   16 6  |      8 1    10 1   12 1   14 3
 |——||——||——||——||——||——||——|               |     |——||——||——||——|
```

ALL OTHER WORKERS

```
                           9 1   11 3
                           8 1   11 3
                           8 1   11 1
                           8 1   11 1   13 4
                           8 1   10 4   13 4
                           8 1   10 1   13 4
                           8 1   10 1   13 3
                           8 1   10 1   12 3
                           8 1   10 1   12 3
                           8 1   10 1   12 3   15 4
                 5 1       8 1   10 1   12 2   15 4
     3 1   4 1   8 1       10 1  12 2   15 3
     3 1   4 1   8 1       10 1  12 1   14 3
    |——||——||——||——||——||——||——|
```

KEY TO TABLE 3-5

LEFT PART OF EACH COLUMN: total number of years of schooling
BOLD NUMERALS: at least one year of post-secondary schooling included in total
RIGHT PART OF EACH COLUMN:
1: no formal qualification
2: other qualification without high school diploma
3: high school diploma or matriculation certificate
4: pre-baccalaureate certificate or degree
5: bachelor's degree
6: master's or equivalent professional degree

For the professional/managerial group, the mean and median years of schooling is 13. Both mean and median are 11 years for the middle-level supervisory workers and 10 years for all other workers. It is worth noting that all respondents with university degrees held professional/managerial positions just before retirement. Pre-retirement occupational status is used as a part of a **career index** and a **socio-economic status index,** which is described later in this chapter.

C. RETIREMENT YEAR

As discussed in Chapter One, retirement is a changing status for an individual as the retirement experience matures and personal and family circumstances change. The year of retirement is a simple measure of this changing status which can be helpful for comparative purposes in interpreting activity patterns and the housing situation. The following table shows the year of retirement for respondents in 'data-rich histogram' form.

The man who retired in 1948 is quite exceptional: he retired at age 43. The remainder of the pattern is fairly consistent with an expected increase up to the present. The time-lag of the Polk Directories has already been noted, which meant that the very recently retired population cannot be covered by this survey. Those men who retired before 1983 appear to be adequately sampled. The median year of retirement was 1976, and the mean was 1974, which reflects the obvious skewness of this distribution.

TABLE 3—6
YEAR OF RESPONDENT RETIREMENT DISTRIBUTION IN 5—YEAR INTERVALS

```
                                                 1980
                                                 1980
                                                 1980
                                                 1980
                                                 1980
                                                 1979
                                                 1979
                                                 1979
                                                 1978
                                                 1978
                                                 1978
                                                 1978
                                                 1978
                                         1975    1978
                                         1975    1978
                                         1975    1978
                                         1975    1978
                                         1975    1978
                                         1975    1978
                                         1974    1978
                                 1970    1974    1978    1983
                                 1969    1974    1978    1982
                                 1969    1973    1977    1982
                                 1969    1973    1977    1982
                                 1969    1973    1977    1982
                         1965    1969    1972    1977    1982
                         1965    1968    1972    1977    1982
                         1965    1968    1972    1977    1981
                         1964    1968    1972    1977    1981
                         1964    1967    1971    1976    1981
                         1963    1967    1971    1976    1981
                 1959    1962    1967    1971    1976    1981
  1948    1955   1958    1961    1967    1971    1976    1981
  |--------|-------|-------|-------|-------|-------|-------|-------|
  1948    1955   1958    1961    1967    1971    1976    1981
```

D. AGE AT RETIREMENT

The age at retirement was calculated from other survey information. The year of birth was subtracted from the year of retirement. Therefore, the calculated age may vary from the respondent's commonly reckoned age by plus or minus one year. The figures are given in a similar 'data-rich histogram' in the following table.

TABLE 3-7
RESPONDENT AGE AT RETIREMENT IN 2-YEAR GROUPS

```
                                                    66
                                                    66
                                                    66
                                                    66
                                                    66
                                                    66
                                                    66
                                                    66
                                                    66
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                    65
                                                 64 65
                                                 64 65
                                                 64 65
                                      60         64 65
                          56         60 62      64 65
                          56         60 62      64 65
                       54 55         60 62      64 65
                       54 55         60 62      63 65
                       54 55 58 60 62 63 65 68
                       53 55 58 60 61 63 65 68 70
                    51 53 55 57 59 61 63 65 68 70
          41 43     51 53 55 57 59 61 63 65 67 70 72
          |—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

The man who retired at age 41 did so because of a physical disability
caused by an industrial accident. Although he uses crutches for mobility, his
health status still qualified him for this study. The one who retired at age
43, previously mentioned, is simply anomalous. Since his only current income
source is investments, he must have retired because he was wealthy enough to
do so. If the ages 64 through 66 are regarded as 'normal' retirement ages,
many more men in the survey retired 'early' than 'late'. The median retirement
age was 64 years and the mean was 62 years.

III. INCOME

Income was measured in three ways in the survey. The **1958 Minnesota
Consumership Study** perception of income adequacy measure (Hill 1968: 292),
applied to household income, was the first measure. The second was a household
income class range and the third was a ranking of the four most important

sources of the respondent's personal income. This latter measure is best summarized by the place of the **Old Age Security Pension** in the rankings. If this source is the highest ranking (or the most important single source of income) then it is one indication of relatively limited financial resources. The farther down the list the OAS appears, the more there is an indication that the financial position of the respondent is relatively favourable. The ranks, from lowest to highest, are 1,2,3,4 and N, for no placement of OAS in the top four ranks.

All three of these measures are summarized in the following 'data-rich' table. The left portion of each column gives the ranks of the **Old Age Security Pension**. The right portion of each column is the income adequacy score from the lowest of 1 to the highest of 5. These data pairs for each respondent are placed in the 'data-rich histogram' column corresponding to their household income group. The columns are not made up of the actual 1983 household income figures. Since these data were originally collected as income range classes rather than exact income, the columns simply indicate the 1983 household income class to which the other income indicators belong for each of the respondents who divulged income information.

TABLE 3–8
RESPONDENT INCOME:
1983 HOUSEHOLD INCOME GROUP, PERCEPTION OF HOUSEHOLD INCOME ADEQUACY
AND RANKING OF OLD AGE SECURITY PENSION AMONG OTHER INCOME SOURCES

```
                                    N 5
                                    4 5
                                    3 5
                                    2 5
                                    2 5
                                    2 5
                                    2 5
                                    1 5
                                    1 5
                                    N 4
                                    3 4
                                    2 4          N 5
                                    2 4          4 5
                                    2 4          4 5
                                    2 4          4 5
                                    2 4          3 5
                                    1 4          2 5
                                    1 4          N 4        N 5
                                    1 4          N 4        4 5
                                    N 3          4 4        3 5
                                    3 3          3 4        3 5
                                    2 3          3 4        3 5        N 5
                                    1 3          3 4        N 4        N 5
                                    1 3          3 4        3 4        N 5
                                    1 3          2 4        2 4        4 5
                        1 5 .       1 3          N 3        2 4        4 5
                        N 4         1 3          3 3        N 3        3 5
                        N 4         N 2          3 3        3 3        3 5
                        2 4         1 2          3 3        3 3        2 5
                        1 4         1 2          2 4        3 3        N 3
                        1 4         N 1          N 3        3 3
             1 2        1 2         2 X          2 2        1 3
    |————————————|————————————|————————————|————————————|————————————|————————————|
         $0–          $5 000–      $10 000–     $20 000–     $30 000–     $40 000+
        4 999         9 999        19 999       29 999       29 999
                        1 9 8 3    H O U S E H O L D    I N C O M E
```

KEY:
LEFT PART OF EACH COLUMN:
    1: Old Age Security Pension **first** ranking income source
    2: Old Age Security Pension **second** ranking income source
    3: Old Age Security Pension **third** ranking income source
    4: Old Age Security Pension **fourth** ranking income source
    N: **No** ranking of Old Age Security Pension among income sources

RIGHT PART OF EACH COLUMN:
    1: "I had to do without things that I needed."
    2: "I had the things that I needed, but none of the extras."
    3: "I had the things that I needed, and a few of the extras."
    4: "I had the things that I needed, and any extras I wanted."
    5: "I had the things that I needed, and any extras I wanted, and
        I still had money left over to save or invest."
    X: No data are available from this respondent on income adequacy.

Based on the assumption of linearity within the median group, the me-
dian 1983 household income for these respondents was $21 429. The respondents
in households with less than $10 000 of income in 1983 constituted only 9% of

the sample. The $40 000+ group included 12.5% of the sample, and the $30 000+ group was almost 30% of the sample.

Only one respondent reported that his 1983 household income was so inadequate that he "had to do without things that [he] needed". He was in the income group just below the median. A rather large number of respondents (almost 39%) indicated that they still had money left over to save or invest after their needs and any extras they wanted were obtained. Almost one-third of those in this situation placed themselves in household income groups below the median. This finding is important for this study, since conventional wisdom would posit that income inadequacy to be an important limiting factor for both activity and housing choice.

All but one of those respondents for whom the **Old Age Security Pension** was the most important personal income source reported a household income category which fell below the median. The distinction between personal and household income among these measures increases variation, depending on different household situations. The respondents whose **OAS** pensions did not rank among the top four income are scattered fairly evenly among the household income groups. More than half of these (58%) were actually younger than 65 years old, and so were normally ineligible for **OAS** pensions.

So far in this chapter **origins**, **career**, and **income** aspects of the personal background of the respondents have been discussed. From the **origins** section, the **age** of respondents (or its analogue, their **year of birth**) is used in later chapters for comparison with housing and activity variables. From the **career** section the **year of retirement** will also be used for further analysis. In the next section, the income and certain career variables are used to create three **socio-economic status indices.**

IV. SOCIO-ECONOMIC INDICES

A. INDEX DEFINITIONS

There were six variables which were elicited in the telephone survey which can serve as indicators of socio-economic status. These were 1) the number of years of schooling [SCHOOL YEARS], 2) the highest degree, diploma or other formal educational attainment [HIGHEST DEGREE], 3) a classification of

the last occupation before retirement [LAST OCCUPATION], 4) the 1983 household
income group [INCOME GROUP], 5) the rank of the Old Age Security Pensions
among any other sources of income [OAS INCOME RANKING], and 6) the **1958 Minne-
sota Consumership Study** measure of perception of 1983 household income
adequacy [INCOME ADEQUACY].

Each of these was placed in rank order for the respondents and the
correlations among these variables were calculated using the Spearman's r_s
rank correlation coefficient. The Spearman's test was used in preference to
Kendall's **tau** in this case because all of the variables have numerous tied
ranks, and Kendall's **tau** varies when both rankings being compared contain tied
ranks. (Kendall 1938; 1943-1946) The r_s, **Z** and **Q** [1-P] statistics for the fif-
teen pairs of the six variables are given in the following table.

TABLE 3-9
SPEARMAN'S RANK CORRELATION COEFFICIENTS
FOR SOCIO-ECONOMIC STATUS VARIABLES

RANKED VARIABLE PAIRS		r_s	Z	Q
SCHOOL YEARS	HIGHEST DEGREE	.783	7.386	$7.6E^-14$
HIGHEST DEGREE	LAST OCCUPATION	.554	5.255	$7.4E^-8$
SCHOOL YEARS	LAST OCCUPATION	.494	4.657	$1.6E^-6$
INCOME GROUP	OAS INCOME RANKING	.472	4.407	$5.3E^-6$
INCOME GROUP	LAST OCCUPATION	.353	3.296	$4.9E^-4$
HIGHEST DEGREE	INCOME GROUP	.307	2.862	0.002
INCOME GROUP	INCOME ADEQUACY	.306	2.840	0.002
SCHOOL YEARS	OAS INCOME RANKING	.292	2.758	0.003
OAS INCOME RANKING	LAST OCCUPATION	.280	2.661	0.004
SCHOOL YEARS	INCOME GROUP	.249	2.306	0.011
INCOME ADEQUACY	LAST OCCUPATION	.221	2.088	0.018
HIGHEST DEGREE	OAS INCOME RANKING	.209	1.981	0.024
INCOME ADEQUACY	OAS INCOME RANKING	.187	1.764	0.039
SCHOOL YEARS	INCOME ADEQUACY	.147	1.378	**0.084**
HIGHEST DEGREE	INCOME ADEQUACY	.141	1.327	**0.092**

All of the variables in the previous table are positively correlated. Two of the pairs correlate at an error (Q) of more than 0.05, however. The common variable in both of these pairs was INCOME ADEQUACY. With this variable eliminated, the remaining variables could be used to form a single **index of socio-economic status,** to be called **'SESINDEX'**.

INCOME ADEQUACY does correlate with significant strength with the other two income variables, INCOME GROUP and OAS INCOME RANKING, so that the three could be combined in a separate **income index,** to be called **'INCINDEX'**.

Furthermore, the three highest correlated pairs include three variables related to schooling and occupation, or more broadly career. The three variables, SCHOOL YEARS, HIGHEST DEGREE and LAST OCCUPATION can therefore be summarized in a **career index,** to be called **'CARINDEX'**.

There are a number of ways such a series of indices could be constructed. The number of different scores vary from fourteen (with a range of fifteen) in the case of SCHOOL YEARS to three for LAST OCCUPATION. According to the general theory of maximin contrast developed by Abelson and Tukey (1963), it would be preferable to give the extreme values of SCHOOL YEARS more 'interval' weight. There seemed to be no good reason for doing so in this case, especially since the DEGREE variable tends automatically to separate the extremes of SCHOOL YEARS in a common index. There appears to be good evidence for the efficacy of such a so-called 'improper linear model' as a practical predictive instrument. (Dawes 1979)

The method chosen is simply to perform linear transformations of the ordered scores for each of the variables so that the maximum index value would be 100. The components of **SESINDEX** are weighted in such a way that the three career variables carry the same weight as the two income variables. The minimum is more than zero, since the bottom-ranking scores are valued as one rather than zero. The values which are used for calculating the three socio-economic index scores for each respondent are shown in the following table. The sub-scores assigned to each of the variable components for the three indices are shown in square brackets: [ ].

TABLE 3-10
THE COMPONENTS OF THREE SOCIO-ECONOMIC INDICES

SESINDEX	INCINDEX	CARINDEX	RANK	VARIABLE COMPONENTS
				number of years of schooling [SCHOOL YEARS]:
[16.7 to 2.9]		[33.3 to 5.9]		for 3 to 17 years
				highest diploma, certificate or degree received [DEGREE]:
[16.7]		[33.3]	6	master's or equivalent professional degree
[13.9]		[27.8]	5	bachelor's degree
[11.1]		[22.2]	4	pre-baccalaureate certificate or degree
[8.3]		[16.7]	3	high school diploma or matriculation certificate
[5.6]		[11.1]	2	other qualification without high school diploma
[2.8]		[5.6]	1	no formal qualification
				classification of last occupational position before retirement [LAST OCCUPATION]:
[16.7]		[33.3]	3	managerial or professional position
[11.1]		[22.2]	2	middle-level supervisory positon
[5.6]		[11.1]	1	other occupational position
				1983 household income group [INCOME GROUP]:
[25.0]	[33.3]		6	$40 000+
[20.8]	[27.8]		5	$30 000 - 39 999
[16.7]	[22.2]		4	$20 000 - 29 999
[12.5]	[16.7]		3	$10 000 - 19 999
[8.3]	[11.1]		2	$5 000 - 9 999
[4.2]	[5.6]		1	$0 - 4 999
				ranking of Old Age Security Pension among other income sources [OAS INCOME RANKING]:
[25.0]	[33.3]		5	no OAS ranking among the top four income sources
[20.0]	[26.7]		4	OAS ranked fourth among income sources
[15.0]	[20.0]		3	OAS ranked third among income sources
[10.0]	[13.3]		2	OAS ranked second among income sources
[5.0]	[6.7]		1	OAS ranked first among any other income sources or was the only source
				perception of 1983 household income adequacy [INCOME ADEQUACY]:
	[33.3]		5	"I had the things that I needed, and any extras I wanted, and I still had money left over to save or invest."
	[26.7]		4	"I had the things that I needed, and any extras I wanted.
	[20.0]		3	"I had the things that I needed, and a few of the extras.
	[13.3]		2	"I had the things that I needed, but none of the extras.
	[6.7]		1	"I had to do without many things that I needed.

The ranges for the three indices in the telephone survey are as follows:

SESINDEX: 24.6 to 96.2
INCINDEX: 25.6 to 100
CARINDEX: 22.5 to 100

INCINDEX and CARINDEX are constructed by different variables, but both have component variables in common with SESINDEX. Where common variables are used in the construction of two indices, the two are not independent and can therefore not be validly correlated statistically. For INCINDEX and CARINDEX, however, Spearman's $r_s = 0.264$, $Z = 2.440$ and $Q = 0.007$.

Now that the three indices have been defined, their actual distributions can be discussed.

B. THE SOCIO-ECONOMIC STATUS INDEX 'SESINDEX'

The **socio-economic status index** values for the telephone survey respondents are shown in 'data-rich histogram' form on the following table. The median value is printed in **bold**.

TABLE 3-11
THE DISTRIBUTION OF THE SOCIO-ECONOMIC STATUS INDEX 'SESINDEX'

		49.5					
		49.1	59.8				
		48.8	59.7				
		48.4	58.4				
		47.3	58.4				
		47.0	**56.3**	70.0	79.4		
		46.1	56.3	69.4	78.9		
		44.8	55.6	68.7	78.3		
		44.0	55.4	66.6	77.3		
		43.7	55.1	65.8	77.0		
		43.7	54.8	64.1	76.9	87.3	
		43.2	54.0	63.0	76.8	86.5	
		42.2	54.0	62.3	76.6	86.2	
	39.2	42.0	53.7	62.0	76.4	84.9	
	38.7	41.6	52.3	62.0	75.7	84.2	
29.8	38.7	41.2	51.9	61.3	75.6	82.1	
29.5	35.6	40.9	51.2	60.9	75.2	81.7	
29.5	34.7	40.6	50.9	60.8	73.4	81.7	96.2
24.6	33.7	40.5	50.6	60.2	72.9	80.8	91.5

|———|———|———|———|———|———|———|———|

Although the **SESINDEX** is built from ordinal-scale data, the combined influence of the five variables produces a measure which has certain interval-

scale characteristics. The variations of these intervals give 'shape' to the distribution as seen in a 'data-rich histogram' form. For purposes of statistical testing against other variables in the survey, however, the SESINDEX will be treated as an ordinal measure. The mean score is **58.6,** which is fairly close to the median score of **56.3.** The standard deviation is **17.2.** This latter measure is used in its z-score form to differentiate the geographical distribution of respondents according to the SESINDEX. Map 3-1 shows this distribution. The numbers which are adjacent to a few of the symbols on the map indicate the number of respondents who share both the same range of Z-scores for their **SESINDEX** and the same **EA** population centroid.
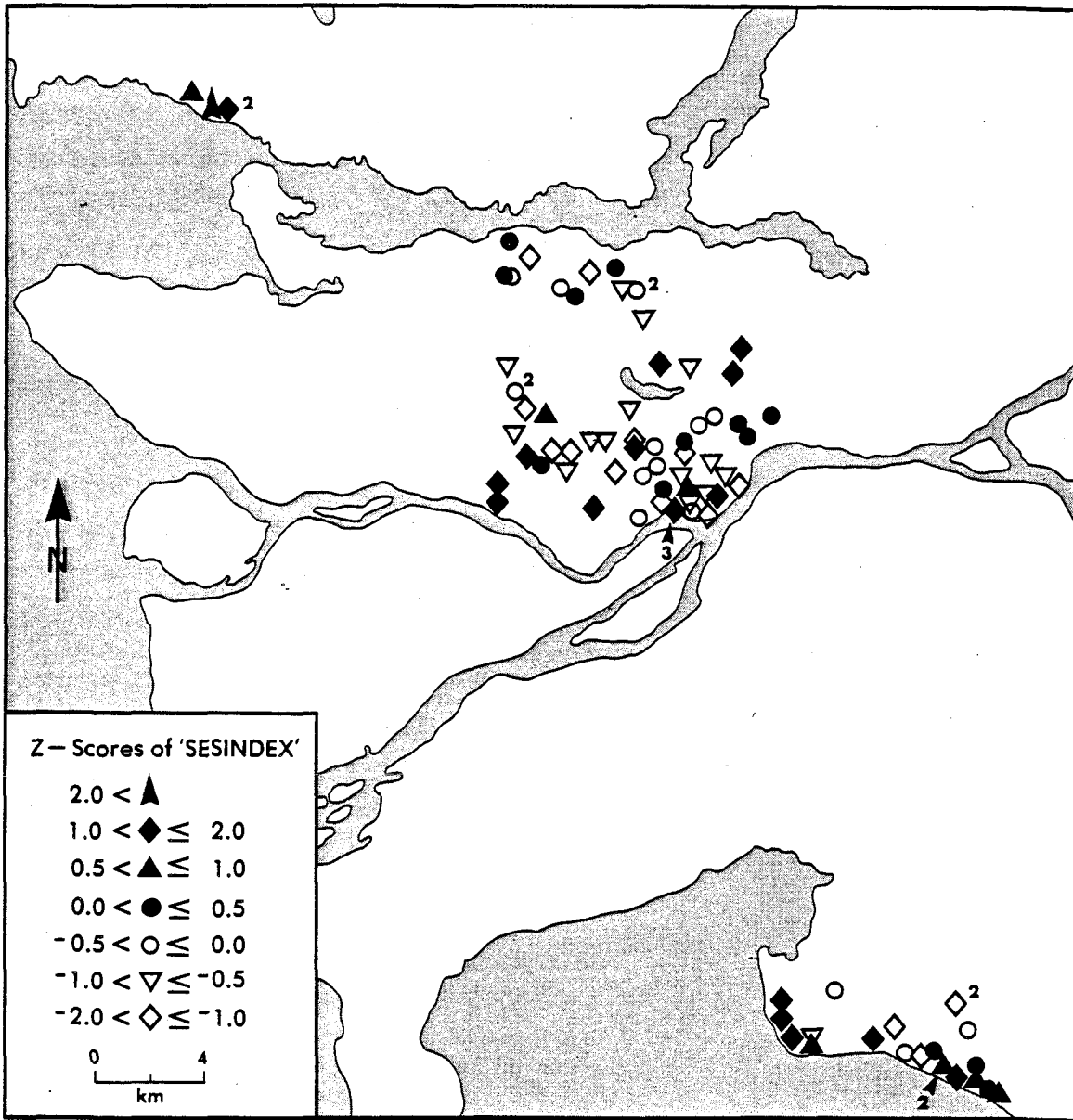
MAP 3-1

THE GEOGRAPHICAL DISTRIBUTION OF RESPONDENTS BY THE SOCIO-ECONOMIC
INDEX 'SESINDEX'

The high SESINDEX scores for the West Vancouver respondents is expected, as are those in the western part of South Surrey. There are a few pockets of lower scores, such as in the Imperial-Kingsway area of Burnaby and along the King George VI Highway in South Surrey. The patterns of the rest are quite varied. In Burnaby, New Westminster and White Rock, respondents with widely divergent SESINDEX scores live quite close to one another. This means that there is relatively little geographical segregation of respondents according to **socio-economic status** in the 'core-area' of the telephone survey.

C. THE CAREER INDEX 'CARINDEX'

The career index 'CARINDEX' is a transformation of the same data which are shown in Table 3-4, combining the number of years of schooling with the highest certificate, diploma or degree attained as well as the pre-retirement occupational status. The distribution of the CARINDEX scores for the survey respondents is shown in the following table. Since there is an even number of scores, both median scores straddling the median are printed in **bold**.

TABLE 3-12
THE DISTRIBUTION OF THE CAREER INDEX, 'CARINDEX'
GROUPED BY TEN INDEX POINTS

20s	30s	40s	50s	60s	70s	80s	90s/100
	38.2						
	38.2						
	36.3						
	36.3						
	36.3						
	36.3						
	36.3						
	36.3						
	36.3		58.8				
	36.3		58.8				
	34.3	49.3	58.8				
	32.4	49.3	57.2		79.1		
	32.4	49.3	56.5		79.1		
	32.4	49.3	56.5		75.5		
	32.4	47.4	55.2		75.5		100.0
	32.4	47.4	54.6		75.2		100.0
	32.4	46.7	53.3	69.9	73.5		98.0
	32.4	45.8	52.9	69.6	73.5		94.4
26.5	32.4	45.8	**52.6**	68.3	73.5	85.0	92.5
24.5	32.4	45.8	**51.3**	64.4	71.9	83.0	92.5
24.5	32.4	43.5	**51.3**	62.7	71.6	83.0	92.5
22.5	32.4	43.5	**51.3**	62.7	71.6	83.0	92.5
22.5	32.4	40.2	**51.3**	62.4	71.2	81.0	90.5

The calculated median score[2] for CARINDEX is **52.0**, while the mean is

55.9 and the standard deviation is **21.3**. The somewhat skewed and multimodal distribution is clear. Tied CARINDEX scores are very common. The large number of scores in the thirties consist of men with less than a high school education and non-managerial/professional and non-supervisory occupations before retirement. Those in the twenties are similar, but with even fewer years of schooling.

D. THE INCOME INDEX 'INCINDEX'

The income index 'INCINDEX' consists of equal weights of 1983 household income groups, ranking of the Old Age Security Pension among other income sources and perception of 1983 household income adequacy. These are the same variables which were depicted on Table 3-7, but the linear transformation of the three variables into a single index value for each respondent makes for a different distribution. This combined distribution is shown on the following table.

TABLE 3-13
THE DISTRIBUTION OF THE INCOME INDEX, 'INCINDEX'
GROUPED BY TEN INDEX POINTS

```
                                          68.9
                                          68.9
                                          68.9
                                          68.9                    88.9
                                          68.9                    87.8
                                          68.9                    87.8
                                          68.9                    87.8
                                          67.8                    87.8
                                          67.8                    86.7
                         50.0    56.7     67.8                    86.7
                         50.0    56.7     67.8                    86.7
                         50.0    56.7     67.8                    83.3
                         50.0    56.7     63.3          80.0      82.2
                         50.0    56.7     63.3          76.7      82.2
                         48.9    56.7     63.3          76.7      82.2      100.0
                         44.4    56.7     63.3          75.6      82.2      100.0
                         44.4    56.7     63.3          75.6      82.2      100.0
                         43.3    56.7     62.2          75.6      81.1       94.4
                36.7     43.3    54.4     62.2          74.4      81.1       93.3
                36.7     43.3    51.1     62.2          71.1      81.1       93.3
       25.6     31.1     43.3    51.1     62.2          71.1      81.1       93.3
    |——————|————————|————————|————————|————————|————————|————————|————————|
```

The median INCINDEX score is **68.9**; the mean is **67.7** and the standard deviation is **16.7**. In contrast with the simple distribution on Table 3-7, the

bimodal shape of Table 3-13 is best explained by the high number of men, even in the 1983 household income group ($10 000 - $19 999) which is below the median income for the sample, who claimed that they "still had money left over to save or invest".

E. APPLICATIONS FOR THE SOCIO-ECONOMIC INDICES

The three socio-economic status indices, SESINDEX, CARINDEX and INCINDEX, are used in the following chapters as controls for the analysis of activity patterns and housing situations of respondents. It is very common for researchers to use simple variables such as income or number of years of schooling as control measurements. The problem is that such variables, while carrying the ostensible authority of 'objectivity', actually mask very different meanings to different respondents. For example, two of the present respondents whose 1983 household income fell in the $20 000 to $29 999 range reported that they had "none of the extras", whereas ten of the men whose 1983 house income was in the $10 000 to $19 999 range had "any extras [they] needed, and [they] still had money left over to save or invest." The composite indices developed for this study strike a balance among these sorts of contrasts. In addition, where component variables are more consistent and do not cancel one another out, their significance is appropriately amplified.

V. HOUSEHOLD COMPOSITION

It is important to know something about the other people who may share a household with the respondents in order to put both their use of time and their dwelling situation into better perspective. An important variable which affects household composition is the men's marital status.

A. MARITAL STATUS

The marital status of the men in the sample is as follows:

MARITAL STATUS	NUMBER
married	83
separated	1
widowed	6
no data	1

It is notable that none of the respondents had never been married. No men were currently divorced, although the one who labelled himself 'separated' had been living apart from his wife for many years and had lost touch with her. No data on former marital status was collected in the survey. It emerged in the interview that one respondent had just recently married: one of his activities was looking at wedding pictures with his new wife and stepchildren.

B. OTHER HOUSEHOLD MEMBERS

The composition of the households among the sample is as follows:

TABLE 3-14
COMPOSITION OF RESPONDENT HOUSEHOLDS

COMPOSITION	NUMBER
With Wife Only	75
With Wife and One Other Relative	6
With Wife and Three Other Relatives	1
With One Female Friend	1
With Two Relatives	2
Alone	5
No Data	1

All but one of the married men were living with their wives. In the exceptional case, the respondent's wife was normally confined to a nursing home, but he brought her home frequently, including on the diary day, and he visited her daily. A common characteristic of these retired men is that they live in relatively small households. One implication of this finding presumably is that the domestic responsibilities of most of these men are considerably less than they would be in households with more members and therefore that these men have a great deal of freedom about how to use their time.

VI. HEALTH STATUS

Finally, the health status of respondents was queried in two ways: 1) There was a question about health limitations in the past which focused on the choice of the respondent's present dwelling. 2) Another question about present health asked about health-related activity limitations. These time differences were tied directly to other aspects of the study: the detailed activity sampling is from 'yesterday's' activity, whereas decision-making criteria questions point toward the most recent moving event. The results of these three questions will be examined in turn.

A. DWELLING CHOICE LIMITATION BY HEALTH STATUS

Respondents were asked two questions about their health status related to their decision to move to their present dwelling: "Was the choice of your present dwelling limited in any way because of your health? [IF SO:] How was your choice limited."

The response to the first question was negative for 87 (about 96%) of the respondents. The four remaining respondents whose health limited the choice of their present dwelling gave the following information about that limitation:

TABLE 3-15
HEALTH STATUS LIMITATIONS ON CHOICE OF PRESENT DWELLING

YEAR OF MOVE	DEGREE OF LIMITATION	TYPES OF HOUSING LIMITATION EXPERIENCED
1964	no data	no data
1972	severe	a) needed special features such as handrails b) elimination or lessening of stairs
1973	severe	no data
1983	minor	a) fewer maintenance responsibilities b) elimination or lessening of stairs

The total amount of limitation of dwelling choice because of health was very slight for this sample. Part of the reason is that the sample specifically excluded any men who were residents of care facilities or other institutions.

B. ACTIVITY LIMITATION BY HEALTH STATUS

Respondents were also asked, "Are you limited in any daily activities because of your health? [IF SO:] How are your activities limited?" This question yielded many more positive responses than did the one about dwelling choice limitation. The results are summarized in the following table.

TABLE 3-16
DAILY ACTIVITY LIMITATIONS BECAUSE OF HEALTH STATUS

NUMBER OF RESPONDENTS	DEGREE OF ACTIVITY LIMITATION	TYPICAL ACTIVITY WHICH IS LIMITED
56	none	none
4	minor	particular activity not specified
1	minor	attending sports events
9	minor	various forms of sports or physical exercise
1	moderate	particular activity not specified
1	moderate	normal work
2	moderate	gardening
9	moderate	various forms of sports or physical exercise
1	severe	particular activity not specified
7	severe	various forms of sports or physical exercise

These activity limitations which the respondents identified need to be taken into account in the analysis of their daily activities. In the 'severe' limitation cases, the impact could be significant, and less so for those with

'moderate' limitations. The impact of health limitations is negligible when they are classed as 'minor'. The **activity limitation by health status** of respondents will be used later in the thesis as a control factor for activity indices.

VII. A QUICK SKETCH

In sum, the sample of men has the following general characteristics. They . . .

are mostly Canadian born.

mostly have English as a mother tongue.

average 11 years of schooling.

represent a very broad range of pre-retirement occupations.

averaged over $21 000 of annual household income in 1983.

almost all feel their income is reasonably adequate.

are mostly married and sharing their dwelling only with their wives.

are mostly very healthy, some less so, but about 9% of them have marked health problems which affect their daily activities.

[1]The numbers of respondents by major industrial category are as follows:

primary industries	5
food and beverage processing	8
wood, pulp and paper industries	9
metals, non-metallic minerals and chemicals	8
construction	6
transportation and warehousing	12
utilities	2
wholesale and retail	12
banking and insurance	9
government	12
education	3
health	1
tourism	2
voluntary associations	2

[2]In this case, and with almost all calculations used in this study, more significant digits were used for the actual calculations than are shown in tables or quoted in the text.

C H A P T E R   F O U R :
Y E S T E R D A Y ' S   A C T I V I T I E S :
THE TIME BUDGETS OF SURVEY RESPONDENTS

> For behind everything they said I heard murmurs of a
> life hemmed in by authority and convention, by money-
> thrust, by conflicting loyalties, by today and
> tomorrow.
>   Colin Fletcher (1967: 101)

The time budget of "yesterday's activities" constituted a major part
of the survey of retired men which was conducted for this study. In this chap-
ter the activities which were identified in the survey are analyzed according
to several different classification schemes. The **'taxonomic'** system was devel-
oped by sociologists and other time-budget researchers in order to allow for
comparisons among different surveys around the world. (Szalai 1972) In addi-
tion, these researchers commonly make use of the categories of **'primary'**,
'secondary' and **'tertiary'** for activities which research subjects report as
having taken place simultaneously.

Other classification schemes were developed by this author for the
present research project. The degree of simultaneous activity is termed **simul-
taneity**. The **mode of social intercourse, muscular motility**, and various char-
acteristics of activity **companions** are used to identify conceptual distinc-
tions and commonalities for which the taxonomic system is inadequate. A sub-
jective **work-leisure** classification scheme, which was borrowed from another
Canadian study (Shaw 1982), was elicited from respondents. Further spatially-
oriented classifications of the activities from the time budgets are treated
in the following chapter.

I. TEMPORAL ASPECTS OF ACTIVITY

Consistent with the 1981 Canadian Time Use Pilot Study (Kinsley and
O'Donnell 1983: 18), this survey reckoned 'yesterday' as beginning at 4:00
a.m. on the preceding day, and ending at the same time on the day of the in-
terview. Since it is common for people to stay awake until after midnight,
this method makes it easier to capture a whole waking day, and in almost all
cases, only nighttime sleeping is split into two segments.

A. THE PROBLEM OF SUBJECTIVE TIME-ROUNDING BY RESPONDENTS

The reporting of the beginning and end of activities by respondents clusters markedly around times which are evenly divisible by five minutes. The clustering is even more prevalent at 10, 15 and 30 and 60-minutes past a given hour. The following table shows the pattern.

TABLE 4-1
THE NUMBER OF START TIMES OF TIME BUDGET EPISODES
BY THE NUMBER OF MINUTES PAST THE HOUR

START TIME MINUTES PAST THE HOUR	NUMBER OF EPISODES	START TIME MINUTES PAST THE HOUR	NUMBER OF EPISODES
0	670	30	434
1	1	31	1
2	5	32	6
3	4	33	3
4	1	34	1
5	62	35	52
6	1	36	1
7	0	37	6
8	0	38	1
9	0	39	0
10	78	40	75
11	1	41	1
12	5	42	1
13	0	43	0
14	0	44	0
15	177	45	184
16	1	46	1
17	2	47	1
18	2	48	2
19	0	49	0
20	81	50	71
21	1	51	1
22	3	52	0
23	3	53	1
24	0	54	0
25	46	55	52
26	1	56	1
27	1	57	4
28	1	58	0
29	0	59	0

This clustering of reported times at intervals which are multiples of five minutes most likely stems from two causes. First, people really do regulate some aspects of their lives according to clock time, even in retirement. For example, a respondent may habitually wake up right at 7:00 or 8:00 o'clock in the morning. Mealtimes may also have a similar regularity about them. He may watch a television program or attend some scheduled event which begins on the hour or half-hour. Second, when activities were reported as having lasted

a fairly long time, a respondent's reckoning of the duration of those activi-
ties a day later tend to be rounded off. In the course of the time budget
interviews, the interviewer made it clear that he was writing down actual
clock times, and the respondent was often asked something like, "So, if you
ate lunch for about a half hour, then I'll write down that you were on your
way to the hardware store at twenty minutes to one — is that all right?" The
response might have been, "You'd better make that quarter to one. I had to
empty the garbage before I left." In such a case a five-minute episode of
garbage emptying would be recorded before the interview continued.

Since most respondents were able to anchor their recollection of ac-
tivity times at several points in their day, the errors produced by this sys-
tematic rounding of time estimates could be minimized. The total amount of
time must add up to 1440 minutes or twenty-four hours. These errors tend,
therefore, to be randomized and can be disregarded for purposes of general
analysis of the data.

B. SUMMARIZING THE TEMPORAL DATA

The details of the activity classification schemes which are used for
this survey were given in Chapter 2. This section summarizes the twenty-four
hours of the respondents' **diary day** according to this multi-faceted classifi-
cation. Each classification scheme is summarized in two ways. The first sum-
mary orders the activities of the respondents **quantitatively** using **minutes** as
the measure of **duration**. The second summary shows a **general pattern** of the day
as a **chronological** sequence over twenty-four hours.

1. Duration in Minutes

Although duration of various classifications of activities is used as
a means of measurement, it is not intended to be interpreted in any absolute
sense. The **quantity** of time spent on a given activity does not necessarily
reflect the **quality** of that time for a participant. Similarly, the amount of
chronological time devoted to certain activities does not necessarily indicate
the **significance** which those activities hold for respondents. Nevertheless,
aggregate duration of activities **does** serve as an indicator of the general
pattern of a person's life. The quality of a man's day, six hours (360

minutes) of which were in front of the TV and 10 minutes of which were used
conversing with somebody, is vastly different from the day of another retiree
who spent two hours in the morning in the garden, ninety afternoon minutes
doing volunteer work and three evening hours attending a fraternal order
meeting.

2. Twenty-Four Minutes of Twenty-Four Hours

The time budget data are so extensive that a summary of the whole day
from 4:00 a.m. to the same time the next day requires a sampling procedure.
Since the activities take place for variable periods of time, a sample of one
minute for every hour of the day can be used to obtain a picture of the ac-
tivity structure as the day progresses for all of the respondents.

The number of minutes past the hour at which no episode started in the
survey is of special interest since it avoids the beginning or ending of any
activity. Table 4-1 shows that no episodes were reported as beginning at
sixteen of the sixty minute intervals. The pairs of minutes 13 and 14 past the
hour are exactly thirty minutes away from minutes 43 and 44 past the hour. The
intervals of minutes 13 and 43 past the hour were used to sample the activity
over twenty-four hours with a resolution of half hours. A comparison of data
at this level was made with the same data sampled every hour. The more de-
tailed sample did not substantively change the general pattern of activity
which had a resolution of one hour, so the one minute per hour sample is nor-
mally used for this analysis. The sample consists of respondent activities
which were reported as taking place between minutes 13 and 14 past the hour.

II. TAXONOMIC ACTIVITY CLASSIFICATION

As explained in Chapter 2, the taxonomic activity classification used
for this study is a slightly expanded version of the **international coding sys-
tem** which is commonly used by time-budget researchers.

A. PRIMARY ACTIVITIES

Each activity episode includes a primary activity, designated as 'AC-
TIVITY 1' in the time budget form (Appendix C). If the respondent indicated
that he participated in more than one activity at the same time, then these
simultaneous activities were designated as primary, secondary ('ACTIVITY 2')
or tertiary ('ACTIVITY 3'). In cases where the designation was not obvious,
the respondent was asked to decide which activity was the primary one.[1]

A comprehensive summary of the duration of primary activities by sin-
gle international codes is given in Appendix G. Since the appendix is intended
to be used for reference purposes, the activities are ordered by international
codes. The appendix distinguishes between **episode** and **respondent** breakdowns of
the data. For example, 29 respondents did some gardening on their diary day,
spending an average (mean) of 150.4 minutes on that activity. There were, how-
ever, a total of 51 instances, or episodes, in which the primary activity was
gardening. These episodes lasted an average of 85.5 minutes.

A more compact summary of primary activity duration is given in the
following table. This table is ordered by total number of minutes devoted to
the activity category by the total sample. This number, although not shown
directly on the table, is the product of the number of episodes and the mean
episode minutes; it is also the product of the number of respondents and the
mean respondent minutes. Since the mean minute figures are rounded to the
nearest 0.1 minute, the product of those rounded figures with the interval
multipliers will, of course, produce some rounding errors.

TABLE 4-2
TAXONOMIC PRIMARY ACTIVITY DURATION

CODES	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
450,460	sleeping in bed	183	251.2	91	505.2
910-919	TV watching/listening	172	101.8	82	213.6
930-950, 971	reading	139	72.1	65	154.2
430	meals at home	234	36.0	91	93.5
171-172	gardening, pet care	57	80.2	33	138.6
830-899 (not 864, 880)	hobbies, arts, crafts, passive games	58	71.7	37	112.5
400	washing, dressing, shaving	166	24.8	86	48.0
300-390	shopping and related travel	210	18.1	50	75.9
800-825, 864,880	active sports or exercise	62	60.9	38	99.3
960-963	talking	70	51.3	45	79.9
100-110	meal preparation & cleanup	137	21.7	60	49.6
990,992	leisure travel	145	16.5	67	35.7
120,140, 173,191	routine indoor chores	36	64.6	26	86.9
160-164	repairs, maintenance	28	74.7	17	123.0
432*2	light beverages or snacks	58	34.3	37	53.7
600-698	organizational activity and volunteer work	36	53.2	14	136.8
981-989	relaxing and other passive leisure	30	51.5	22	70.2
900-908	radio listening	31	49.8	22	70.2
420-424, 498	helping activities & related travel	54	26.8	19	76.2
470	nap or resting, not in bed	19	76.1	18	80.3
011-090	regular work & related travel	16	64.7	3	345.0
700-792 (not 755)	entertainment away from home	16	62.4	9	110.9
999*	no activity reported	12	48.3	12	48.3
480-485	private or personal activity	16	33.8	14	38.6
130	routine outdoor chores	17	29.3	11	45.3
440,755	restaurant meals	9	49.1	9	49.1
490,492*	personal travel	17	23.3	10	39.6
193	household paperwork, mail	5	48.0	3	80.0
200-280	child care	5	45.4	5	45.4
970	reading and writing letters	2	97.5	2	97.5
410-411	medical care	7	24.0	5	33.6
920	recorded audio media	1	120.0	1	120.0

Of the ten highest ranking activities on Table 4-2, **meals at home** and **washing, dressing, shaving** are too routine and undifferentiated among the respondents to warrant detailed discussion. The others need to be examined more closely:

1. Sleeping in Bed

Since the diary day began and ended at 0400, most episodes that included sleeping in bed were split between the beginning and the end of the diary day. There are almost exactly twice the number of espisodes which included sleeping in bed than the total of 91 respondents. Eight hours and twenty-five minutes appears to be a rather long mean period of sleep for aged men. There was doubtless some time that was spent awake in bed which was coded as sleeping time. Following specific instructions on the TIME BUDGET FORM (Appendix C), the interviewers made a point of not pressing for any details about time spent in bed. There is a fair amount of variability in the amount of time respondents spent sleeping in bed. (The interquartile range is 75 minutes and the standard deviation is 89.9 minutes.) This variation is fairly evenly distributed. The median of 510 minutes is quite close to the mean of 505.2 minutes. Time spent sleeping in bed is such a universal activity, however, that it is unlikely to significantly differentiate respondents according to their housing situation.

2. Television Watching/Listening

All but nine of the respondents watched television on the diary day, and each of the ninety-one had at least one television receiver in his dwelling. The amount of television time they spent on their diary day varied enormously. The distribution of the duration of television watching/listening is given in the following table.

TABLE 4-3
RESPONDENT TELEVISION WATCHING/LISTENING DURATION
BY SIXTY-MINUTE INTERVALS

```
            180
     120 180
     120 180 240
     120 180 220
     115 180 215
     115 175 215 300
     105 165 213 300
  60 105 160 210 295
  60 105 155 210 280
  60 105 150 210 275
  60  95 150 205 270 360
  60  90 150 205 270 360 415
  45  90 150 195 270 340 395
  40  90 135 190 270 315 380 443
  30  90 135 190 255 315 380 440 495
   5  75 125 185 250 315 375 435 495                        810
  |—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

The range is from 5 to 810 minutes (13 hours and 30 minutes!). The interquartile range is 165 minutes and the standard deviation is 134.0 minutes. The duration of television watching/listening is somewhat positively skewed: while the mean is 213.6 minutes per respondent, the median is 187.5 minutes.

Although watching and listening to television was extremely common among the sample, the amount of time spent varied markedly.

3. Reading

Reading shares some characteristics with television viewing and radio listening, namely that it is a form of **receptive** activity which requires minimal exertion. It differs in two major ways as well. First, reading is a learned skill, and the level of that skill determines the level or difficulty of the printed material to which the reader has access. Television and radio are therefore more universally accessible to their audiences. There is an additional price to pay, however. Television and radio are time-specific media: they demand that the audience be present at the time of a given broadcast.[3] In general, the television also demands that the viewer be indoors in order to view it.[4]

Reading, in contrast, is not tied to a particular place or time. With some minor exceptions, such as library books with early due-dates and newspapers whose contents are mostly ephemeral, reading material can be and

commonly is read at almost any time and in virtually any place. The readers in this survey, in short, had much more spatial-temporal freedom for their reading than for their television and radio activity.

The following table shows the distribution of the total duration of respondent reading on the diary day.

<div align="center">

TABLE 4-4
RESPONDENT READING DURATION
BY SIXTY-MINUTE INTERVAL GROUPS
</div>

```
60
60
60
60 120
60 120
60 120
60 120
60 115 180
50 105 180
45 105 175
35 105 160
30 105 150
30  95 150         300
30  90 150         270
30  90 135         255
30  85 135 240 255         420
30  80 135 220 255         298
20  75 130 210 245         380
10  70 125 200 245 310 375 475                   744
|—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

There is a great deal of variation in the amount of time which respondents spent reading on their diary day. While the mean is 154.2 minutes, the median is 120 minutes: this means that the distribution is greatly skewed positively. The range is from 10 minutes to 744 minutes (12 hours and 24 minutes!). The interquartile range is 150 and the standard deviation is 131.0 minutes. There is also some considerable variation in the **type** of material which people were reading. In almost half of the reading episodes, the respondent was reading a newspaper. (See Appendix G, international codes 971 and 930 through 950.)

4. Gardening and Pet Care

Gardening and pet care are grouped together taxonomically as nurturing activities. Gardening is considerably more prevalent than pet care, as shown in Appendix G under international codes 171 and 172. The actual activities may vary from tending a few flowers or feeding a pet to spading soil or walking a

dog. These differences are better covered by other activity classification schemes, which are treated later in this chapter. It is of interest that over one-third of the respondents participated in this kind of activity. Their participation may be more important, however, than the actual amount of time they spent. The mean time spent was 138.6 minutes, and the median was 105 minutes. The range was from 10 minutes to 480 minutes. The interquartile range was 160 minutes and the standard deviation was 117.5 minutes.

5. Shopping and Related Travel

Fifty-five percent of the respondents did some shopping on their diary day. If we assume that the others do shopping almost as frequently, then the population which the sample represents does some shopping approximately every other day. Since most respondents travelled to their shopping by automobile and almost certainly all had refrigerators at home, these shopping trips appear to be much more frequent than necessary if 'necessary' is interpreted as that which is required to fulfill their physical requirements. It may be that shopping provides an important social outlet, even though shopping was mentioned by only two respondents as the most satisfying activity on their diary day. (See Table 4-41.)

6. Hobbies, Arts, Crafts and Passive Games

Sedentary participatory leisure includes a wide variety of activities. These activities typically require considerable experience and skill: they can be important means for people to express themselves creatively.

Forty percent of the respondents included such activity on their diary day. Like all of the discretionary activity categories discussed so far, the total duration spent by respondents in this sort of activity is distributed with a marked positive skew. The mean is 112.5 minutes, whereas the median is 60 minutes. The range is from 5 to 420 minutes; the interquartile range is 142 minutes and the standard deviation is 103.4 minutes.

7. Active Sports or Exercise

Sports which require some exertion, as well as any kind of regimented exercise activities are included with active sports or exercise. Some activi-

ties, such as walking, may or may not be classified in this group, depending on the context or purpose of the activity. If a person is walking to a shopping centre, for example, then the walking would be classified taxonomically as a form of travel related to shopping. In one case in which the respondent used a bicycle to travel among several activities, such as shopping, the activity was originally classified generically as travel related to shopping and other activity. However, since that respondent designated bicycling as itself the most satisfying activity of his diary day, these codings were changed to 824, or simply bicycling.

Except for one extreme outlier, the distribution of total duration of respondent active sports or exercise activity is fairly well balanced around the median value of 90 minutes. The following table shows this distribution.

TABLE 4-5
RESPONDENT SPORTS AND EXERCISE ACTIVITY DURATION
BY FIFTEEN-MINUTE INTERVAL GROUPS

```
                          90
                          90
 15                       90
 15       45              80  105          150
 10       45              80   95          150
 10       40   60   75    80   95  115 135 145 165 180
  5   20  37   60   75    80   91  110 130 140 160 180                      270
|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

The mean is 94.3 minutes. The interquartile range is 85 minutes and the standard deviation is 57.3 minutes. The positive skewness of the distribution is very small if the single extreme value is ignored.

8. Talking

There could hardly be any more universal human social activity than talking. In this survey, less than half of the respondents mentioned talking as a primary activity during their diary day. Although, as will be seen, talking is relatively more prominent as a secondary and even as a tertiary activity, there still remain 28 or over 30% of the respondents who apparently did not speak with anyone, even on the telephone, on their diary day. It may also be that time-budget data do not adequately account for all of the conversation

that a person carries on. Talking may be such a routine activity that respon-
dents often fail to remember specific instances of it. For others, however,
talking is an important activity. Nine respondents mentioned conversations as
the most satisfying activity on their diary day. (See Table 4-41.) The follow-
ing table shows the distribution of talking duration as a primary activity.

TABLE 4-6
TALKING DURATION AS A PRIMARY ACTIVITY
BY FIFTEEN-MINUTE INTERVALS

```
      30
 15   30
 15   30
 10   30            75   90
 10   30            75   90        120
 10   30   45       70   87        115                              195
  5   24   45   60  70   85        115        150  155              190
  5   20   45   60  65   80  100  107  135  145  151  180  190  210
 |—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

The distribution of primary talking duration is somewhat positively
skewed: the mean is 79.9 minutes, whereas the median is 70 minutes. The inter-
quartile range is 85 and the standard deviation is 59.1.

9. Overview of the Diary Day Taxonomic Primary Activities

The sample overview of the diary day classified by the taxonomic, or
international coding scheme is given on Table 4-7. Since the number of respon-
dents participating in the different categories of activities varies so much
across the day, the activities are listed as closely as possible to the numer-
ical order of the codes themselves. The numbers of respondents participating
in the dominant activities during the sample 13th minute past each hour are
highlighted with **bold** print. The most important findings from the data in Ta-
ble 4-7 are summarized as follows.

0413: Virtually everybody was asleep in bed.

0513: Only a handful of respondents had emerged from their beds.

0613: Just over 14% of the respondent were awake.

0713: Almost 31% of the respondents were out of bed, and 14% were
washing, dressing or shaving.

0813: About 26% were still in bed. Another 14% were washing, dressing
or shaving and 21% were eating their morning meal.

0913: All but one of the respondents were out of bed. While 44% were still involved in personal care and breakfast activities, 55% had begun the business of the day.

1013: Shopping and nurturing were the most prevalent, but there was a wide variety of other activities. Mid-morning as well as mid-afternoon were the times of the day when activities of respondents were the most heterogeneous.

1113: There is little overall change from the previous hour. Reading, which had been steadily increasing since 0613, was by this time second to shopping as the most popular activity.

1213: The noon meal was the dominant activity, occupying almost one-third of the respondents.

1313: A small plurality were eating lunch, but 12% were also occupied with television as a primary activity.

1413: Shopping again topped the list with 12% of the respondents participating and the television held most of its retired male audience.

1513: Nurturing and shopping were the dominant among numerous kinds of activities. Television activities reached their afternoon low.

1613: Reading was slightly ahead of nurturing and television activities, but again the variety of activities was very wide, with a marked decline in shopping.

1713: Domestic activities were then evident. Television watching/listening was the most popular activity, followed closely by the evening meal and reading, which reached its first daily peak.

1813: Even more so than at 1213, meal eating at home was the primary activity at this hour, with 40% of the respondents participating. Another 31 percent were concentrating on television. Thus, television prime time got an early start for retired men. Only 8 of the 28 men in front of the television mentioned specifically that they were watching the news.

1913: Although television was even more prevalent than one hour previously, 12% of the respondents were still eating their evening meal and 10% were reading.

2013: This was the summit of prime time television. Just over half of the respondents were focused on television, while reading reached its second

daily peak, with 16% of the respondents.

2113: The television audience was only slightly diminished, with 44% of all respondents primarily watching or listening. Reading maintained its peak level and sedentary participatory leisure activities peaked with 11% of the sample included.

2213: The television audience among retired men actually increased slightly to 45%, in spite of the fact that 16% were by this time retired for the night. Thirteen percent of the sample were still reading.

2313: Fifty-nine percent of the men were in bed while 27% were still in front of the television.

0013: Sleeping in bed occupied 91% of the respondents. Four percent were still watching television.

0113 to 0313: All but one respondent were sleeping in bed.

Neither 'active sports or exercise' nor 'talking' appeared prominently in any of the sample minutes. 'Active sports or exercise' peaked at 0913 with only 8 participants. 'Talking' as a primary activity was most popular at 1413, when 9 respondents reported it.

The data given on the following table and summarized above are on a general informational level informative. There is a basic weakness, however, with any merely descriptive taxonomical system such as the international time-budget coding scheme: the criteria which are used to delineate the taxonomy seldom coincide with the salient criteria which can be marshalled to address a particular research task. It is for that reason that these same activities will be analyzed by other classification schemes in the following and subsequent tables.

TABLE 4-7
THE NUMBER OF RESPONDENTS ENGAGED IN TAXONOMIC PRIMARY ACTIVITIES DURING ONE SAMPLE MINUTE OF EACH HOUR OF THE DIARY DAY

CODES	ACTIVITY	TIME: 0413	0513	0613	0713	0813	0913	1013	1113
011-090	regular work & related travel						1	2	3
100-110	meal preparation & cleanup	1	2	1	1	5	2	1	2
120,140	routine indoor chores		1			1	3	6	7
130	routine outdoor chores						1	1	3
160-164	repairs, maintenance					1	2	4	5
171-172	gardening, pet care				1	2	8	10	8
193	household paperwork, mail						1	2	
200-280	child care				1				
300-390	shopping and related travel						4	12	11
400	washing, dressing, shaving		1	3	13	13	15	7	1
410-411	medical care								
420-424, 498	helping activities & related travel					1	1		3
430	meals at home			1		19	20	2	1
432*2	light beverages or snacks	1		3	1	1	3	2	4
440,755	restaurant meals								
450,460	sleeping in bed	89	86	78	63	24	1	1	
470	nap or resting, not in bed								
480-485	private or personal activity								1
490,492*	personal travel							1	
600-698	organizational activity and volunteer work						2	3	4
700-792 (not 755)	entertainment away from home								
800-825, 864,880	active sports or exercise					5	8	7	4
830-899 (not 864, 880)	hobbies, arts, crafts, passive games			1	2		2	3	5
900-908	radio listening			1	2	7	1	1	2
910-919	TV watching/listening				1	1	4	4	4
920	recorded audio media								
930-950, 971	reading			2	4	7	8	9	10
960-963	talking							2	3
970	reading and writing letters							1	1
981-989	relaxing and other passive leisure		1	2		3	2	3	3
990	leisure travel					1	1	6	5
999*	no activity reported			1			1	1	1

TABLE 4-7, CONTINUED

CODES	ACTIVITY	TIME:							
		1213	1313	1413	1513	1613	1713	1813	1913
011-090	regular work & related travel	2	3	2	2	2			
100-110	meal preparation & cleanup	5	2	2	2	3	6	5	3
120,140	routine indoor chores	1	4	4	2	4	1		1
130	routine outdoor chores					2	1		
160-164	repairs, maintenance	3		4	3	4	5		1
171-172	gardening, pet care	2	5	7	10	10	4	1	3
193	household paperwork, mail								1
200-280	child care						1	1	
300-390	shopping and related travel	2	8	11	9	3	3		2
400	washing, dressing, shaving	2		1	2		3		1
410-411	medical care		1		2				
420-424, 498	helping activities & related travel	1	2	1	4	3	2	2	1
430	meals at home	29	12	2		3	16	36	11
432*2	light beverages or snacks	4	1	2	4	5	1		
440,755	restaurant meals	5	1	1					1
450,460	sleeping in bed					1			1
470	nap or resting, not in bed		5	4	7	3	2		3
480-485	private or personal activity	1				3	2	2	
490,492*	personal travel	2	2	1	1				
600-698	organizational activity and volunteer work	4	3	3	2	2	2	2	1
700-792 (not 755)	entertainment away from home		1	1	1	3	1	1	2
800-825, 864,880	active sports or exercise	1	5	5	7	4		2	4
830-899 (not 864, 880)	hobbies, arts, crafts, passive games	6	5	6	3	4	1		4
900-908	radio listening	1	1	1	1	1		1	1
910-919	TV watching/listening	6	11	10	5	9	17	28	38
920	recorded audio media			1	1				
930-950, 971	reading	5	8	8	7	11	15	5	9
960-963	talking	4	7	9	7	6	3	3	3
970	reading and writing letters								
981-989	relaxing and other passive leisure	2		1	3	2	2		
990	leisure travel	3	4	4	6	3	3	1	
999*	activity not reported							1	

TABLE 4-7, CONTINUED

CODES	ACTIVITY	2013	2113	2213	2313	0013	0113	0213	0313
011-090	regular work & related travel								
100-110	meal preparation & cleanup		1						
120,140	routine indoor chores			1					
130	routine outdoor chores								
160-164	repairs, maintenance	1	1						
171-172	gardening, pet care								
193	household paperwork, mail				1				
200-280	child care	1							
300-390	shopping and related travel	1							
400	washing, dressing, shaving		3	5	4	1			
410-411	medical care								
420-424, 498	helping activities & related travel	1	1	1					
430	meals at home	1	1			1	1	1	1
432*2	light beverages or snacks	2	1	1	1				
440,755	restaurant meals								
450,460	sleeping in bed		2	15	54	83	90	90	90
470	nap or resting, not in bed	2	1						
480-485	private or personal activity		1	1					
490,492*	personal travel								
600-698	organizational activity and volunteer work	1	2						
700-792 (not 755)	entertainment away from home	3	2	1	1				
800-825, 864,880	active sports or exercise	3	2	1					
830-899 (not 864, 880)	hobbies, arts, crafts, passive games	7	10	7	2				
900-908	radio listening		2	1	1				
910-919	TV watching/listening	46	40	41	25	4			
920	recorded audio media					1			
930-950, 971	reading	15	15	12	1				
960-963	talking	4	3	2	1				
970	reading and writing letters								
981-989	relaxing and other passive leisure	1							
990	leisure travel	1	2	2		1			
999*	activity not reported	1	1	.					

B. SECONDARY AND TERTIARY ACTIVITIES

Often respondents mentioned that they were doing more than one thing at the same time. In these cases, the second-listed or the activity which they and/or the interviewer judged to be the less important of two simultaneous activities was designated 'ACTIVITY 2' on the time budget form (Appendix C). More rarely, three simultaneous activities were mentioned. Similarly, the tertiary activity was coded 'ACTIVITY 3'. The duration of secondary and tertiary activities is given on the following two tables. As with the primary activity duration table, the activities are ordered from the highest to the lowest ranking according to the total number of minutes devoted to the activity category by all of the respondents.

TABLE 4-8
TAXONOMIC SECONDARY ACTIVITY DURATION

CODES	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
900-908	radio listening	108	29.3	38	83.3
910-918	TV watching/listening	54	54.6	39	75.6
960-963	talking	40	47.6	32	59.5
432*2	light beverages or snacks	19	88.7	14	120.4
930-950	reading	22	49.5	21	51.9
480-485	private or personal activity	14	75.3	11	95.8
430	meals at home	6	76.7	5	92.0
830-870 (not 864)	hobbies, arts, crafts, passive games	5	81.0	4	101.3
200-280	child care	2	187.5	2	187.5
920	recorded audio media	4	55.0	3	73.3
817,880	active sports or exercise	3	55.7	2	83.5
989	relaxing	1	150.0	1	150.0
630,660	organizational activity and volunteer work	2	62.5	2	62.5
100	meal preparation	3	23.3	3	23.3
302	all other shopping	1	45.0	1	45.0
192	routine outdoor chores	1	35.0	1	35.0
411	medical self care	1	25.0	1	25.0
990	leisure travel	1	20.0	1	20.0
120	routine indoor chores	1	15.0	1	15.0
172	pet care	1	15.0	1	15.0

TABLE 4-9
TAXONOMIC TERTIARY ACTIVITY DURATION

CODES	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
900-908	radio listening	10	63.5	7	90.7
960-963	talking	8	61.9	8	61.9
432*2,5	light beverages or snacks	1	300.0	1	300.0
910	TV watching/listening	3	71.7	3	71.7
930-950	reading	5	34.0	5	34.0
755	restaurant meals	1	130.0	1	130.0
484	smoking	1	45.0	1	45.0
989	relaxing	1	40.0	1	40.0
100-110	meal preparation & cleanup	1	20.0	1	20.0

The most prominent secondary and tertiary activities among the respondents were radio listening, television watching/listening, talking and having light beverages or snacks. These will be discussed in turn.

1. Radio Listening

Listening to the radio ranked number eighteen as a primary activity, but first both as a secondary and as a tertiary activity. In fact, the total amount of time spent by the entire sample of retired men in listening to the radio as a primary activity was less than half the amount of time they spent radio listening as a secondary activity. Radio listening does not require much concentration. The ease with which radio may be adapted as a secondary or tertiary activity may be explained by a more subtle phenomenon than the fact that it stimulates only the auditory system. Broadcast radio as experienced by most listeners is characterized by what communications theorists term a high 'signal-to-noise' ratio. The quality of the sound heard is almost as high as that produced by the original sound sources. Commercial television, by contrast, is a low-resolution medium which requires considerably more decoding effort on the part of viewers than if they were viewing the same scene first-hand. Colour television contains the same number of pixels as black and white television, but more information is conveyed, requiring less decoding concentration than for viewers of black and white television. It was quite common for respondents to be carrying out some very demanding task such as driving an automobile at the same time that they were listening to the radio.

Both episode and respondent duration of tertiary radio listening was longer than for either primary or secondary radio listening. Even though it was the highest-ranking tertiary activity, tertiary activities occurred quite infrequently, so firm conclusions based on this finding cannot be justified.

2. Television Watching/Listening

The taxonomic coding system makes no distinction between watching television and listening to television audio. For the same reasons that radio listening is so popular as a secondary and tertiary activity, it is logical that listening to television audio would be a more prominent use of television broadcasts for people who are principally involved in some other activity. Still, it was common for respondents to report eating a meal as a primary activity while actually watching some program. In one case, a respondent made a point of saying that he was primarily watching a sports event, a Grey Cup football game, and that eating his supper was definitely a secondary activity.

There is probably less tendency for the present generation of retired men to use television as a secondary 'background' stimulus than for others who have grown up with a television always in the dwelling. It is probably harder for the older group to 'tune out' the television at will. The **1981 Canadian Time Use Pilot Study**, which surveyed people of all ages over age 14, (Kinsley and O'Donnell 1983: 31) showed a lower mean time spent with television as a primary activity than the present survey did, but more time with television as a secondary activity.

The form of presentation of the **1981 Canadian Time Use Pilot Study** is different from the tables of this work. In order to make them comparable, the data from this study must be transformed in terms of 'all respondents' rather than the respondents who engaged in a given activity. The times for the latter group were given, but by all ten taxonomic television categories rather than an agglomeration of all television activity. Since the number of participants were not reported for each activity, only the 'all respondents' category can be mathematically reconstructed, albeit with some rounding error introduced. Here are the figures of mean minutes per respondents engaged in television watching/listening:

Pilot Study: Primary — 133.8 minutes   Secondary — 48.4 minutes
Current Survey: Primary — 192.5 minutes   Secondary — 32.9 minutes
                    (Kinsley and O'Donnell 1983: 22, 209-210)

3. Talking

Talking ranks third as a secondary activity and tenth as a primary activity. The total amount of time spent talking as a secondary activity by the whole sample was 1905 minutes compared to 3594 minutes as a primary activity. Much of the secondary talking took place during other routine activities such as meals and automobile driving and riding. Talking ranks second as a tertiary activity, but even so, it only involved eight respondents.

4. Having Light Beverages or Snacks

Except within the context of employment, there is no specific category for having light beverages or snacks in the international coding system. The activity occurred commonly enough in this present survey, however, that it was given its own 3-digit taxonomic code: 432.

This activity ranked fourth as a secondary activity with a total of 1686 minutes devoted to it by all respondents and fifteenth as a primary activity with a total of 1988 minutes.[5] In an absolute sense the activity is almost as common as a secondary activity as it is as a primary activity. Relative to other secondary activities, it is more prominent.

5. Overview of Diary Day Generic Secondary and Tertiary Activities

The data on the one minute per hour sample of secondary and tertiary activities across the 24 hours of the diary day are shown on the following two tables. A brief review of the pattern follows.

A quick glance at Table 4-11 reveals that tertiary activities are fairly scarce throughout the day. In only two sample times are there more than two respondents engaged in the same tertiary activity.

0413 to 0613: There was no tertiary activity and minimal secondary activities, mostly radio listening.

0713: Both secondary and tertiary activity were minimal.

0813: This time was the daily peak for tertiary activity, half of

which was electronic media consumption. As waking primary activities were well underway by this hour, secondary activity was quite common, especially listening to the radio.

0913 to 1113: There was minimal tertiary activity in mid-morning, and secondary activity was little changed from 0813, except that there was a gradual increase in television watching/listening as a secondary activity and a concomitant decrease in radio listening.

1213 to 1313: Both secondary and tertiary activity increased around the noon hour, mostly associated with the noon meal. There was little change in type of secondary activity, however, from mid-morning.

1413 to 1513: Secondary activity declined greatly and tertiary activity was non-existent.

1613 to 1713: There was a large increase in secondary activity in late afternoon and some tertiary activity resumed. Secondary talking reached its peak during these two hours. There was increased television watching/listening.

1813: The evening meal was the occasion for the highest number of respondents engaging in secondary activity in the day. Thirteen of these 22 men were watching or listening to television.

1913 to 0013: There was a general trend for both secondary and tertiary activity to decline as the evening grew later. Radio listening was relatively less important than television watching/listening and having light beverages or snacks. Tertiary activity ceased completely after 2313.

0113 to 0313: Since most respondents were in bed, all secondary activity had ceased.

TABLE 4-10
THE NUMBER OF RESPONDENTS ENGAGED IN TAXONOMIC SECONDARY ACTIVITIES DURING ONE SAMPLE MINUTE OF EACH HOUR OF THE DIARY DAY[6]

CODES	ACTIVITY	0413	0513	0613	0713	0813	0913	1013	1113	1213	1313
100-110	meal preparation & cleanup							1			
120,140	routine indoor chores					1					
192	other outdoor housework									1	
430	meals at home					1	1				1
432*2	light beverages or snacks			1			2	2	2	3	
480-485	private or personal activity				1	1	1	1	1	2	2
600-698	organizational activity and volunteer work								1	1	1
800-825, 864,880	active sports or exercise						1		1		
830-899 (not 864, 880)	hobbies, arts, crafts, passive games					1	1	1			1
900-908	radio listening	3	1	2	2	8	7	5	4	8	6
910-919	TV watching/listening	1				1	1	3	4	2	
930-950, 971	reading			1	1	2				1	3
960-963	talking				1	2	2	2	1	2	
981-989	relaxing and other passive leisure							1	1		
	All Activities	**4**	**1**	**4**	**5**	**18**	**16**	**16**	**15**	**19**	**14**

CODES	ACTIVITY	1413	1513	1613	1713	1813	1913	2013	2113	2213	2313	0013
200-280	child care						1	1	1	1	1	1
300-390	shopping and related travel			1								
430	meals at home				1	2	1	1	1			
432*2	light beverages or snacks	2	2	1	1	2	3	3	1	1		
470	nap or resting, not in bed											
480-485	private or personal activity	1	2	2	1	1	1	1	1			
800-825, 864,880	active sports or exercise	1										
830-899 (not 864, 880)	hobbies, arts, crafts, passive games	1							1			
900-908	radio listening	2	2	4	4	2		1		1		
910-919	TV watching/listening	1	2	2	5	13	4	3	5	4	1	
920	recorded audio media			1		1	1			1		
930-950, 971	reading	1										
960-963	talking			5	2	1	3	2	2	1	2	
	All Activities	**6**	**7**	**17**	**20**	**21**	**13**	**13**	**16**	**11**	**6**	**1**

TABLE 4-11
THE NUMBER OF RESPONDENTS ENGAGED IN TAXONOMIC TERTIARY ACTIVITIES
DURING ONE SAMPLE MINUTE OF EACH HOUR OF THE DIARY DAY[13]

CODES	ACTIVITY	TIME: 0713	0813	1013	1113	1213	1313	1613
100-110	meal preparation & cleanup							1
440,755	restaurant meals	1	1					
900-908	radio listening		2	1		1	1	1
910-919	TV watching/listening	1	1		1			
930-950, 971	reading		1			1		1
960-963	talking		1			1		
	All Activities	**2**	**6**	**1**	**1**	**3**	**1**	**3**

CODES	ACTIVITY	TIME: 1713	1813	1913	2013	2113	2213	2313
432*2	light beverages or snacks			1	1	1	1	1
900-908	radio listening	1	1	2	1			
930-950, 971	reading					1		
960-963	talking	1	1	1	1	1		
	All Activities	**2**	**2**	**4**	**3**	**3**	**1**	**1**

III. SIMULTANEITY

All inhabitants of this planet have just 24 hours, 1440 minutes, with which to live each day. Some are better able to use that allotted time than others. In a purely material sense, this means that some are more productive than others. In retirement, the ways in which people use their time determine to a large extent the quality of their lives.

One simple way for a person to 'buy' more time is simply to do more than one thing at once. It is possible, therefore, for the amount of time which respondents 'gained' by engaging in secondary and tertiary activity to be used as one measure of how they spent their time. For the present analysis, this 'simultaneity' measure is the sum of minutes in which respondents engaged in secondary and in tertiary activity. The ranking distinction between secondary and tertiary is not incorporated in the measure. The distribution of this measure for the seventy-eight respondents who engaged in at least some simultaneous activity is shown in the following table:

TABLE 4-12
DISTRIBUTION OF ACTIVITY SIMULTANEITY IN SIXTY-MINUTE GROUPS

```
60
60
60
58
55
55 120
52 120
45 120 180
45 118 180
45 110 170
40 105 170
30  93 165 240
30  90 160 235 300
25  85 160 225 275 353
20  80 155 225 270 345 420
20  75 150 225 265 345 405
15  75 135 195 260 330 380
15  70 135 185 255 330 375 475
10  70 125 181 250 320 365 465     585 640 700     840                     1158
—|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|——
```

The distribution shows a wide range of variability. The median is 160 minutes and the mean is 209.9 minutes. The interquartile range is 215 minutes and the standard deviation approaches the mean, with 199.0 minutes. Since the respondents are so well differentiated by this measure, a linear transformation of this measure, called a 'simultaneity index' will be used later for comparative purposes. The index applies to all respondents, including those who reported no simultaneous activity, and ranges from 0 to 100. The index is specific for this sample and is calculated by dividing the total minutes of simultaneous activity by 11.58, which yields a score of 100 for the respondent whose simultaneous activity lasted 1158 minutes.

IV. WORK-LEISURE CLASSIFICATION

The taxonomic coding system is used in this study since it is the most easily understood system and because it places the data from this study in the same framework as most other time budget research. Taken alone, however, the system is too detailed in ordinary description while being too poor in analytical content. The taxonomic classification system needs to be supplemented by perceptual-functional coding. The first to be considered is the work-leisure classification, which was elicited from respondents by a general review of their diary day after they had completed the chronological sequence. As shown

in Appendix C, the respondents were given the following instructions about the

work-leisure classification system:

> Now I'd like to go back over your time diary with you and ask
> you how you felt about each of the activities you have men-
> tioned. That is, I would like to know, for EACH activity, wheth-
> er you saw it as LEISURE, as WORK or as a MIXTURE of LEISURE AND
> WORK, or whether it was NEITHER LEISURE NOR WORK. So, if we take
> the first activity which you mentioned, [NAME ACTIVITY], how did
> you feel about that activity?

A. DURATION OF WORK-LEISURE

The idea of asking respondents to classify their own activities within

a framework of work-leisure has been used effectively in another Canadian time

budget study by Susan M. Shaw (1982). Shaw concluded:

> ...leisure cannot be considered simply in terms of recreational
> activities, such as reading, sports, hobbies and entertainment
> etc.. Although it is not uncommon to find leisure defined this
> way in recreation research, these activities actually constitute
> only a very small portion of daily leisure events. Except for
> watching television, most activities traditionally thought of as
> recreational activities are infrequent events with respect to
> daily activities. Moreover, some recreational activities, espe-
> cially recreational and adult education classes and fitness ac-
> tivities, are not always defined as leisure by all participants.
> (Shaw 1982: 233)

The relationship between taxonomic coding and respondent

classification of their own activities is shown in the following table.

The agglomerated international codes are ordered according to the total

number of minutes devoted by all respondents to each activity or group

of activities.

TABLE 4-13
TOTAL TAXONOMIC PRIMARY ACTIVITY DURATION IN MINUTES
BY THE RESPONDENTS' WORK-LEISURE CLASSIFICATION

CODES	ACTIVITY	WORK-LEISURE CLASSIFICATION						
		LE	ML	MX	MW	WO	NE	ZZ
450,460	sleeping in bed	38 577	930	1 000			5 465	
910-919	TV watching/listening	17 086		130		30	270	
930-950, 971	reading	9 427				470	5	120
430	meals at home	6 877	85	65		40	1 365	75
171-172	gardening, pet care	1 430	273	540	295	1 965	60	10
830-899 (not 864, 880)	hobbies, arts, crafts, passive games	3 361	270	420		110		
400	washing, dressing, shaving	1 483	125	360		860	1 228	68
300-390	shopping and related travel	2 271	115	146		466	677	120
800-825, 864,880	active sports or exercise	3 413	15	180		160	5	
960-963	talking	3 224	70	75		145	80	
100-110	meal preparation & cleanup	1 504	130	325	5	605	362	45
990,992	leisure travel, waiting	1 681		125		395	181	10
120,140, 173,191	routine indoor chores	895	135	60	135	820	213	2
160-164, 180	repairs, maintenance	1 123	175	180	143	290	180	
432*2	light beverages or snacks	1 868					120	
600-698	organizational activity and volunteer work	855	80	315		330	335	
981-989	relaxing and other passive leisure	1 415					90	
900-908	radio listening	1 440					105	
420-424, 498	helping activities & related travel	525	40	205	15	580	82	
470	nap or resting, not in bed	1 305					140	
011-090	regular work & related travel	45	20	60		430		480
700-792 (not 755)	entertainment away from home	953		45				
999*	no activity reported						10	570
480-485	private or personal activity	485				55		
130,192	routine outdoor chores	98				360	40	
440,755	restaurant meals	332		85			25	
490,492*	personal travel	71				140	185	
193	household paperwork, mail				30	210		
200-280	child care	135					92	
970	reading and writing letters	150				45		
410-411	medical care	90				70	8	
920	recorded audio media	120						

KEY TO WORK-LEISURE CLASSIFICATION ABBREVIATIONS: LE: leisure ML: a mixture, more like leisure MX: roughly equal leisure and work MW: a mixture, more like work WO: work NE: neither leisure nor work ZZ: no data on work-leisure

The leisure category is overwhelmingly dominant. The only major set of activities which respondents judged as being more work than leisure is 'gardening and pet care'. Even in this case a substantial amount of the total time devoted to these activities was classified as leisure. Other more minor activities which were dominantly seen as work are 'helping activities and related travel', 'regular work and related travel',[7] 'routine outdoor chores', 'personal travel and household paperwork'. In some cases, the combination of 'roughly equal leisure and work' and 'neither leisure nor work' amounts to a fairly substantial proportion. 'Sleeping in bed' is one prominent example, as are 'meals at home' and 'washing, dressing, shaving'.

Irrespective of their taxonomic classification, the designation of all activities according to the leisure-work scheme is of interest in itself. The duration of primary activities by the respondents' leisure-work classification is given on the following table.

TABLE 4-14
PRIMARY ACTIVITY DURATION BY RESPONDENTS' WORK-LEISURE CLASSIFICATION

WORK-LEISURE CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
leisure	1426	71.7	91	1123.5
neither leisure nor work	244	46.4	56	202.2
work	213	40.3	63	135.9
roughly equal leisure & work	80	54.0	30	143.9
a mixture, more like leisure	45	54.7	23	107.1
no data on work-leisure	28	53.6	18	83.3
a mixture, more like work	11	56.6	7	89.0

The dominance of leisure activities is especially evident. However, it is noteworthy that activities which were judged 'neither work nor leisure' were actually more common than work activities, as well as all combinations which included some work.

The relative weighting of the primary activity work-leisure classification can be visualized best as a **work-leisure index**, which is calculated according to the proportion of minutes which were classified, respectively, as 'leisure', 'a mixture, more like leisure', 'roughly equal leisure and work,' 'a mixture, more like work', and 'work'.[8] The distribution of the index is shown on Table 4-15.

TABLE 4-15
WORK-LEISURE INDEX VALUES
GROUPED BY FIVE INDEX-UNIT INTERVALS

C1	C2	C3	C4	C5	C6	C7
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						100.0
						99.9
						99.8
						99.3
						99.1
						98.8
						98.6
						98.5
						98.5
						98.3
						98.3
						98.3
						98.2
						98.2
						98.1
						98.0
				90.0		97.9
				89.8		97.7
				89.8		97.5
				89.2		97.5
				89.2		97.1
				89.2		97.0
				88.9		96.9
				88.7		96.9
			84.6	87.4	95.0	96.9
			84.5	87.3	92.7	96.9
	74.6		84.4	87.3	92.4	96.0
	74.3		83.9	87.3	92.3	95.8
	74.3		83.5	87.1	92.2	95.8
	72.3	79.2	82.9	87.1	92.2	95.7
	70.4	76.7	82.4	86.3	91.2	95.3
53.6	70.1	76.3	82.0	86.1	90.7	95.2

Since the distribution is so markedly clustered on the leisure end of the spectrum, the index can only differentiate the relative degree that respondents engaged in any 'work' activity. In subsequent correlation analyses which use the index, only the algebraic ranking of the index will be used for ordinal-scale statistical testing.

B. OVERVIEW OF DIARY DAY WORK-LEISURE

Table 4-16 shows the one-minute per hour sample of the diary day by

TABLE 4-16
THE NUMBER OF RESPONDENTS ENGAGED IN PRIMARY ACTIVITIES WHICH THEY CLASSIFIED ACCORDING TO THE WORK-LEISURE SCHEME BY ONE MINUTE PER HOUR SAMPLE

TIME OF DAY	0413	0513	0613	0713	0813	0913	1013	1113
leisure	74	72	75	67	66	55	57	54
a mixture, more like leisure	2	2	2	2	2	5	5	3
roughly equal leisure & work	2	2	3	6	2	6	3	3
a mixture, more like work							1	
work		3	1	2	7	14	15	24
neither leisure nor work	13	12	10	13	13	9	7	5
no data on work-leisure				1	1	2	3	2

TIME OF DAY	1213	1313	1413	1513	1613	1713	1813	1913
leisure	66	63	60	62	65	68	78	82
a mixture, more like leisure	1		2	3	1			1
roughly equal leisure & work	2	4	6	5	4	2	2	1
a mixture, more like work		2	2	2	2	2		
work	7	11	13	13	14	13	3	4
neither leisure nor work	14	9	7	4	3	5	6	2
no data on work-leisure	1	2	1	2	2	1	2	1

TIME OF DAY	2013	2113	2213	2313	0013	0113	0213	0313
leisure	84	84	81	78	77	77	77	77
a mixture, more like leisure				1	1	1	1	1
roughly equal leisure & work	4	4	4	1	2	2	2	2
a mixture, more like work								
work	1		4	1				
neither leisure nor work	1	2	2	10	11	11	11	11
no data on work-leisure	1	1						

the primary activity work-leisure classification. Since leisure activities are so dominant throughout the day, a summary of the profile will only touch on the work or less-than-all-leisure activities.

0413 to 0713: Work activities were minimal. Since most respondents were still sleeping at these hours, the substantial number who classified their activity as 'neither leisure nor work' were so describing their sleep.

0813 to 1113: Activities classified as work gradually increased to include a daily peak of 26 percent of the respondents by the late morning, with a concomitant decrease in 'neither leisure nor work' activity.

1213: Work activities dropped markedly during the noon hour. A fair number of respondents put eating lunch in the 'neither leisure nor work' category.

1313 to 1713: Work increased again in the afternoon, peaking slightly

at 1613.

      1813 to 2213: Dinner time and television prime time were characterized by very minimal work activities. Leisure activities reached their daily peak with 92 percent of the respondents at 2013 and 2113.

      2313 to 0313: Most respondents were in bed or getting ready for it during this time. Their work-leisure classification was completely unchanged after 0013, with 12 percent labelling their sleep as 'neither leisure nor work'.

C. SECONDARY AND TERTIARY WORK-LEISURE ACTIVITIES

      The following two tables show the duration of secondary and tertiary activities by respondents' work-leisure classification.

TABLE 4-17
SECONDARY ACTIVITY DURATION BY RESPONDENTS' WORK-LEISURE CLASSIFICATION

WORK-LEISURE CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
leisure	269	48.0	75	172.2
neither leisure nor work	11	67.3	11	67.3
work	4	37.5	4	37.5
roughly equal leisure & work	4	28.8	3	38.3
no data on work-leisure	1	60.0	1	60.0

TABLE 4-18
TERTIARY ACTIVITY DURATION BY RESPONDENTS' WORK-LEISURE CLASSIFICATION

WORK-LEISURE CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
leisure	29	67.4	23	85.0
neither leisure nor work	2	47.5	2	47.5

      Secondary and tertiary activities were overwhelmingly classified as leisure. The only notable exceptions were labelled 'neither leisure nor work'. It makes little sense, therefore, to include consideration of secondary and tertiary activities in an attempt to differentiate respondents according to the work-leisure classification.

V. MODE OF SOCIAL INTERCOURSE

The 'mode of social intercourse' activity measure was described in Chapter 2 as being based on paths of communication. It is summarized as follows:

> **introspective** — activities which require no communication from another person or source, e.g. sleeping, dinner preparation alone, gardening alone
> **receptive** — activities which require some initiation of communication by one party, but no direct feedback from the subject, e.g. watching television, reading
> **interactive** — activities which require at least one other person actively participating, and therefore communicating with the subject, so that their behaviour is interdependent, e.g. playing tennis, joint work on a household chore

Unlike the 'work-leisure' classification scheme, which represented perceptions which were elicited explicitly from the respondents, the 'mode of social intercourse' measure is a deductive classification scheme which was coded by the researcher.

Since respondents were not queried about details related to sleeping and other personal activities, these activities are classified by default as **introspective,** according to this scheme. It was possible for simultaneous activities to be coded differently by 'mode of social intercourse'. For example, if a respondent were alone while preparing a meal, that primary activity would be called **introspective.** If he were simultaneously listening to the radio, that secondary activity would be classified **receptive.**

A. DURATION OF PRIMARY ACTIVITIES

The duration of primary activities by mode of social intercourse is given in the following table. The classifications are ranked by total duration of the whole sample.

TABLE 4-19
DURATION OF PRIMARY ACTIVITIES BY MODE OF SOCIAL INTERCOURSE

MODE OF SOCIAL INTERCOURSE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
introspective	925	79.6	91	809.4
receptive	346	84.9	90	326.2
interactive	760	35.4	89	302.7
no data on mode of social intercourse	16	68.1	13	83.8

The dominant 'introspective' category covers activities which were truly self-generated, such as letter-writing and jogging, as well as any other activity which simply was carried out alone with no active influence from others, such as sleeping or resting. 'Receptive' activity, which includes a great deal of television watching/listening, is slightly more important for this sample of retired men than interactive activity, in spite of the fact that most of the men were married and living with their wives.

Since almost all of the respondents participated in primary activities in all three categories of 'mode of social intercourse', the durational mix for the individuals provides a good measure of their social world on their diary days. This mixture is measured by the **'social intercourse index'**. The index assumes an ordinal measure of interactivity, with 'introspective' in the lowest rank, 'receptive' in the medial rank, and 'interactive' in the highest rank. These categories are then used to give weight to the duration of respondent activities.[9] The distribution of the index is grouped by five index units in the following table:

TABLE 4-20
SOCIAL INTERCOURSE INDEX VALUES
ORDERED BY FIVE INDEX-UNIT INTERVALS

		55.0					
		54.9					
		54.9					
		54.7					
		54.6					
		54.4					
		54.3					
		54.2					
		54.2					
		54.1					
		54.0					
		50.0	53.7	60.0			
		49.9	53.6	59.8			
		49.9	53.6	59.3			
		49.7	53.4	59.1			
		49.4	53.3	59.1			
		49.2	52.8	57.7			
		49.1	52.4	57.1			
		49.0	52.3	56.9			
		48.7	51.9	56.8			
		48.6	51.9	56.8			
		48.1	51.6	56.7			
		47.9	51.4	56.5	63.2		
		47.8	51.0	56.5	63.1		
		47.6	50.8	55.6	62.8	69.2	
		47.2	50.8	55.6	62.5	68.2	
		47.0	50.7	55.5	62.2	67.9	
		46.1	50.6	55.4	62.0	66.3	
	45.0	45.8	50.3	55.4	61.8	65.7	71.3
38.2	41.2	45.4	50.2	55.2	60.3	65.4	70.1

|—————|—————|—————|—————|—————|—————|—————|—————|

There is a relatively even distribution of this index. While the median is 54.2, the mean is an almost identical 54.7. This index will be used later for ranked correlations.

B. OVERVIEW OF THE DIARY DAY PRIMARY ACTIVITIES

The one-minute per hour sample of primary activities by mode of social intercourse is given on the following table.

TABLE 4-21
THE NUMBER OF RESPONDENTS ENGAGED IN PRIMARY ACTIVITIES
ACCORDING TO THE MODE OF SOCIAL INTERCOURSE
BY ONE MINUTE PER HOUR SAMPLE

TIME OF DAY	0413	0513	0613	0713	0813	0913	1013	1113
interactive	1	1	2	5	22	34	28	33
introspective	89	89	86	79	56	42	47	39
receptive	1	1	3	6	13	13	14	17
no data on social intercourse				1		2	2	2

TIME OF DAY	1213	1313	1413	1513	1613	1713	1813	1913
interactive	47	37	28	32	28	32	46	28
introspective	29	32	40	44	41	28	11	16
receptive	14	21	21	14	21	31	33	47
no data on social intercourse	1	1	2	1	1		1	

TIME OF DAY	2013	2113	2213	2313	0013	0113	0213	0313
interactive	21	20	13	3	3			
introspective	7	13	24	84	84	91	91	91
receptive	62	57	54	4	4			
no data on social intercourse	1	1						

The primary activities on the diary day by mode of social intercourse are summarized as follows:

0413 to 0713: The classification defaults to 'introspective' for almost all respondents, since most were still in bed. 'Receptive' and 'interactive' activities appeared gradually with a few early risers.

0813: There was a big jump in both 'interactive' and 'receptive' activity, much of it associated with breakfast, but over half of the respondents were still involved in 'introspective' activities.

0913 to 1113: Mid- to late morning activities included much more interaction, and a slight increase in 'receptive' activity.

1213 to 1313: The noon hour showed the daily peak of 'interactive' activity, again associated with the meal. Although there was a decline in interaction an hour later, 'introspective' activity was still in second place.

1413 to 1613: 'Introspective' activities regain first place for the mid-afternoon period, but more than half of the respondents were engaged in either 'receptive' or 'interactive' activity.

1713: Just before the dinner hour, respondents are almost evenly divided among the three modes of social intercourse.

1813: Interactivity almost matches the noon peak associated with the evening meal. 'Receptive' activity has been increasing gradually since 1513.

1913 to 2213: This period is dominated by prime-time television. 'Receptive' activity reached its peak at 2013, the same time when 'introspective'

activity was at its daily low point. 'Interactive' activity gradually declined over the evening hours.

2313 to 0313: There is a marked increase in 'introspective' activity, mostly coded by default for sleeping and other personal activities.

What is impressive about these results is not the amount of time spent on receptive activity. The pre-eminence of television is well known in this society. The important finding is that this sample of retired men, ninety percent of whom were married and living with their wives at the time of the survey, spent much of their waking hours in primary activities which did not involve interaction with others, including their wives. Mealtimes are the major exception.

C. DURATION OF SECONDARY AND TERTIARY ACTIVITIES

The following two tables show the duration of secondary and tertiary activities by 'mode of social intercourse', arranged by total duration of the whole sample.

TABLE 4-22
SECONDARY ACTIVITY DURATION BY MODE OF SOCIAL INTERCOURSE

MODE OF SOCIAL INTERCOURSE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
receptive	190	39.5	64	117.1
interactive	65	61.0	45	88.1
introspective	34	74.0	24	104.8

TABLE 4-23
TERTIARY ACTIVITY DURATION BY MODE OF SOCIAL INTERCOURSE

MODE OF SOCIAL INTERCOURSE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
receptive	17	58.2	14	70.7
interactive	11	88.2	11	88.2
introspective	3	30.0	3	30.0

On the basis of the previous discussion of the secondary and tertiary activities by the taxonomic classification system, it follows that secondary and tertiary activities were predominantly 'receptive'. 'Introspective'

activities were the least common among secondary and tertiary activities, whereas that category had been the predominant one among primary activities. Self-generated activities, or simply activities performed in isolation, normally require enough attention to be the primary activity. 'Receptive' activities such as listening to the radio or even casual television watching/listening lend themselves well to accompanying other activities which require more attention by the actor.

D. OVERVIEW OF THE DIARY DAY SECONDARY AND TERTIARY ACTIVITIES

The one-minute per hour sample data for secondary and tertiary activities by the mode of social intercourse are shown in the following two tables.

TABLE 4-24
THE NUMBER OF RESPONDENTS ENGAGED IN SECONDARY ACTIVITIES CLASSIFIED BY THE MODE OF SOCIAL INTERCOURSE BY ONE MINUTE PER HOUR SAMPLE[6]

MODE OF SOCIAL INTERCOURSE	0413	0513	0613	0713	0813	0913	1013	1113	1213	1313
receptive	4	1	3	3	11	8	9	8	11	9
interactive				1	3	4	3	2	4	3
introspective			1	1	4	4	4	5	4	2
All Activities	4	1	4	5	18	16	16	15	19	14

MODE OF SOCIAL INTERCOURSE	1413	1513	1613	1713	1813	1913	2013	2113	2213	2313	0013
receptive	4	4	7	11	16	5	5	7	7	2	
interactive			8	7	3	6	6	6	4	4	1
introspective	2	3	2	2	2	2	2	3			
All Activities	6	7	17	20	21	13	13	16	11	6	1

TABLE 4-25
THE NUMBER OF RESPONDENTS ENGAGED IN TERTIARY ACTIVITIES
CLASSIFIED BY THE MODE OF SOCIAL INTERCOURSE
BY ONE MINUTE PER HOUR SAMPLE[6]

MODE OF SOCIAL INTERCOURSE	TIME: 0713	0813	1013	1113	1213	1313	1613
receptive	1	4	1		2	1	2
interactive	1	2			1		
introspective				1			1
All Activities	**2**	**6**	**1**	**1**	**3**	**1**	**3**

MODE OF SOCIAL INTERCOURSE	TIME: 1713	1813	1913	2013	2113	2213	2313
receptive	1	1	2	1	1		
interactive	1	1	2	2	2	1	1
All Activities	**2**	**2**	**4**	**3**	**3**	**1**	**1**

A summary of the one-minute per hour sample of 'mode of social intercourse' data for secondary and tertiary activities is as follows:

0413 to 0713: What little secondary activity existed was predominantly 'receptive'. Tertiary activity had barely begun by 0713.

0813 to 1313: Secondary activity was quite common, and fairly uniformly distributed for the whole period, with consistently more respondents participating in 'receptive' secondary activity. Tertiary activity was spotty, only peaking slightly at the 0813 and 1213 meal times, when it was mostly 'receptive'.

1413 to 1513: This slow period for secondary activity was a mixture of 'receptive' and 'introspective'.

1613 to 1813: Secondary activity build toward a daily peak by the evening meal time of 1813, with the 'interactive' mode the most common at 1613, and 'receptive' predominating at 1713 and especially so at 1813. Tertiary activity was scarce and of mixed modes.

1913 to 2213: The television 'prime time' was accompanied by a fairly even distribution of both 'interactive' and 'receptive' activity. Tertiary activity, declining over the period, was mostly 'interactive'.

2313 to 0013: Declining secondary activity was mostly 'interactive' toward midnight, as was the single episode which included tertiary activity.

0113 to 0313: There was no simultaneous activity recorded for the wee hours of the morning.

VI. MUSCULAR MOTILITY

Muscular motility was classified mostly by the researcher. For example, driving a car was called 'moderate' motility, while riding as a passenger was put in the 'minimal' muscular motility category. A walk for exercise was called 'vigorous' muscular motility, as was a walk that included carrying a load. Occasionally, the relative degree of motility was not obvious from the named activity. Gardening, for example, was coded either 'moderate' or 'vigorous'. The muscular motility classifications for these more ambiguous activities were decided only after respondents specified clearly what the activity actually comprised. Occasionally they were asked directly whether the activity involved 'moderate' or 'vigorous' muscle activity.

A. DURATION

The following three tables show the total duration of these categories for primary, secondary and tertiary activities.

TABLE 4-26
PRIMARY ACTIVITY DURATION BY MUSCULAR MOTILITY CLASSIFICATION

MUSCULAR MOTILITY CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
minimal exercise of muscles	1079	91.8	91	1089.0
moderate exercise of muscles	911	30.6	91	305.9
vigorous exercise of muscles	44	69.2	29	105.0
no data	13	81.5	13	81.5

TABLE 4-27
SECONDARY ACTIVITY DURATION BY MUSCULAR MOTILITY CLASSIFICATION

MUSCULAR MOTILITY CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
minimal exercise of muscles	280	47.8	75	177.4
moderate exercise of muscles	9	74.4	8	83.8

TABLE 4-28
TERTIARY ACTIVITY DURATION BY MUSCULAR MOTILITY CLASSIFICATION

MUSCULAR MOTILITY CLASSIFICATION	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
minimal exercise of muscles	30	67.7	23	88.3
moderate exercise of muscles	1	20.0	1	20.0

Secondary and tertiary activities were classified only rarely as re-
quiring other than minimal exercise of muscles. In only two cases was a re-
spondent engaged in a secondary activity which required more exercise of mus-
cles than the simultaneous primary activity. There was one instance of a ter-
tiary activity ranking above the simultaneous secondary and primary activity
in 'muscular motility'. One example was a respondent who was watching
television as a primary activity for six hours while being periodically
interrupted by childcare responsibilities with his grandson. This is a case
for which the standard time budget query system is inadequate to reflect the
reality of the situation. For lack of other data, the childcare activity was
coded as a secondary activity which required moderate muscular motility. An-
other example was of a man who said his primary activity was talking with his
wife while he was secondarily setting the table. The lone tertiary example was
the episode of a respondent who said that he was primarily drinking rum:
listening to the radio was the next in importance and fixing a meal (recorded
as 'moderate muscular motility) was third. More detailed analysis of 'muscular
motility' for non-primary activity is therefore not warranted.

B. MUSCULAR MOTILITY INDEX

An index of the relative muscular motility of the respondents can be
constructed from the duration of activities scaled by the three classifica-
tions of muscle exercise.[10] The distribution of this index, grouped by three
index points, is shown on the following table.

TABLE 4-29
MUSCULAR MOTILITY INDEX VALUES
GROUPED BY THREE INDEX-UNIT INTERVALS

```
                              41.8
                              41.8
                              41.7
                              41.6
                              41.5
                              41.3
                              41.2
                              41.1   44.8
                              40.6   44.4
                              40.5   44.1
                              40.4   43.9
                              40.3   43.5
                      38.8    40.3   43.5
                      38.6    40.0   43.4
                      38.5    39.8   43.2
                      38.3    39.8   42.8
                      38.3    39.7   42.8
                      38.1    39.7   42.8
                      38.0    39.7   42.7
                      38.0    39.7   42.7
                      37.8    39.6   42.7   47.9
                      37.7    39.5   42.6   47.9
                      37.5    39.5   42.4   46.5   50.8
                      37.4    39.5   42.4   46.2   50.3
                      37.4    39.4   42.4   45.4   50.2
              35.4    37.0    39.4   42.4   45.1   49.5
              35.3    36.9    39.4   42.2   45.1   49.0
              35.2    36.9    39.3   42.1   45.1   48.6
              34.0    36.6    39.0   42.0   45.0   48.6   51.6   56.8   59.7
              |———————|———————|———————|———————|———————|———————|———————|———————|———————|
```

    There is relatively little skew in the distribution: while the median
index value is 41.5, the mean is 42.0. The distribution is fairly narrow, how-
ever. The total range is only 25.7; the interquartile range is 4.6, and the
sample standard deviation is 4.5. In spite of this narrow range, the data will
be analysed on an ordinal scale for statistical correlations, since they are
based on the duration of the ordinal classifications of 'minimal', 'moderate'
and 'vigorous' muscular motility.

C. OVERVIEW OF DIARY DAY MUSCULAR MOTILITY

    The following table uses the one-minute per hour sample to summarize
changes in 'muscular motility' through the respondents' diary day.

TABLE 4-30
ONE MINUTE SAMPLES PER HOUR OF THE NUMBER OF RESPONDENTS
ENGAGED IN PRIMARY ACTIVITIES CLASSIFIED BY RELATIVE MUSCULAR MOTILITY

MUSCULAR MOTILITY CLASSIFICATION	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
minimal exercise of muscles	90	87	87	73	62	44	33	35
moderate exercise of muscles	1	4	4	17	27	38	48	48
vigorous exercise of muscles					2	7	8	6
no data				1		2	2	2

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
minimal exercise of muscles	65	51	48	41	52	60	73	73
moderate exercise of muscles	24	36	38	43	32	29	16	16
vigorous exercise of muscles	1	3	4	6	6	2	1	2
no data	1	1	1	1	1		1	

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
minimal exercise of muscles	76	78	81	86	89	91	91	91
moderate exercise of muscles	13	12	9	5	2			
vigorous exercise of muscles	1		1					
no data	1	1						

A summary of the diary day by 'muscular motility' is as follows:

0413 to 0613: Since most respondents were still asleep, almost all activity was in the 'minimal' muscular motility category.

0713 to 1113: Activities requiring 'minimal' muscular motility declined steadily thoughout the mid-morning, mostly replaced by 'moderate' activities. Starting at 0813, a few 'vigorous' activities also appeared, reaching their daily peak by 1013, which is also the day's low point for 'minimal' muscular motility.

1213 to 1513: The noon hour was characterized by a major increase in 'minimal' muscular motility, followed by a gradual increase in both 'moderate' and 'vigorous' activities as the afternoon progressed.

1613 to 0313: With a slight pause between 1813 and 1913, there is a remarkably steady increase in sedentary activities for the rest of the afternoon and evening. By 0113, all respondents are sedentary.

There are, in other words only two periods when this sample of retired men engaged in any significant amount of 'moderate' and 'vigorous' activity: in the mid-morning and in mid-afternoon. At only four of the sample minutes, 0913, 1013, 1113 and 1513, were less than half of the sample engaged in sedentary activities.

VII. COMPANIONS

The people with whom a person shares activities give those activities
a different character than those which are engaged in alone. Although the
meanings vary among respondents, certain objective characteristics of these
companions can be used to differentiate their activities. These include the
number of companions, their gender, their generation relative to the respon-
dent, and their personal or familial relationship to the respondent. These
characteristics will be treated in turn.

A. NUMBER OF COMPANIONS

Although the number of companions is a quantity, the significance of
this characteristic is essentially qualitative. Activities which are carried
out alone often have a very different character than those which are shared by
just one other person. A certain aspect of this different quality has already
been treated by the 'social intercourse' measure, which was based on communi-
cation flow. Activities shared by several people have an inherent quality
which, again, is quite different from those shared by only one other person.
The simple characteristic of the number of companions does not yield any di-
rect information about the degree to which people are actually sharing the
activity. That is why watching television was almost always labelled 'recep-
tive', even when two people were watching the same television receiver.

1. Duration by Number of Companions

Companions were recorded by episode, rather than by individual simul-
taneous activity in the telephone survey. (See Appendix C.) Even if companions
were not sharing all non-primary activities with the respondent (such as smok-
ing), their sharing of the whole episode was considered adequate for an-
alytical purposes. The duration of episodes by the number of companions who
shared the activity is given in the following table.

TABLE 4-31
EPISODE DURATION BY NUMBER OF COMPANIONS

NUMBER OF COMPANIONS SHARING THE ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
0	1302	71.4	91	1021.0
1	569	48.6	87	381.0
2	71	43.5	35	88.3
3	32	85.2	19	143.4
4	14	63.9	8	111.9
5	11	69.3	6	127.0
6	5	63.0	5	63.0
7	3	128.7	3	128.7
9	2	135.0	2	135.0
10	2	40.0	1	80.0
12	1	15.0	1	15.0
20	1	10.0	1	10.0
42	1	95.0	1	95.0
total with 1 or more companions	712	51.0	88	412.6
total with 2 or more companions	143	60.4	56	154.4
total with 3 or more companions	72	77.1	34	163.3
no data on number of companions	33	55.1	24	75.7

The table indicates that the episodes which were shared by no companions were very prominent in the diary day of the respondents. These figures are inflated somewhat by the fact that all sleeping, personal care and private activities were coded by default as being episodes with no companions present. Including these sleep and personal activities, respondents spent on average just over seventeen hours of their diary day without somebody else sharing the activity. In some cases, there was another person present nearby, but there was no indication from the elicited time budget that that person was interacting with the respondent. Since most time budget research focuses on one subject at a time, a lot of minor, but real social interaction may have actually taken place without being recorded.

It was also common for respondents to spend some time with one companion. In fact, all but three of the respondents spent at least some of their diary day with one companion or more.

The respondents spent time with more than one companion quite rarely. Activity episodes in which respondents were accompanied by more than one person occupied less than 7% of the total time which all respondents had available on their diary days. Episodes which were shared by more than three companions were even more scarce, constituting slightly more than 4% of the total

time available to all respondents. The one exceptional case in which a respondent reported having forty-two companions was when he was the principal organizer of a local bowling tournament.

Although there were more episodes with two companions than with three, both the 'mean episode minutes' and the 'mean respondent minutes' are considerably higher for groups of four people (three companions) than for groups of three people (two companions). A possible explanation may be the notion that the basic social unit in North America is the married couple.

Formal occasions are often good situations in which to observe basic social characteristics. In North America, wedding, party and dinner invitations are normally sent to married couples rather than individuals, unless a person is not married. This rule is even observed when the host is tied principally to one of the married people, through occupation or some voluntary association. The central role of the married couple pervades David Schneider's classic account (1980) of 'American kinship'. Corresponding forms of a 'dominant' or 'characteristic' social relationship for other societies might be 'father-son', in the Muslim world, (Barth 1953: 29-33) or 'mother's brother's sister's son', in societies such as the Murngin in Australia, where matrilateral cross-cousin marriage is the norm. (Lévi-Strauss 1969: 168-196). In the context of North American social structure, married couples relate most easily to other married couples. Four people, especially if they constitute two couples, form a less awkward grouping than three people.

2. Overview of the Diary Day by Number of Companions

The one-minute per hour sample is used to summarize changes in the number of companions sharing activity episodes with respondents throughout their diary days. These figures are shown in the following table.

TABLE 4-32
ONE MINUTE SAMPLES PER HOUR OF THE NUMBER OF RESPONDENTS
WHO SHARED ACTIVITY EPISODES WITH A GIVEN NUMBER OF COMPANIONS

NUMBER OF COMPANIONS SHARING THE EPISODE	0413	0513	0613	0713	0813	0913	1013	1113
0	89	89	88	84	65	55	62	57
1	2	2	3	6	25	27	19	22
2						2		4
3				1	1	3		3
5						1	1	
6							1	1
7						1		
10							1	
42							1	1
total with 1 or more companions	2	2	3	7	26	34	25	31
total with 2 or more companions				1	1	7	6	9
total with 3 or more companions				1	1	5	6	5
no data						2	4	3

NUMBER OF COMPANIONS SHARING THE EPISODE	1213	1313	1413	1513	1613	1713	1813	1913
0	47	48	57	60	56	49	26	44
1	33	32	22	22	25	32	48	31
2	4	5	3	4	3	4	8	3
3	4	2	3	2	3	3	3	2
4	1		1		2	1	2	4
5			1	1	1		1	2
6			1	1				1
7							1	
9			1	1				1
10							1	
total with 1 or more companions	42	42	32	29	33	42	63	44
total with 2 or more companions	9	10	10	7	8	10	15	13
total with 3 or more companions	5	5	7	3	5	6	7	10
no data	2	1	2	2	2		2	3

NUMBER OF COMPANIONS SHARING THE EPISODE	2013	2113	2213	2313	0013	0113	0213	0313
0	41	41	50	73	87	91	91	91
1	31	36	34	14	3			
2	4	4	2					
3	5	5	3	3	1			
4	3	1						
5	3	1						
7	1	1	1	1				
9	1							
total with 1 or more companions	48	48	40	18	4			
total with 2 or more companions	17	12	6	4	1			
total with 3 or more companions	13	8	4	4	1			
no data	2	2	1					

The diary day of respondents according to the number of companions may be summarized as follows:

0413 to 0713: All but a handful of the respondents reported no companions during the early morning.

0813 to 1013: There was a marked jump in the number of respondents sharing activities during this period, especially while sharing breakfast, followed by a smaller decline.

1113 to 1313: The late morning through noon and early afternoon was characterized by another increase in activities shared with companions. The noon meal appears to be an important associative factor.

1413 to 1613: In mid-afternoon, there was another decline in companions, similar to the level reached at 0913.

1713 to 1813: There was marked increase in the number of shared respondent activity episodes, reaching the daily peak of companionship during the normal time of the evening meal.

1913 to 2213: Companionship declined somewhat, but was still higher during the television 'prime time' period than any time in the morning or afternoon.

2313 to 0313: Reported number of companions declined quickly in the late evening, and disappeared by the wee morning hours.

B. GENDER OF COMPANIONS

Since other research (Shaw 1982) indicates that males and females tend to exhibit different patterns of daily activities, the gender composition of the activity companions of retired men was recorded in the present survey.

1. Duration by Gender of Companions

The next table summarizes the duration of episodes according to the gender of the companion or companions who shared part of the diary day with the sample respondents.

TABLE 4-33
EPISODE DURATION BY GENDER OF COMPANION(S)

GENDER OF COMPANION(S) SHARING THE EPISODE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
no companion recorded	1302	71.4	91	1021.0
female	536	49.9	83	322.0
mixed gender groups	73	66.3	32	151.2
male	89	49.1	41	106.5
no data on companion gender	46	44.2	29	70.2

From all of the time which all respondents had available on their diary day, an average of 20.4% was spent with one or more females. As will be seen, much of that time was spent with the respondents' wives. 3.7% with Mixed gender groups accounted for 3.7% of all respondents' time and other males for 3.3%. These figures make it clear that most of the 'male' time was, in fact, not spent with other males, but alone.

2. Overview of the Diary Day by Gender of Companions

The one-minute per hour sample is used to show changes in the gender of companions sharing activity episodes with respondents throughout their diary days. The data appear on the following table.

TABLE 4-34
ONE MINUTE SAMPLES PER HOUR OF THE GENDER OF COMPANIONS
WHO SHARED ACTIVITY EPISODES WITH RESPONDENTS

GENDER OF COMPANION(S) SHARING THE EPISODE	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
no companion recorded	89	89	88	84	62	55	62	57
female	2	2	3	5	21	22	14	18
mixed gender groups						3	3	5
male				2	5	8	8	7
no data on companion gender						3	4	4

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
no companion recorded	46	48	57	60	56	49	26	44
female	33	32	22	18	22	33	54	30
mixed gender groups	5	4	5	5	5	7	6	10
male	5	5	4	6	6	2	3	4
no data on companion gender	2	2	3	2	2		2	3

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
no companion recorded	41	41	50	73	87	91	91	91
female	31	37	35	14	3			
mixed gender groups	11	7	4	3				
male	6	4	1	1	1			
no data on companion gender	2	2	1					

The diary day according to the number of companions may be summarized as follows:

0413 to 0713: The few recorded companions were mostly females.

0813: The vast majority (84%) of companions at normal breakfast time were females.

0913 to 1113: The daily peak for activities shared with other males was reached at 0913 and again at 1013. Mixed gender groups appeared for the first time during this period. Female companion episodes declined and rose again in late morning.

1213 to 1313: The noon meal and the following hour were accompanied by females for more than one third of the respondents. Another 10% or so had male or mixed gender groups sharing their activities over midday.

1413 to 1713: Male and mixed group companions continued little changed from 1113 through 1613. Female companions were less frequent than at midday, except as the evening meal approached in late afternoon.

1813: The evening meal was accompanied by one or more females for 59% of the respondents. Male companions and mixed gender groups accounted for another 10% at this time.

1913 to 2213: Television prime time was spent in the company of females for from 33% to 40% of the respondents. The daily peak for mixed gender groups was reached at 2013, delining noticeably thereafter.

2313 to 0313: Reported companions decreased considerably as the night grew later.

C. GENERATION OF COMPANIONS

There has been a great deal of discussion, both inside and outside of the gerontological literature (Kimmel 1974: 29-32) about preferences of aged people toward interacting with people of their own and other generations. It is well to note that for significant numbers of 'young-aged' people, such as those in their late sixties, there may still be people who are a whole generation senior to them. It is becoming increasingly common for recently-retired people needing to care for their very old parents who are aged, say, in their late eighties and into their nineties. A time-budget survey is an excellent means to ascertain the extent to which people actually do cross generational boundaries in their social relationships. The 'generation' of activity episode companions was therefore recorded during the present survey.

The generation of companions was designated relative to the respondent. In the case of kindred, the generation designated was decided by default according to the normal placement of those people. For example, a wife, sister or brother was called the 'same' generation as the respondent. A son, daughter, nephew, or niece was designated as 'younger' generation. In cases where there might be some ambiguity for other people, an age difference of twenty years was deemed sufficient to differentiate generations.

1. Durations of Episodes by Generation of Companions

The data on episode duration by the relative generation of the companions who shared activity episodes with respondents follows:

TABLE 4-35
EPISODE DURATION BY RELATIVE GENERATION OF COMPANION(S)

GENERATION OF COMPANION(S) SHARING THE EPISODE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
no companion recorded	1302	71.4	91	1021.0
same generation as respondent	541	51.4	84	331.1
mixed generation groups	76	59.1	28	160.5
younger generation than respondent	78	46.1	33	108.8
no data on companion generation	48	45.1	28	77.4
older generation than respondent	1	57.0	1	57.0

By far the largest proportion (73%) of the time spent with companions was with people the same generation as the respondents. This was 21% of the

total amount of time available to all respondents on their diary days. Time spent with mixed generation groups was a distant second with 12% of the time shared with companions. People in a generation younger than the respondent were companions in activity episodes for 9% of that time.

2. Overview of the Diary Day by Generation of Companions

The one-minute per hour sample is utilized to show changes in the relative generation of companions sharing activity episodes with respondents thoughout their diary days. The data are shown on the following table:

TABLE 4-36
ONE MINUTE SAMPLES PER HOUR OF THE RELATIVE GENERATION OF COMPANIONS WHO SHARED ACTIVITY EPISODES WITH RESPONDENTS

GENERATION OF COMPANION(S) SHARING THE EPISODE	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
no companion recorded	89	89	88	84	65	55	62	57
same generation as respondent	2	2	3	6	23	24	16	20
mixed generation groups						5	3	4
younger generation than respondent				1	3	4	4	6
no data on companion generation						3	5	4
older generation than respondent							1	

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
no companion recorded	46	48	57	60	56	49	26	44
same generation as respondent	34	31	25	21	25	30	47	29
mixed generation groups	4	6	4	3	3	5	11	8
younger generation than respondent	5	3	2	5	5	7	5	6
no data on companion generation	2	3	3	2	2		2	4

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
no companion recorded	41	41	50	73	87	91	91	91
same generation as respondent	33	39	36	16	3			
mixed generation groups	8	6	3	1				
younger generation than respondent	6	3	1	1	1			
no data on companion generation	3	2	1					

A summary of the diary days of the respondents by the relative generation of companions is as follows:

0413 to 0613: The few early morning companions were all the same generation.

0713 to 0813: The companions of the same generation increased quickly by 0813. The few others were all younger generation.

0913 to 1113: Mixed generation groups appeared for the first time by mid-morning. The number of same generation companions in the survey declined slightly by 1013. The single episode with an older generation companion was

also in progress at that time.

1213 to 1713: There was a general increase, as has already been seen, of companions associated with the noon meal, followed by an afternoon decline and a revival before the evening meal. The relative change in the generational composition of these companions, however, was not dramatic throughout the afternoon, although the number of younger generation companions reached its daily peak by 1713.

1813 to 2213: The highly 'companionable' evening meal time of 1813 is the daily peak time for both the same generation companions and for mixed generation groups. Most of television 'prime time' is also characterized by relatively high numbers of younger companions and mixed generation groups, declining by 2213.

2313 to 0313: As the evening grew late, all companions declined, and disappeared by 0113.

VIII. RELATIONSHIP OF COMPANION(S) TO THE RESPONDENTS

The companions who shared activity episodes with the respondents each occupied a principal social status relative to the respondents. Although these statuses are multifarious, they have been collapsed into these basic categories: 1) The **'wife'** status was considered important enough to not be subsumed with 2) a **'relative'**, which was any other of a respondent's bilateral kindred, including 'in-laws', 'nieces', 'nephews' (even if physically related through the respondent's wife). 3) A **'friend'** was any acquaintance or comrade whose relationship with the respondent was not superficial. 4) A **'stranger'** was someone whose name was unknown to the respondent or whose social relationship with the respondent was superficial. 5) When respondents participated in activities with people whose principal social statuses relative to the respondent belonged to more than one of the previous four categories, they were labelled a **'mixed relationship group'**.

A. DURATION

The duration of activity episodes by these relationships or principal social statuses of companion(s) relative to the respondents is shown in the

following table:

TABLE 4-37
EPISODE DURATION BY RELATIONSHIP OF COMPANION(S) TO RESPONDENTS

RELATIONSHIP OF COMPANION(S) TO THE RESPONDENT	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
no companion recorded	1302	71.4	91	1021.0
wife	470	49.8	79	296.4
relative	114	56.0	37	172.4
friend	79	51.1	37	109.0
mixed relationship group	27	71.7	15	129.0
no data on relationship	41	46.7	26	73.7
stranger	14	31.8	10	44.5

Seventy-nine of the 83 married respondents spent time with their wives on their diary days; this time averaged (mean) almost five hours or about 83% more time than the entire sample spent with all other companions, including occasions when their wives were present in 'mixed relationship groups'. Thirty-seven respondents were accompanied by relatives an average of almost three hours on their diary days. The same number averaged somewhat less than two hours with friends. Time spent with 'mixed relationship groups' and strangers was considerably less common for the retired men in this sample.

B. OVERVIEW OF THE DIARY DAY BY RELATIONSHIPS OF COMPANION(S)

The one-minute per hour sample is used to provide a summary of the diary days of respondents by the principal relative social statuses or relationships of their activity episode companions. These data are used in the following table:

TABLE 4-38
ONE MINUTE SAMPLES PER HOUR OF THE RELATIONSHIPS OF ACTIVITY EPISODE COMPANIONS WITH RESPONDENTS

RELATIONSHIPS OF COMPANION(S) TO THE RESPONDENT	0413	0513	0613	0713	0813	0913	1013	1113
no companion recorded	89	89	88	84	65	55	62	57
wife	2	2	3	4	20	21	14	16
relative				2	4	5	2	5
friend				1	2	6	6	4
mixed relationship group							1	3
no data on relationship						3	5	3
stranger						1	1	3

TABLE 4-38, CONT.

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
no companion recorded	46	48	57	60	56	49	26	44
wife	28	25	17	16	20	28	45	26
relative	7	6	3	4	4	10	15	12
friend	5	5	8	7	6	3	3	4
mixed relationship group	2	3	2	2	3	1	1	2
no data on relationship	2	3	3	2	2		1	3
stranger	1	1	1					

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
no companion recorded	41	41	50	73	87	91	91	91
wife	27	33	32	13	2			
relative	12	9	5	3	1			
friend	6	3	1					
mixed relationship group	3	3	2	2	1			
no data on relationship	2	2	1					

The following is a summary of the information in the preceding table:

0413 to 0713: Since most respondents were still sleeping in the early morning, the few companions were mostly wives.

0813 to 0913: Most of the breakfast-time companions were wives, but the number of relatives and friends increased by 0913. The rare, but continuous companionship with strangers began by 0913 and continued until 1413 without resumption thereafter.

1013 to 1113: The companionship with wives decreased noticeably in the late morning, and continued at a similar level with others.

1213 to 1313: At midday, wives figured more prominently as companions than in the morning. Other companions were also common at this time.

1413 to 1613: Mid-afternoon showed a drop of wife-companions similar to late morning. Friends as companions reached their daily peak at 1413, declining slightly thereafter.

1713 to 1813: Both wives and other relatives increased as companions up to their daily peak by the dinner hour. Almost half of the respondents were sharing an activity episode with their wives at 1813.

1913 to 2213: Television 'prime time' was shared by wives and relatives by a number of the respondents, although a second daily peak of friend-companions was reached by 2013.

2313 to 0313: A steady decline of all companions continued as respondents went to bed.

IX. THE MOST SATISFYING ACTIVITY

The analysis of the daily activity of retired men so far in this chap-
ter has treated activities on an objectively equal basis, both in terms of
duration and with respect to the changes that took place over the twenty-four
hours of the diary day. With apologies to George Orwell, all minutes are
equal, but some minutes are more equal than others! Some activities are more
important to people than others in ways that a strict accounting of minutes
and episodes does not reveal. It was for that reason that respondents were
asked to identify the **most satisfying activity** of their diary day after their
time budget had been elicited. The results are most interesting. The number of
respondents who mentioned each taxonomic activity is listed on Table 41 on the
following page.

The most obvious finding from this question is the great variety of
activities which respondents so identified. **Gardening** is the most common ac-
tivity mentioned as most satisfying. Since almost one-third of the sample did
some gardening on their diary day (See Appendix G, code 171.), this is not
unexpected. There could hardly be a simpler activity than **conversations**, but
it ranks a close second. The third-ranking activity is **walking for pleasure**.
The fourth-ranking category consists of those unfortunate respondents who
reported that **no activities were satisfying**. The fifth-ranking was **religious
activities**, in spite of the general paucity of reported religious activity
among the whole sample. (See Appendix G, codes 642 through 652.) Considering
the large amount of time which respondents spent with television, reading and
meals, (See Table 4-2.) the fact that these activities ranked poorly as **most
satisfying activities** is significant. Taken together, sports and passive
recreation is an important general category of **satisfying activities**, as are a
variety of work activities.

TABLE 4-39
THE MOST SATISFYING ACTIVITY BY TAXONOMIC CLASSIFICATION

CODE	ACTIVITY	NUMBER OF RESPONDENTS
11	regular work	3
100	food preparation	3
120	routine indoor chores	3
163	car care/maintenance	1
164	home improvements	3
171	gardening	10
302,341	shopping	2
411	medical care-self	1
424,498,630	helping activities	3
430	meals at home	1
642,650,652	religious activities	4
660	fraternal & social organizations	1
700	attending sports event	1
711	exhibitions, fairs	1
750	entertaining or visiting with friends	1
803	golf	3
804	swimming	1
806	bowling, lawn bowling	3
808	exercises	1
817	pleasure driving	1
821	walking for pleasure	7
824	bicycling	1
825	motorcycling	1
830	hobbies	2
833	leisure equipment repair	1
835	carpentry, woodwork	3
870	games, cards, etc.	2
880	other leisure activity	1
907	radio listening: sports	1
910	TV general, unspecified	2
918	TV public affairs, documentary	1
937,942,971	reading	3
962,963	conversations	9
998*2	all activities were equally satisfying	2
999*	no activities were satisfying	5
0	no data about activity satfaction	3

A. DURATION OF THE MOST SATISFYING ACTIVITY

Although the **most satisfying activity** is obviously independent of the amount of time spent on it, the amount of time so spent is itself useful information. The distribution of the duration of the **most satisfying activity** is given in the following table. Respondents who identified **no satisfying activity** or who claimed that **all activities were equally satisfying** are excluded from the table.

TABLE 4-40
DURATION OF THE MOST SATISFYING ACTIVITY
GROUPED BY SIXTY-MINUTE INTERVALS

120								
115								
110								
105								
105	180							
105	180							
105	180							
100	180							
60	100	180						
60	95	165						
60	90	160						
45	90	151						
45	90	150	240					
45	90	150	240					
38	90	150	240					
37	85	150	235					
35	85	145	225	298				
30	80	135	220	270		420		
30	80	135	213	270		420	480	
15	75	130	205	270	325	395	480	
10	70	130	185	250	320	390	465	530

The table reveals that there is a wide range of the amount of time which respondents spent on their **most satisfying activity.** The interquartile range is 150 minutes and the standard deviation is 131 minutes. The median is 140 minutes (the mean of 135 and 145 minutes), and the mean is 175 minutes. Since spending a lot of time on satisfying activities is obviously desirable, this finding is an encouraging sign that many of these men are enjoying their retirement.

B. PERCEPTUAL-FUNCTIONAL CODING OF THE MOST SATISFYING ACTIVITIES

Each time a respondent participated in an activity during his diary day which he designated as his most satisfying activity, the same perceptual-

functional coding scheme which has already been discussed could be applied to those selected activities. By examining the patterns of these classifications, it is possible to garner the general characteristics of activities which carried the most positive meaning for the respondents on their diary day. The **social tenure** and the **indoor-outdoor** classifications will be treated in Chapter 5. The other three perceptual-functional classification schemes (See Appendix C.) are discussed here.

1. Most Satisfying Activities and Social Intercourse

The data on the **social intercourse** categories of the activities which respondents chose as the most satisfying are given in the following table:

TABLE 4-41
THE NUMBER OF RESPONDENTS WHOSE MOST SATISFYING ACTIVITIES
ARE CLASSIFIED BY GIVEN SOCIAL INTERCOURSE CATEGORIES

SOCIAL INTERCOURSE CLASSIFICATION	NUMBER OF RESPONDENTS
Introspective	34
Interactive	26
Introspective and Interactive [11]	8
Receptive	7
No Data on Social Intercourse or Not Applicable [12]	16

These findings are instructive on several counts. First, **introspective** activities are not only the most common activities on the diary day, (See Table 4-19.) they are also the most common of the activities which respondents called the 'most satisfying'. Second, there were a substantial number of respondents for whom **interactive** activities were the most satisfying. It appears, however, that for the eight respondents for whom the most satisfying activity was **introspective** during at least one episode and **interactive** during at least one other, the mode of social intercourse did not appear to govern its choice as the most satisfying activity.

At first sight, the last statement may appear to have a reifying quality about it. It is not so intended. Although the respondents do not carry

such terms as INTROSPECTIVE, RECEPTIVE or INTERACTIVE in their minds as they go about their daily lives, these conceptual categories are applied to those activities in this study because of a justifiable assumption that they represent qualities of activities which are not only understandable, but are also meaningful to those respondents.

Finally, the number of receptive activities which were chosen as most satisfying were far lower than the frequency and duration of those activities during the diary day of all of the respondents. For all the time which was spent watching television, perhaps it really is recognized as a basically unsatisfying opiate by most retired men. (See Tables 4-2, 4-19 and 4-41.)

2. Most Satisfying Activities and Work-Leisure

Respondent judgements about where their most satisfying activities fit according to the work-leisure scheme are given in the next table:

TABLE 4-42
THE NUMBER OF RESPONDENTS WHOSE MOST SATISFYING ACTIVITIES
ARE CLASSIFIED BY GIVEN WORK-LEISURE CATEGORIES

WORK-LEISURE CLASSIFICATION	NUMBER OF RESPONDENTS
Leisure	49
Work	8
Work and Leisure [13]	3
Roughly Equal Work [13] and Leisure	3
A Mixture, More Like Leisure	1
Neither Work nor Leisure	1
Other multiple combinations of the above categories	9
No Data on Work-Leisure or Not Applicable	17

3. Most Satisfying Activities and Muscular Motility

The muscular motility of those same 'satisfying activities' are shown in the next table:

TABLE 4-43
THE NUMBER OF RESPONDENTS WHOSE MOST SATISFYING ACTIVITIES
ARE CLASSIFIED BY GIVEN MUSCULAR MOTILITY CATEGORIES

MUSCULAR MOTILITY CLASSIFICATION	NUMBER OF RESPONDENTS
Moderate Exercise of Muscles	37
Minimal Exercise of Muscles	28
Vigorous Exercise of Muscles	5
Moderate and vigorous Exercise of Muscles	3
Minimal and Moderate Exercise of Muscles	1
No Data on Muscular Motility or Not Applicable	17

Although **minimal** muscular motility considerably outweighs **moderate** and **vigorous** muscular motility for the whole sample of activities on the respondents' diary day, **moderate** exercise of muscles is favoured by more respondents in terms of satisfaction. About five percent of the respondents chose vigorous activities as their most satisfying, even though these activities accounted for only about 2% of the total episodes and about 2% of the total amount of time available to respondents on their diary day. It is clear, therefore, that relatively higher muscular motility is an important factor in respondents' choice of their most satisfying activity.

X. A SUMMARY OF YESTERDAY'S ACTIVITIES

The most pervasive mode of analysis of the activities of the retired men was **temporal**. Both **duration in minutes** and an **overview of the diary day** via a one-minute per hour sampling system were used.

The results were reported according to a **taxonomic** system. This classification scheme is almost identical to a three-digit numerical system which is used by most modern time budget researchers.

In addition, the survey elicited activities which occurred simultaneously; these were coded as **primary, secondary,** and **tertiary** activities. This and similar categories are now quite commonly used in time budget research.

Although these categories served as a good introduction to the survey results, they were judged inadequate for a thorough analysis which required finding salient commonalities and differences among activities relevant to the current research problem of the relationship between housing and the activity patterns among the respondents.

A **simultaneity index** was developed for this study to compare the amount of 'extra' activity time which respondents gained on their diary day by doing more than one thing at once.

In order to better understand something of the significance of these activities for respondents, they were asked to classify the previously-elicited activities according to a **work-leisure** classification scheme. **'Leisure'** activities dominated most of the diary day for all respondents.

The researcher coded the diary day activities according to three categories of the **mode of social intercourse**, namely **introspective, receptive,** and **interactive** as a way of comparing activity patterns of respondents according to communication paths which they represented. Since **introspective** activities dominated most respondents' diary day, it was the occurrence of variations of **receptive** and **interactive** activities through the diary day among the different respondents which provided the most insight on their activity patterns according to this measure.

Some activities are more 'active' than others. A classification scheme, termed **muscular motility** was used to provide this sort of distinction. A simple scale of **minimal, moderate** and **vigorous exercise of muscles** was the

standard for this measure. Most activities fell naturally into one of the three categories. Occasionally it was necessary for the researcher to query respondents on this point when 'muscular motility' of a given activity was ambiguous. **Vigorous muscular motility** was quite rare and the **minimal** category was by far the most common.

Three indices, a **work-leisure index,** a **social intercourse index,** and a **muscular motility index** were also developed for this study in order to allow for ordinal correlation testing with other variables.

Activities were classified according to the **companions** who shared them as well. These companions were differentiated by their **number,** their **gender(s),** their **generation** relative to the respondent and their **relationship** or **social status** with respect to the respondent. Ordinal indices were not derived from these variables.

Finally, in order to differentiate simple **durational** and **episodic** aspects of these activities, respondents were asked to name the **most satisfying activity** of their diary day. The conceptual framework of the chapter was reviewed by re-examining just these activities according to most of the above-mentioned classification schemes.

Another major aspect of the daily activities of retired men is their **location.** Locational characteristics of these activities deserve more extensive treatment in the following chapter.

[1]The original research design called for the possibility of recording two primary, as well as a secondary and tertiary activity, in cases where the respondent felt that two simultaneous activities were equally important. This practice was used for the **1981 Canadian Time Use Pilot Study.** (Kinsley and O'Donnell 1983: 19) However, due to a misunderstanding, the volunteer interviewer did not follow this model. Since it therefore would not have been possible to achieve data consistency with the large number of interviews which were conducted by the author, all of the data were converted **post hoc** to the simpler single primary, secondary and tertiary format. In most cases, the first listed activity was designated as the primary activity. Occasionally, a second-listed activity seemed to the author to be better designated as the primary activity.

[2]The activities with codes followed by an asterisk [*] were coded by the author in a form which is consistent with the international coding scheme which was published in the **1981 Canadian Time Use Pilot Study** (Kinsley and O'Donnell 1983: 200-211), but were not included in the report.

[3]The technology exists to overcome the time limitation of television and radio. Video recorders (VCR's) can be programmed to record a television program on a given channel for a specific period of time. Although this kind of machine has gained a great deal of public acceptance recently, none of the respondents to this survey used a VCR on their diary day.

[4]There is also a technological exception to the spatial restriction of television viewing. Battery-powered portable television receivers exist, but their small screen and lack of connection to standard log-periodic directional antennas or cable systems degrade the quality of reception. Again, no respondents to the present survey reported using or even owning such a unit.

[5]The single episode which included 'having light beverages or snacks' as a tertiary activity five hours long was anomalous in the sample and almost certainly an inaccurate report by a respondent who was too ill on the first attempt to interview him. He generally gave minimal information during the actual interview.

[6]In cases where there was no secondary or tertiary activity recorded for a given row or column of data, that row or column is omitted from the table. Empty cells are left blank.

[7]Men who were 'semi-retired' were also qualified for this study if their total employed work time was less than one-quarter of a full-time job in the past 12 months and whose principal income was derived from pensions and similar sources. Three of these respondents actually spent some time at an employed job on their diary day.

[8]The 'work-leisure index' is calculated for each respondent as follows. Where WKLINDEX = work-leisure index, LESCORE = the number of 'leisure' minutes X 5, MLSCORE = the number of 'a mixture, but more like leisure' minutes X 4, MXSCORE = the number of 'roughly equal leisure and work' minutes X 3, MWSCORE = the number of 'a mixture, but more like work' minutes X 2, WOSCORE = the number of 'work' minutes, and WKLMINU = 1440 - 'neither leisure nor work' minutes - 'no data on work-leisure' minutes,

$$WKLINDEX = \frac{LESCORE + MLSCORE + MXSCORE + MWSCORE + WOSCORE}{WKLMINU \times 0.05}$$

[9]The 'social intercourse index' for each respondent is calculated as follows. Where SCNINDEX = the 'social intercourse index', NTROSPEC = the number of 'introspective' minutes, RECEPT = the number of 'receptive' minutes x 2, INTERACT = the number of 'interactive' minutes x 3 and SCNMINU = 1440 - 'no data on social intercourse' minutes,

$$SCNINDEX = \frac{NTROSPEC + RECEPT + INTERACT}{SCNMINU \times 0.03}$$

[10]The muscular motility index is calculated as follows: Where MOTINDEX = 'muscular motility index', MOT1MINU = 'minutes of minimal exercise of muscles', MOT2MINU = 'minutes of moderate exercise of muscles', MOT3MINU = 'minutes of vigorous exercise of muscles', and MOTZMINU = 'minutes of no data on exercise of muscles',

$$MOTINDEX = \frac{(MOT1MINU + (2 \times MOT2MINU) + (3 \times MOT3MINU)) \times 100}{(4320 - (3 \times MOTZMINU)}$$

[11]In a number of cases, the respondent participated in more than one episode of his most satisfying activity on his diary day. It was therefore possible, in different circumstances, for there to be different perceptual-functional classifications for the same taxonomic activity during different episodes. For example, it was possible for walking for pleasure or gardening to be introspective during one episode and interactive during another.

[12]Ten respondents reported either all activities were equally satisfying or no activities were satisfying or gave no information about activity satisfaction. (See Table 7-41.) For six others, no social intercourse classification was possible from the available data on their most satisfying activities.

[13]Work and Leisure and Roughly Equal Work and Leisure are different. The former refers to most satisfying activities with multiple episodes for given respondents, which they judged as work in at least one case and as leisure in at least one other case. The latter denotes one or more episodes for a given respondent which he judged as itself sharing both work and leisure approximately equally.

CHAPTER FIVE
YESTERDAY'S LOCATIONS:
SOCIAL SPACE AND DAILY TIME OF SURVEY RESPONDENTS

I. IDENTIFYING THE LOCATIONS OF ACTIVITIES

Notions of **location** provide a unifying core to geographical discourse. Geographers commonly look to concepts and developments of other disciplines in order to carry out their work, but practitioners of other fields must borrow from geography if they need to address locational aspects of their research problems. Sometimes geographical concepts of location have made significant contributions to other disciplines. For example, **diffusion** has contributed to major advances in epidemiology. The ideas of **regions** and **boundaries** have provided the basic metaphors necessary for geologists to develop plate tectonics theory, and for meteorologists to postulate generalizations like air masses and fronts as aids to predictive analysis.

Location is inherently relative. The notion of **distance** connotes measurable spatial separations between two objects or phenomena. A **region** is used to define a bounded contiguity which contains common or similar characteristics on the surface of the earth. Such a region can range in size by many orders of magnitude. In order to allow for analysis which bridges the gulf between too much generality and too much specificity, Abler, Adams and Gould have distinguished two types of **regional systems**: the **specific regional system** and the **general** or **generic regional system.** (1971: 182-183) Specific regions are contiguously integral and locationally defined. General regions are generically defined and grouped by common type. At a very small scale, residential back yards would be one example of a general or genetic regional system. In this analysis, such small regions will be termed **types of activity places.**

This research project concerns the intersection between **location** and **activity,** or stated another way, the meeting of **cultural space** with **cultural time.** The last chapter dealt with the duration and chronology of activities, as well as semantic and social aspects of those activities. The use of

cultural time on the diary day by retired men who were respondents to the present survey was described and analyzed. This chapter concentrates on the use of space by these same men on their diary day.

A. TYPES OF ACTIVITY PLACES

For purposes of analysis, activity places are classified relative to the respondent's dwelling. There are four principal and two combined categories:

PRINCIPAL ACTIVITY PLACE TYPES:	**COMBINED ACTIVITY PLACE TYPES:**
1) Inside the dwelling	
2) Outside associated with the dwelling	
	3) Both inside and outside associated with the dwelling
4) Indoors away from the dwelling, including inside an automobile	
5) Outdoors away from the dwelling	
	6) Both inside and outside away from the dwelling

Activities which were inside the dwelling or outside and associated with it are classified in more detail, consistent with the focus of this particular study.

B. DURATION OF EPISODES BY TYPE OF PLACE

The duration of activity episodes classified by types of places is shown on the following table:

<div align="center">TABLE 5-1</div>
<div align="center">DURATION OF ACTIVITY EPISODES BY TYPE OF PLACE</div>

TYPE OF PLACE	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
in dwelling BEDROOM	230	210.1	91	531.0
inside the dwelling, with room or area UNSPECIFIED	335	53.6	85	211.4
in dwelling LIVING room or front room	205	78.3	58	276.9
in dwelling KITCHEN	281	30.3	73	116.7
in OTHER dwelling rooms or areas	93	27.8	71	36.5
in dwelling DEN	24	97.1	10	233.0
in dwelling SHOP or workbench area	18	120.0	14	154.3
in dwelling DINING room or dining area attached to the living room	42	47.8	19	105.6
in dwelling RUMPUS or recreation room	33	54.7	8	225.6
in dwelling GARAGE or carport	14	89.3	10	125.0
in dwelling DINETTE or eating nook attached to the kitchen	24	42.1	10	101.0
in dwelling TELEVISION room	8	92.3	3	246.0
in dwelling FAMILY room, music room or library	2	157.5	2	157.5
in dwelling glassed PORCH or solarium	5	43.0	2	107.5
in dwelling UTILITY or laundry room area	4	37.5	3	50.0
in dwelling GREENHOUSE	2	36.5	2	36.5
in dwelling HOBBY room	1	38.0	1	38.0
TOTAL INSIDE DWELLING	1321	79.9	91	1159.9
indoors AWAY from dwelling, including inside an automobile	461	28.4	72	182.0
outdoors in the YARD or garden associated with the dwelling	64	81.3	34	152.9
outdoors associated with the DWELLING, otherwise unspecified	25	35.2	15	58.7
on dwelling PATIO, sundeck, balcony or gazebo	2	37.5	2	37.5
TOTAL OUTSIDE ASSOCIATED WITH THE DWELLING	91	67.6	43	143.1
outdoors AWAY from dwelling	143	31.0	56	79.1
NO DATA on place type	21	63.5	17	78.5
BOTH indoors and outdoors associated with the DWELLING	7	53.7	7	53.7
BOTH indoors and outdoors AWAY from the dwelling	3	31.7	3	31.7

Over 80% of the total amount of time which respondents had available on their diary day was spent **inside their dwellings.** This finding is important. The dwelling is not only a **node** of daily activity among these retired men, it is also the dominant **locus** for most of that activity. Thirty-seven

percent of the total time was spent in their bedrooms, mostly sleeping in bed. (See Table 7-2 and Appendix G, codes 450 and 460.) The second-ranking 'place' inside the dwelling, 'inside the dwelling, with room or area unspecified', often consisted of activity which did not lend itself well to location-specific detail. Examples would be 'housecleaning' or 'routine indoor chores'. In many other cases, it was simply not possible to elicit room-specific locations of activities on a one-day-recall basis. Respondents commonly spent a large portion of their waking indoor time in one particular room inside their dwellings. The 'living or front room' was the most frequently mentioned. The kitchen was also so occupied by many respondents. Less often a den, a shop or workshop area, 'dining room or dining area attached to the living room' or a rumpus or recreation room served as a man's principal indoor place of activity.

The second most common type of place for activities of this sample of retired men was **indoors away from the dwelling, including inside an automobile.** This type of place accounted for 10% of the time that the total sample had available on the diary day, but 79% of the respondents in fact spent some time indoors away from their dwellings.

The third-ranking major category of activity places was **outside associated with the dwelling.** In certain cases, the distinction between 'indoors' and 'outdoors' is not clear-cut. For example, carports were grouped with garages since they serve essentially the same purposes, and counted as 'inside the dwelling'. The degree of enclosure of carports tends to vary from completely open on the sides to complete or partial enclosure on as many as three sides. Places which are designed for semi-sheltered outdoor living, such as a patio, sundeck, balcony or gazebo were counted as outdoor places. Such places generally serve as nodes of outwardly-focused activities in contrast to, for example, doing automobile maintenance in a carport. Most of the time spent in places 'outside associated with the dwelling' were unambiguously 'outdoors', such as in the yard or garden. Forty-three respondents used this category of space on their diary day, averaging over two hours there.

Outdoors away from the dwelling was the fourth-ranking activity place. In contrast to 'outdoors associated with the dwelling', this category of space was utilized by more respondents (56), and for more episodes (143), but the

mean amount of time spent in this place category per respondent was about one hour less.

C. INDICES OF LOCATION TYPE

In order to facilitate the comparison of respondents according to the types of locations where they spent their diary days, two indices have been calculated: the **Indoor-Outdoor Index**, and the **Dwelling-Away From Dwelling Index**. These will be examined in turn.

1. The Indoor-Outdoor Index

The dichotomy between **indoors** and **outdoors** is fundamental to human experience. Since the Neolithic Revolution, people have constructed permanent dwellings (Sauer 1969: 6) which give them privacy and security from non-household members, as well as shelter from the elements. Permanent dwellings are most characteristic of agriculturalists and village, town or city residents pursuing any occupation. Most herding peoples have one or more permanent dwellings as well. True nomads are quite rare, usually occupying extremely marginal lands. Transhumant herders and other semi-nomadic peoples frequently maintain settlements which are occupied during part of the year. (Carlstein 1980: 103-146) The peasant side of our heritage views outdoors as the abode of toil, even of drudgery. (Chayanov 1966 [1924]: 6) The factory system of the Industrial Revolution built a roof over drudgery. Outdoors became pleasant by contrast. Although general working conditions improved over the working life of the respondents to this survey, the image of the outdoors as recreational space (Kelly 1982: 398-410) remains, where, in special moments, it is possible to listen to silence. (Schafer 1977: 253-259) Roderick Nash wrote, "Appreciation of the wilderness began in the cities." (1973: 44)

There are negative aspects of outdoor activities, of course. Without shelter, people are exposed to unpleasant as well as pleasant weather. Without walls, noise and unwanted interaction can intrude. For the most part, however, outdoor activity is experienced positively by respondents to this survey. Anticipating discussion later in the chapter, 32% of the respondents named activity which took place wholly outdoors as the most satisfying on their diary day. A further 7% mentioned activities which occurred partly indoors and

partly outdoors. It is possible, therefore, to use the contrast between indoor and outdoor activity as one measure of the quality of activity time which respondents spent on their diary day, with more time spent outdoors being valued higher. The **Indoor-Outdoor Index** is based on this premise.[1] The distribution of this index grouped by two index points is shown on the following table.

TABLE 5-2
DISTRIBUTION OF INDOOR-OUTDOOR INDEX VALUES GROUPED BY TWO INDEX POINTS

```
34.8
34.8
34.7
34.7
34.7
34.6
34.5
34.4
34.3
33.9
33.8
33.8
33.8
33.7
33.7
33.5
33.3
33.3
33.3
33.3
33.3
33.3
33.3
33.3   36.8
33.3   36.7
33.3   36.6
33.3   36.3   38.9
33.3   36.3   38.4
33.3   36.1   37.6               42.1   44.8
33.3   35.9   37.5   39.6        42.1   44.7
33.3   35.9   37.5   39.5        41.9   44.3
33.3   35.4   37.5   39.4        41.8   43.7                47.9
33.3   35.2   37.2   39.4        41.7   43.3   45.8   47.0
33.3   35.2   37.1   39.1        41.0   43.1   45.7   47.0   49.3   52.8   54.9   56.7
33.3   35.0   37.0   39.1        41.0   43.0   45.4   47.0   49.3   52.5   53.3   55.6
|——|——|——|——|——|——|——|——|——|——|——|——|
```

The distribution is greatly skewed, with a large proportion clustered on the 'indoors' side. (The score, 33.3, indicates that all activity by those respondents was indoors on their diary day.) The variation is fairly narrow, however. The median score is 36.7 and the mean is 38.9. The interquartile range is only 8.3 and the standard deviation is 6.1. The index, interpreted at an ordinal scale is nevertheless useful for differentiating respondents

and will be used for comparative purposes later in this chapter.

2. The Dwelling-Away From Dwelling Index

The concept of a fixed home-base, a node of security from which all daily activity can be launched, is fundamental to this civilization. Edward Relph wrote:

> Although in our everyday lives we may be largely unaware of the deep psychological and existential ties we have to the places where we live, the relationships are no less important for all that. It may be that it is just the physical appearance, the landscape of a place that is important to us, or it may be an awareness of the persistence of place through time, or the fact that **here** is where we know and are known, or where the most significant experiences of our lives have occurred. But if we are really rooted in a place and attached to it, if this place is authentically our **home**, then all of these facets are profoundly significant and inseparable.
> (1976: 41)

Even when a respondent was in his own yard, he was 'at home', within the space controlled by his own household. The space-time notation system developed by the Lund geographers (see Hägerstrand 1970, Carlstein 1980, and Lenntorp 1976) uses the dwelling as the starting and ending point. The dwelling as the node of daily activity is assumed by practitioners of the Lund methods. Although the Lund notation system is not used here, its concept of a daily activity area which begins and ends at the dwelling (Lenntorp 1976: 34-37) is central to this study.

In order to capture this relative orientation of respondent activity with respect to the dwelling, an index has been calculated based on the amount of time spent in the dwelling and the space associated with that dwelling as contrasted with all other space, whether indoors or outdoors.[2] The distribution of this index grouped by two index points is presented in the following table:

TABLE 5-3
DISTRIBUTION OF DWELLING-AWAY FROM DWELLING INDEX VALUES
GROUPED BY THREE INDEX POINTS

52.9							
52.8							
52.6							
52.6							
52.6							
52.6							
52.1							
51.6							
51.6							
51.2		58.9	61.7				
51.1	55.7	58.7	61.5				
51.0	55.6	58.5	61.5				
50.5	55.6	58.1	61.1				
50.3	55.4	57.8	60.9				
50.2	55.0	57.8	60.9				
50.0	55.0	57.6	60.6	64.2			
50.0	54.9	57.5	60.5	63.5			
50.0	54.9	57.3	60.4	63.4			
50.0	54.7	**56.8**	59.8	63.3			
50.0	54.3	56.5	59.7	63.0			
50.0	54.2	56.4	59.5	62.8			
50.0	53.9	**56.3**	59.4	62.3			
50.0	53.6	**56.3**	59.2	62.3			
50.0	53.5	56.1	59.2	62.2			
50.0	53.5	56.1	59.0	62.2	67.2		
50.0	53.0	56.0	59.0	62.0	65.5	68.9	78.6

|———|———|———|———|———|———|———|———|

The **Dwelling-Away From Dwelling Index** is distributed more evenly than the **Indoor-Outdoor Index**. Except for one extreme outlier, its range is somewhat narrower: the median is 56.3 and the mean is 56.8. The interquartile range is just 7.9, while the standard deviation is 5.2. As with the other indices, it will be used as an ordinal measure for comparative purposes.

D. OVERVIEW OF THE DIARY DAY BY TYPE OF LOCATION

A useful perspective on the intersection between social time and so-
cial space can be gained by a summary examination of how respondents changed
their use of location types over their diary day. The one-minute per hour sam-
ple method is used again to summarize these daily activity places, shown on
Table 5-4. A descriptive summary of the table begins on this page and contin-
ues after the three-page table.

0413 to 0613: Almost all respondents were still inside their dwel-
lings during the early morning, mostly still in their bedrooms.

0713: Since thirteen respondents were 'washing, dressing or shaving',
(See Table 4-7.) most of those not still in bed (26 respondents) were probably
in the bathroom, which was not accounted for specifically in this survey. Only
a handful had ventured out of their dwelling by this hour.

0813 to 0913: The majority of respondents were still inside their
dwellings over this period, but the number was declining. Almost half of the
respondents were eating breakfast at one of these two sample times, (See Table
7-7.), but most were in either 'unspecified' parts of their dwelling or were
in 'other' rooms, rather than in dining areas such as the kitchen, dinette or
dining room. Since breakfast is a routine event which is often quite brief,
this is one case where the one-minute per hour sampling method leaves some
notable gaps. An additional sample at 43 minutes past the hour yields the fol-
lowing number of respondents for whom no record of morning meal preparation,
eating or clean-up is evident from the 13 minutes past the hour sample:

0443: 0 respondents	0543: 1 respondent	0643: 0 respondents
0743: 7 respondents	0843: 7 respondents	0943: 6 respondents
1043: 4 respondents		

1013 to 1113: By late morning, more than half of the respondents had
vacated the inside of their dwelling. Many of these were still indoors, but in
other locations. At 1013, the daily peak of 25% of the respondents were out-
side; at 1113, 23% were outdoors.

1213 to 1413: The majority of respondents were back inside their
dwellings for the noon meal and a variety of other activities. A fair number
had returned outdoors or to non-dwelling indoor locations in the early after-
noon.

1513 to 1613: The trend toward returning outdoors continued in mid-

afternoon, but not quite including as many as in the morning. The number of respondents indoors away from the dwelling decreased greatly during this period, with most going inside their own dwellings. Inside the dwelling, the number in the kitchen was increasing, but the living room was the most common specific activity place there.

TABLE 5-4
ONE MINUTE PER HOUR SAMPLES OF ACTIVITY EPISODES
CODED BY TYPE OF PLACE

TYPE OF PLACE	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
in dwelling BEDROOM	88	86	80	65	33	3	2	
inside the dwelling, with room or area UNSPECIFIED		2	1	5	18	23	16	11
in dwelling LIVING ROOM or front room	1		1	1		8	9	14
in dwelling KITCHEN	1	1	2	1	15	12	2	6
in OTHER dwelling rooms or areas		1	3	11	9	8	3	
in dwelling DEN								2
in dwelling SHOP or workbench area						2	5	5
in dwelling DINING ROOM or dining area attached to the living room					3	5	2	1
in dwelling RUMPUS or recreation room			1	1	1		1	1
in dwelling GARAGE or CARPORT						1	1	2
in dwelling DINETTE or eating nook attached to the kitchen				1	1			
in dwelling GLASSED PORCH or solarium						1	1	
in dwelling UTILITY or laundry room area			1					
in dwelling GREENHOUSE						1		
TOTAL INSIDE DWELLING	90	90	89	85	80	64	42	42
INDOORS AWAY FROM DWELLING, INCLUDING INSIDE AN AUTOMOBILE	1	1	2	3	3	8	22	25
outdoors in the YARD or garden associated with the dwelling				2	3	9	13	13
outdoors associated with the dwelling, otherwise UNSPECIFIED								5
on dwelling PATIO, sundeck, balcony or gazebo					1			
TOTAL OUTSIDE ASSOCIATED WITH THE DWELLING				2	4	9	13	18
OUTDOORS AWAY FROM DWELLING					4	8	10	3
NO DATA ON PLACE TYPE				1		2	3	3
BOTH INDOORS AND OUTDOORS ASSOCIATED WITH THE DWELLING							1	

TABLE 5-4, CONT.

TYPE OF PLACE	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
in dwelling BEDROOM		1	1		1	3	2	3
inside the dwelling, with room or area UNSPECIFIED	16	17	10	8	13	23	19	22
in dwelling LIVING ROOM or front room	9	16	20	20	16	17	20	21
in dwelling KITCHEN	17	4	5	5	11	16	19	10
in OTHER dwelling rooms or areas	1	1	1	2	1	1	1	
in dwelling DEN	3	2	4	1	3	2	2	3
in dwelling SHOP or workbench area	3	2	3	2	3	1		1
in dwelling DINING ROOM or dining area attached to the living room	7	2	2	1	1	3	5	3
in dwelling RUMPUS or recreation room	3	1	2	2	1	1	1	2
in dwelling GARAGE or CARPORT	2	2	3	3	5	1		
in dwelling DINETTE or eating nook attached to the kitchen	4	2			1	2	5	1
in dwelling TELEVISION room	1	1	1			1	1	2
in dwelling FAMILY room, music room or library								1
in dwelling GLASSED PORCH or solarium		1						
in dwelling UTILITY or laundry room area	1							1
in dwelling GREENHOUSE								
in dwelling HOBBY room					1			
TOTAL INSIDE DWELLING	67	52	52	44	57	71	75	70
INDOORS AWAY FROM DWELLING, INCLUDING INSIDE AN AUTOMOBILE	20	27	23	26	11	7	8	12
outdoors in the YARD or garden associated with the dwelling	2	5	8	9	12	5	2	2
outdoors associated with the dwelling, otherwise UNSPECIFIED					2	4	3	1
TOTAL OUTSIDE ASSOCIATED WITH THE DWELLING	2	5	8	11	16	8	3	2
OUTDOORS AWAY FROM DWELLING	1	6	6	8	4	4	3	6
NO DATA ON PLACE TYPE	1	1	2	1	1		1	1
BOTH INDOORS AND OUTDOORS ASSOCIATED WITH THE DWELLING				1	1	1	1	
BOTH INDOORS AND OUTDOORS AWAY FROM THE DWELLING					1			

TABLE 5-4, CONT.

TYPE OF PLACE	2013	2113	2213	2313	0013	0113	0213	0313
			TIME OF DAY					
in dwelling BEDROOM	2	6	24	58	85	91	91	91
inside the dwelling, with room or area UNSPECIFIED	28	27	23	14	2			
in dwelling LIVING ROOM or front room	26	24	20	12	2			
in dwelling KITCHEN	5	5	2					
in OTHER dwelling rooms or areas		2	3	2				
in dwelling DEN	5	6	5	2				
in dwelling SHOP or workbench area	1	1						
in dwelling DINING ROOM or dining area attached to the living room	1	1	2					
in dwelling RUMPUS or recreation room	4	6	2					
in dwelling DINETTE or eating nook attached to the kitchen			1					
in dwelling TELEVISION room	1	2	2	1				
in dwelling FAMILY room, music room or library	1	1	2	1				
in dwelling UTILITY or laundry room area			1					
TOTAL INSIDE DWELLING	74	81	87	90	89	91	91	91
INDOORS AWAY FROM DWELLING, INCLUDING INSIDE AN AUTOMOBILE	12	6	4	1	2			
outdoors associated with the dwelling, otherwise UNSPECIFIED		1						
TOTAL OUTSIDE ASSOCIATED WITH THE DWELLING		1						
OUTDOORS AWAY FROM DWELLING	3	2						
NO DATA ON PLACE TYPE	1	1						
BOTH INDOORS AND OUTDOORS ASSOCIATED WITH THE DWELLING	1							

1713 to 1913: Even though almost all respondents ate their evening meal during this period, (See Table 7-7.) the ordinary meal-oriented places: the kitchen, the dining room and the dinette, had only a total of 29 of the 36 respondents who were eating their evening meal at 1813. Most of the others were combining eating with other activities such as watching television elsewhere inside their dwellings. A few were still outdoors during this period.

2013 to 2213: The living room reached its peak occupancy by 2013. This dominant television-watching period found respondents in a number of different parts of their dwellings. Twenty-six percent of the respondents had retreated to their bedrooms by 2213.

2313 to 0313: The shift to the bedroom continued toward midnight. By the wee hours, all respondents were in their bedrooms.

II. SOCIAL TENURE

The concept of **social tenure of space required** for human activity was developed by this author:

> Unlike legal tenure over property, which is a function of ownership and economic relations, the key to 'social tenure' is control over access. 'Private space' is space over which an individual ... has control over who may be there. Thus, a rented apartment constitutes private social tenure space, as does [the inside of] a private automobile, even while travelling on a public highway. Similarly, the social tenure of space over which a group of people with some common interest generally can control who may be there is called 'group space'. A private clubhouse is an obvious example, but even a soccer field in a public park during organized play would constitute 'group space'. The category, 'public space' is space where there are no restrictions about who in the general public may be there.
> (Prior 1982: 6-7)

A privately-owned supermarket is an example of 'public space' during business hours. In practice, the coding for the present survey assumed that whenever a respondent was sharing an activity with at least one other person, that they were occupying either 'group space' or 'public space', never 'private space'. Similarly, when a respondent was engaged in activities alone in his dwelling, the **social tenure** was coded 'private space'. The situation of a respondent driving an automobile with no passengers is an especially interesting example of how **social tenure** was coded. Although the automobile was occupying public space: a street or highway, the **driver** was occupying the 'private space' of the interior of his vehicle. On the other hand, his **social intercourse** coding would be 'interactive', since he had to interact with other drivers in order to successfully negotiate the traffic.

The activity episodes elicited by the telephone survey for this study were coded for **social tenure**. In most cases, the **social tenure** category was obvious to the interviewer. There were instances, however, when an activity place was ambiguous in this respect. For example, if a respondent reported swimming in a public pool, he was asked whether it was during open swimming hours, or whether it was during a period when swimming was restricted to a class or a formal activity group.

A. SOCIAL TENURE DURATION

Although **social tenure** was coded for secondary and tertiary activities, their departure from the **social tenure** of the simultaneous primary ac-

tivities was rare. The only conceivable theoretical interest might be the re-
lationship between **simultaneity** and **social tenure**. The data in Table 5-14 show
a negative correlation between the **Simultaneity Index** and the **Privatism Index**,
which is not statistically significant for this sample size [$rs-z$ = $^-0.93$].
The duration of activity episodes according to **social tenure** is shown on the
following table:

TABLE 5-5
DURATION OF EPISODES BY SOCIAL TENURE OF SPACE REQUIRED

SOCIAL TENURE OF SPACE REQUIRED	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF RESPONDENTS	MEAN RESPONDENT MINUTES
PRIVATE SPACE	993	88.9	91	969.8
GROUP SPACE	568	55.4	87	361.9
PUBLIC SPACE	471	21.6	78	130.5
NO DATA ON SOCIAL TENURE	15	74.7	15	74.7

Given the fact that sleeping was coded by default with a **social tenure**
of 'private space', it is to be expected that the use of 'private space' is
predominant. Similarly, since a great deal of time with other people is spent
in the respondents' own dwellings, the use of 'group space' is more common
than the use of 'public space'.

B. OVERVIEW OF THE DIARY DAY BY SOCIAL TENURE

As with the other classifications of activity episodes, the variation
of **social tenure** over the diary day is worth examination. The one-minute per
hour sample method is used to summarize the changing patterns. This sample is
given on the following table:

TABLE 5-6
ONE MINUTE PER HOUR SAMPLES OF SOCIAL TENURE FOR SPACE
REQUIRED FOR ACTIVITY EPISODES

SOCIAL TENURE FOR SPACE REQUIRED	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
PRIVATE SPACE	90	90	88	84	64	50	49	54
GROUP SPACE	1	1	2	4	22	31	20	14
PUBLIC SPACE			1	2	5	8	20	21
NO DATA ON SOCIAL TENURE				1		2	2	2

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
PRIVATE SPACE	37	34	48	45	53	47	26	44
GROUP SPACE	41	34	21	21	26	37	58	42
PUBLIC SPACE	12	22	20	24	11	7	6	5
NO DATA ON SOCIAL TENURE	1	1	2	1	1		1	

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
PRIVATE SPACE	41	42	51	74	87	91	91	91
GROUP SPACE	45	46	38	17	3			
PUBLIC SPACE	4	2	2		1			
NO DATA ON SOCIAL TENURE	1	1						

The following is an overview of the diary day according to changes in **social tenure**.

0413 to 0713: Almost all respondents were in 'private space' in the early morning.

0813 to 0913: Some respondents shared breakfast with others, so the 'group space' category increased. A few ventured into 'public space' this early.

1013 to 1113: Although those using 'private space' were still in the majority in late morning, a considerable number had entered 'public space', while a declining number were in 'group space'.

1213 to 1313: The lunch hour showed a marked decline in the use of both 'public' and 'private' space, with a concomitant increase in 'group space' use.

1413 to 1613: The use of 'public space' increased in mid-afternoon, reaching its daily peak at 1513. These people were mostly shoppers and outdoor

exercisers. (See Tables 4-7, 4-30 and 5-4.) By 1613, however, the use of 'public space' began a general decline, and 'group space' use increased greatly.

1813: The daily peak for use of 'group space' was reached during the evening meal hour. It appears that meals provide an important impetus for retired men to share time with others in closed 'group spaces'.

1913 to 2213: Television prime time was another important 'group space' period, but less prominantly than during the evening meal. 'Public space' was used only rarely in the evening. By 2213, 'private space' use increased again as some respondents went to bed. (See Tables 4-7 and 5-4.)

2313 to 0313: 'Group space' use declined sharply as respondents went to bed.

C. PRIVATISM INDEX

The data obtained on social tenure of space required for activity episodes can be summarized in a single index, called a **Privatism Index**, which is a function of episode duration weighted according to the relative degree of 'privatism' of the space. 'Private space' is weighted above 'group space', which, in turn, is weighted higher than 'public space'.[3] The distribution of this index, grouped by five index points is shown on the following table:

TABLE 5-7
DISTRIBUTION OF THE PRIVATISM INDEX VALUES GROUPED BY FIVE INDEX POINTS

				90.9		
				90.7		
				90.7		
				90.6		
				90.4		
				90.2		
				90.0		
				89.9		
				89.2		
				89.1		
				89.1		
				88.8		
				88.7		
			85.8	88.5		
			85.6	88.5		
			85.6	88.5		
			85.1	88.4	95.1	
			84.8	88.4	94.7	
			84.3	88.3	94.1	
			84.0	88.2	93.9	
			83.9	88.1	93.9	
			83.8	87.8	93.4	
		80.6	83.8	87.7	93.2	
		80.4	83.4	**87.5**	92.8	
		80.1	83.3	**87.5**	92.6	
		78.7	83.3	87.2	92.4	
		78.7	83.1	87.2	91.9	
		78.6	82.9	87.1	91.7	
		78.3	82.6	86.8	91.5	
		78.1	82.3	**86.7**	91.2	
		78.0	81.9	86.5	91.2	100.0
		77.4	81.9	86.5	91.0	97.9
	75.6	77.0	81.5	86.3	91.0	96.2
61.8	72.6	76.7	81.3	86.0	91.0	96.0
|——|	——|	——|	——|	——|	——|	——|	——|

The index has a fairly balanced distribution. The median is 87.5 and the mean is only slightly lower: 86.7. Although the total range is fairly wide, it is mostly clustered fairly narrowly: the interquartile range is 7.6 and the standard deviation is 6.0. Although the distribution of the index may be close enough to normal to justify parametric treatment, it will be used conservatively at the ordinal level for statistical testing, consistent with the other indices described in Chapters 3, 4 and 5.

III. TRAVELLING

It is customary and appropriate that time budget research takes tra-
velling into account when documenting time use. Travelling takes time to ac-
complish. It is the quintessential spatial-temporal phenomenon. Travelling was
an important activity on the diary day for many of the retired men who were
interviewed during this survey. In fact, 65 of the 91 respondents spent 4430
minutes (just under a total of 74 hours) travelling a straight-line total dis-
tance of 1618 kilometres by all means of travel.

A. DISTANCE AND DURATION BY MODE OF TRAVEL

The following table summarizes distance and duration of respondents'
travel on their diary day.

TABLE 5-8
DISTANCE AND DURATION OF RESPONDENT TRAVEL ON THE DIARY DAY
BY MODE OF TRAVEL

MODE OF TRAVEL	EPISODES			RESPONDENTS		
	NUMBER	MEAN MINUTES	MEAN DISTANCE km	NUMBER	MEAN MINUTES	MEAN DISTANCE km
AUTOMOBILE	217	15.9	6.9	56	61.5	14.4
PEDESTRIAN	52	15.6	0.6	19	42.6	1.7
PUBLIC TRANSPORATION	2	65.0	29.3	1	130.0	58.5
BICYCLE	4	9.3	3.6	1	37	14.2
MOTOR BIKE (SCOOTER)	2	5.0	5.4	1	10.0	10.7

It is evident from the data in Table 5-8 that the automobile was by
far the most dominant means of travel among this sample of retired men. Over
61% of the respondents spent an average of just over one hour of their diary
day inside an automobile. Measured in straight-line Pythagorean terms, they
only travelled an average of a little over 14 kilometres during that time.
Travel by motor bike and by public transportation was of minor importance. As
noted in Chapter 2, there was a public transit strike in progress for about

three weeks of the time during which the time budget survey was administered.
Of the 56 respondents who were interviewed during that time, only four
reported that their diary day had been affected by the strike, and only two of
these were actually inconvenienced by the strike on their diary day. It is
reasonable to conclude, therefore, that the presence or absence of a working
transit system did not have much impact on the population which this sample
represents. About sixteen months after the survey the **Skytrain** rapid transit
system began service, connecting the Vancouver CBD with the New Westminster
CBD. It is possible that this new link in the public transportation system may
now afford retired men in the South Burnaby-New Westminster portion of the
study area significantly more mobility options. Since **bicycle, public
transportation** and **motor bike** travel involved such a small number of
respondents and so little total time, they will be combined into two major
categories, **pedestrian/bicycle travel** and **motor vehicle travel** for further
analysis.

B. ORIGINS AND DESTINATIONS

When respondents reported travelling on their diary day, their travels
were recorded as a series of **origins** and **destinations**. In most cases, the
first origin was the respondent's dwelling. If the respondent embarked on a
trip with several stops, such as stopping to watch a construction project or
buying some gasoline, each stop was recorded as a separate destination.

Map 5-1 depicts travel by respondents on foot and by bicycle, while
travel by motor vehicle appears on Map 5-2. For simplicity of presentation,
only the origin and the farthest destination are depicted, rather than each
respondent's complete itinerary.

The calculations of 'farthest destination' were made with an APL pro-
gram written by this author. The UTM coordinates of the **1981 Census Enum-
eration Area** centroids were used to represent the point of origin and each
identified distination which was reached by the relevant travel means. The
straight-line (Pythagorean) distance was calculated between the origin and
each destination, and the longest resulting distance was selected by the
program for mapping. As previously stated, the **EA** centroids were used so that
the privacy of the respondents could be protected. In the case of pedestrian

travel, the respondent had to walk out of the boundaries of the 'origin' Enumeration Area in order for any distance travelled to be recorded in the study data. In addition, the distance obviously defaults to the calculated spacing between centroids rather than the actual distance from true origin. Furthermore, Pythagorean distance calculations do not take actual travel routes into account. This method was necessary for two reasons. First, the street grid patterns in the study area are very complex. The part of West Vancouver in the study area contains two grids; there are three major grids in the New-Westminster-Burnaby contiguity, and several areas with non-gridded streets; the South Surrey-White Rock area contains five major grid systems. This account of street grids does not even take travel outside of the residential study area into consideration. Second, querying people about detailed travel routes in a telephone time budget survey which included extensive demographic and housing questions did not seem practical.

The farthest destination distances of pedestrian/bicycle travel are generally shorter than for motor vehicle travel. Map 5-1 also includes coarse contours (50 metre intervals) so that important contrasts in relief can be related to each origin and its most distance destination which was reached by muscle-power. The origin-destination pairs for which the map indicates significant elevation differences are rare. New Westminster and White Rock, which include steep slopes, are especially noteworthy. Most pedestrian travel in these places parallels the contours. A detailed analysis of the actual paths which the respondents took, along the lines of studies by Graham Rowles (1978) or Gordon Priest (1970), goes beyond the scope of this study, but might be a useful supplement to a future time budget study similar to this one.

Since motor vehicle travel is so much more common and extensive than for muscle-powered travel, Map 5-2 is more complex. The first striking feature with respect to the current study is that there is no indication of direct contact among the three residential regions, West Vancouver, Burnaby-New Westminster and South Surrey-White Rock, except for one trip which a West Vancouver respondent took to Bellingham, Washington, U.S.A., presumably travelling on Highway 99 along the northeast boundary of the South Surrey-White Rock study area. There is also no direct connection between the South Burnaby-New Westminster area and downtown Vancouver, along the present Skytrain route.
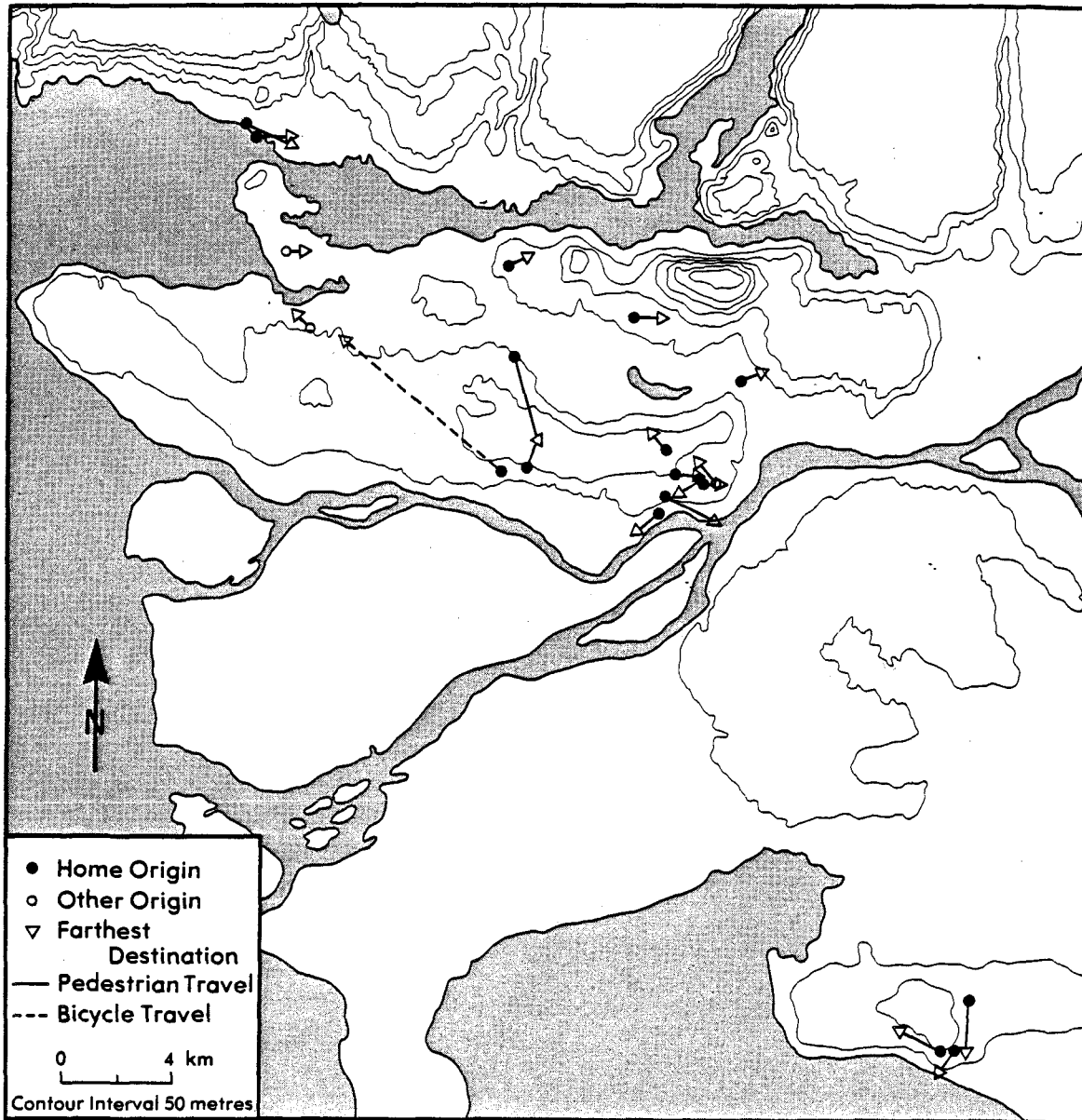
MAP 5-1

ORIGIN AND FARTHEST DESTINATION FOR EACH RESPONDENT

BY PEDESTRIAN OR BICYCLE TRAVEL

To Aldergrove

To Cultus Lake

To Bellingham

N

Origin

Farthest
Destination by
Motor Vehicle

0   4
km

Origin

Farthest
Destination by
Motor Vehicle
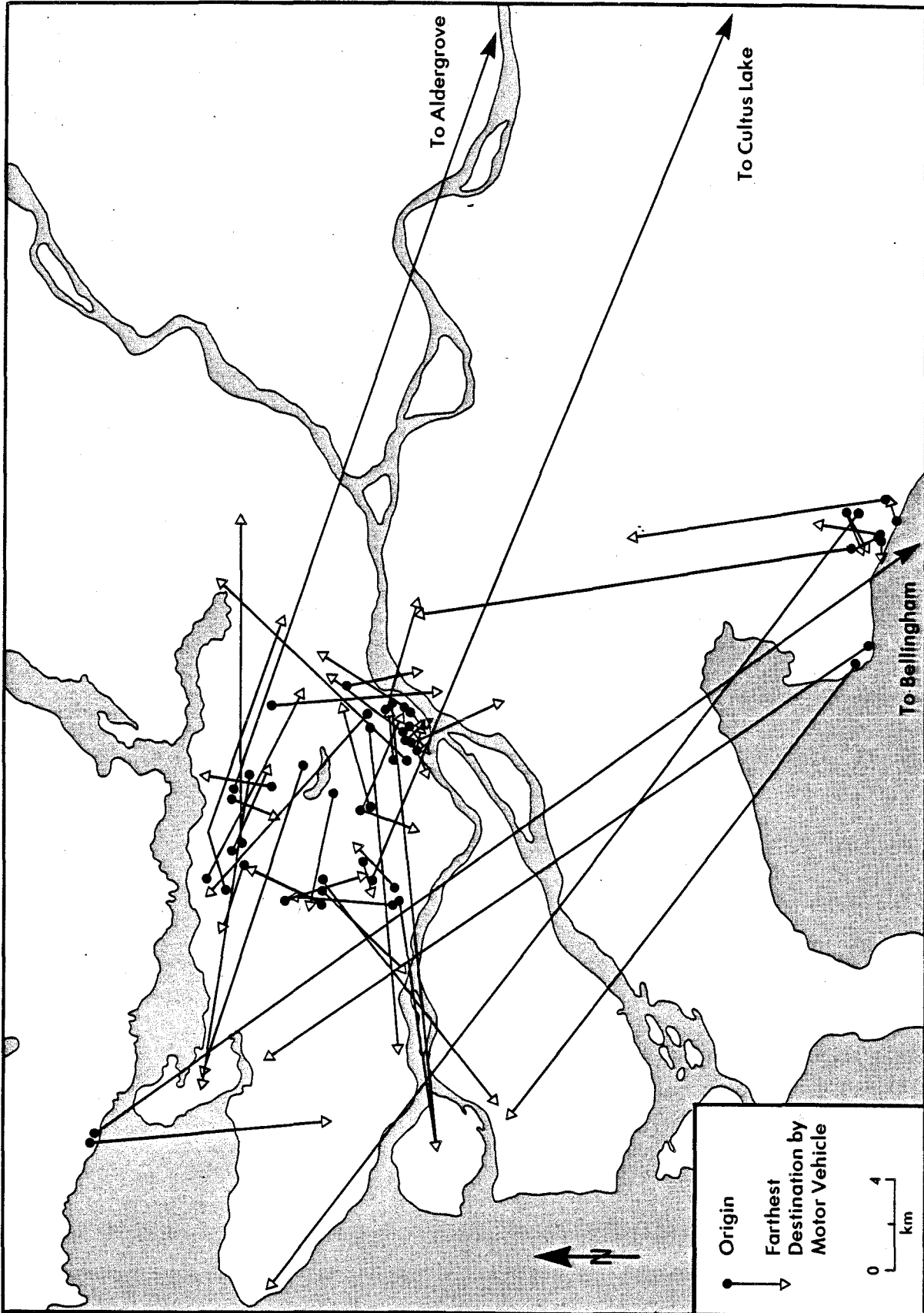
MAP 5-2: ORIGIN AND FARTHEST DESTINATION FOR EACH RESPONDENT BY MOTOR VEHICLE

Most motor vehicle travel is relatively local or, when more distant, not radial toward major urban centres. There were only two trips by respondents to the downtown Vancouver peninsula, for example.

C. OVERVIEW OF THE DIARY DAY BY MODE OF TRAVEL

There is no straightforward way in which to sample the **distance** travelled as the day progresses. A number of trips would be in progress at the beginning and end of any short period during the day and any calculation of the distance travelled during the sample period would be entirely artificial. Therefore the same one-minute per hour sample method is used here as with other variables to show the changing pattern of the **mode of travel** thoughout the day. The data are given in the following table.

TABLE 5-9
ONE MINUTE PER HOUR SAMPLES OF RESPONDENT TRAVEL MODES

TRAVEL MODE	TIME OF DAY							
	0413	0513	0613	0713	0813	0913	1013	1113
MOTOR VEHICLE				1	2	3	8	13
PEDESTRIAN/BICYCLE					2	4	5	1
NO TRAVEL INVOLVED[4]	91	91	91	90	87	82	76	75
NO DATA ON TRAVEL MODE						2	2	2

	TIME OF DAY							
	1213	1313	1413	1513	1613	1713	1813	1913
MOTOR VEHICLE	5	10	6	7	4	4	3	2
PEDESTRIAN/BICYCLE		5	4	6	1	2		
NO TRAVEL INVOLVED	85	75	80	77	85	85	87	89
NO DATA ON TRAVEL MODE	1	1	1	1	1		1	

	TIME OF DAY							
	2013	2113	2213	2313	0013	0113	0213	0313
MOTOR VEHICLE	1	2	2		1			
PEDESTRIAN/BICYCLE	1							
NO TRAVEL INVOLVED	88	88	89	91	90	91	91	91
NO DATA ON TRAVEL MODE	1	1						

The following is an overview of the diary day according to the changing pattern of **travel modes**.

0413 to 0613: No travel is evident.

0713 to 0813: Only minimal travel had begun this early in the morning.

0913 to 1113: Travel increased as the morning progressed. The pedestrian/bicycle mode decreased to one respondent by 1113, which was also the daily peak for motor vehicle travel.

1213: The noon hour showed a marked decline in travel, with the pedestrian/bicycle mode dropping to nil.

1313 to 1713: Motor vehicle travel began at an afternoon peak at 1313, and generally declined as the afternoon progressed. The bicycle/pedestrian mode reached its daily peak at 1513 and then declined markedly.

1813 to 2213: The evening meal and television prime times were characterized by minimal travel, only one instance of which was the pedestrian/bicycle variety, at 2013.

2313 to 0313: There was only one case of travel during this period, a motor vehicle trip just past midnight.

In sum, travel by the retired men in this sample is almost wholly confined to mid-morning and afternoon periods, with motor vehicle travel peaking in late morning and the pedestrian/bicycle mode reaching its most popular time in mid-afternoon.

D. TRAVEL MODE INDICES

In order to construct indices of travel modes for the present survey, it makes sense to retain the two major categories which have already been identified: **pedestrian/bicycle travel** and **motor vehicle travel**. The indices could be based on time spent, on distance travelled, or a combination of the two. For purposes of preliminary analysis all three types were calculated. There is, however, a basic difficulty with the distance and combination distance-time measures. The present survey, as previously discussed, based distance measures on the Pythagorean distance between UTM centroids of 1981 Canada Census Enumeration Areas (EA's). If travel took place entirely within one EA or if the travel had no identifiable destination, then the starting and ending UTM coordinates were recorded as the same, and the resulting distance

calculation would be zero. In all of these cases the time spent travelling was duly recorded. If we were to rely on the distance measures, either eliminating or including the zero distance values, then the data would be distorted by variations caused by the measuring instruments, and could lead to faulty conclusions. The travel mode indices which are used in this analysis are based, therefore, on **travel time.**

1. The Pedestrian/Bicycle Travel Time Index

The pedestrian/bicycle travel time index consists of a linear transformation of the number of minutes spent on the activity which makes the respondent who spent the most time in muscle-powered travel have an index value of 100.[5] Since the index is such a simple transformtion of the number of minutes, the original data are given in the following table to show their distribution:

TABLE 5-10
DISTRIBUTION OF THE NUMBER OF MINUTES SPENT BY RESPONDENTS
IN PEDESTRIAN OR BICYCLE TRAVEL GROUPED BY FIFTEEN MINUTE INTERVALS

```
15
15
15
12
10
10        43
10        40    60    75
10        40    55    74    90
 5        38    50    70    80
 4   25   37    48   ·66    80                    165   180
 2   23   35    47    65    80    92              160   170   182
|——|——|——|——|——|——|——|——|——|——|——|——|——|——|
```

The distribution contains a large positive skewness, with two, or perhaps three, distinct clusters. The median is 47 minutes and the mean is 58.4 minutes. The distribution is also very wide. The interquartile range is 65 minutes and the standard deviation is 58.4 minutes. The large gap in total time between 92 minutes and 160 minutes suggests that the group which spent nearly three hours or more in this sort of an activity forms a very distinct group, indeed. For the present, however, the **pedestrian/bicycle travel time index** will be used as an ordinal measure for the purpose of correlations with other variables.

B. The Motor Vehicle Travel Time Index

The calculation of the motor vehicle travel time index is parallel to the previous one.[6] A similar depiction of its distribution in is the following table:

TABLE 5-11
**DISTRIBUTION OF THE NUMBER OF MINUTES SPENT BY RESPONDENTS
IN MOTOR VEHICLE TRAVEL GROUPED BY FIFTEEN MINUTE INTERVALS**

```
        30
        30
        30   45
        27   45
        26   44
        25   44
   10   25   41
   10   20   40   60
   10   20   37   60
   10   20   35   60
   10   20   35        89
   10   20   35   55   75   85              150         193
    2   18   35   55   75   85              145  165    190
    2   17   33   55   75   85   95  117  130  140  152  180  185              255
   |—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|—|
```

The distribution of **motor vehicle travel time** is even more positively skewed than for **pedestrian/bicycle travel time.** The median is 44 minutes and the mean is 64.5 minutes. The distribution is not quite so wide, however. The interquartile range is 60 minutes and the standard deviation is 58.0 minutes. Except for one extreme outlier, the grouping of respondents is less distinct than for muscle-powered travel. Again, the linearly transformed **motor vehicle travel time index** will be used in an ordinal form for correlations.

IV. LOCATION OF THE MOST SATISFYING ACTIVITY

In the previous chapter, three perceptual-functional classifications of the activity which each respondent named as the most satisfying activity of his diary day were discussed. Locational variability of these activities also contributes to our understanding of those daily activities which retired men regard as more satisfying than others. Both the **type of place** and the **social tenure** of the space required for these activities will be considered.

A. TYPE OF PLACE OF THE MOST SATISFYING ACTIVITY

Since the concept of **type of place** contains two aspects or components, its **indoor-outdoor** part and its **dwelling-away from the dwelling** part, the two-dimensional matrix of Table 5-12 is used to differentiate the relative frequency of these place types in which respondents' chosen **most satisfying activities** took place. The table excludes the seventeen respondents for whom the type of place of their most satisfying activities is either not known or not applicable.

TABLE 5-12
THE NUMBER OF RESPONDENTS WHOSE MOST SATISFYING ACTIVITIES ARE CLASSIFIED BY GIVEN TYPES OF PLACE CATEGORIES

	ASSOCIATED WITH THE DWELLING	AWAY FROM THE DWELLING	ASSOCIATED WITH THE DWELLING AND AWAY FROM THE DWELLING[7]
INSIDE	28	16	1
OUTSIDE	9	14	1
INSIDE AND OUTSIDE[7]	3	1	1

Forty-five or almost half of the respondents participated in their most satisfying activity indoors; twenty-four or over one quarter of the respondents were outside then, while that kind of activity took place both indoors and outdoors for five or over 5% of the respondents. The outdoor and

mixed indoor-outdoor activities which were most satisfying constitute a considerably higher proportion than their distribution among the sample as a whole. (See Table 5-1.) We may conclude, therefore, that outdoor activities tend to be valued higher by many respondents than the actual time spent on them indicates, but for close to a majority, the fact that an activity took place outdoors is not an important factor in their choice of the most satisfying activity.

For forty or about 44% of the respondents, the most satisfying activity was associated with the dwelling. The most satisfying activity took place away from the dwelling for thirty-one or 34% of the respondents. Three or over 3% of the respondents participated in their most satisfying activities both associated with the dwelling as well as away from it. The **away from the dwelling** characteristic of the most satisfying activity is considerably more prevalent than for activities as a whole among respondents. (See again Table 5-1.) A possible explanation for this phenomenon may be partially understood by a concept **privacy** which has been developed by this author:

Privacy is a desirable socio-spatial situation which occupies a middle position in a continuum between two negative poles: **isolation** and **crowding**. In a position of privacy, specifically in a dwelling so situated, a person has the freedom to enter the wider social world, or to allow others to share that person's personal sanctum. A person with truly private space can also shut out social interaction with others when desired.

For many respondents, the fact that their most satisfying activities took place away from the dwelling does not necessarily reflect negatively on their dwelling. A common characteristic of these activities is that they almost always involved a considerable degree of choice on the part of the respondent. Satisfying activities are expressions of personal freedom. Without the security and comfort of a private dwelling, activities in the wider social world would probably not hold the same kind of attraction.

When people choose a dwelling, its location as well as its internal characteristics are critical. Before retirement and while children are still being raised in the house, the journey to work and a neighbourhood environment which is appropriate for the children are usually paramount. Thereafter, other factors often take over and affect choices. These are the sorts of issues

which will be treated in more detail in the following chapter.

B. SOCIAL TENURE OF THE MOST SATISFYING ACTIVITY

Another locational aspect of the most satisfying activity is its social tenure, a concept which was discussed earlier in this chapter. Table 5-13 details the number of respondents whose most satisfying activity corresponds to the three **social tenure** categories, as well as combinations of these.

TABLE 5-13
THE NUMBER OF RESPONDENTS WHOSE MOST SATISFYING ACTIVITIES ARE CLASSIFIED BY GIVEN SOCIAL TENURE CATEGORIES

SOCIAL TENURE OF SPACE REQUIRED	NUMBER OF RESPONDENTS
Private Space	30
Group Space	23
Public Space	14
Private and Group Space	6
Group and Public Space	1
No Data on Social Tenure or Not Applicable	17

Since about two-thirds of the total time respondents had available on their diary day was spent in **private space,** (See Table 5-5.) it is notable that only about 33% of the respondents chose activities wholly in private space, or about 40%, if the **private and group space** is included. **Group space** activities were selected by almost one-quarter of the respondents, which is close to the proportion of time which the whole sample spent in such space. (See again Table 5-5.) Not counting the combined **private and groups space** category, about 42% of the respondents chose activities in **group** and **public** spaces as their most satisfying. Although **private space** and **introspective** activities and **group space** and **interactive** activities are not precisely equivalent, these findings nevertheless roughly parallel those for the **social intercourse** categories of **introspective** and **interactive,** respectively. (See Tables 4-19 and 4-43.)

V. INDEX CORRELATION

In the previous two chapters and in this chapter, thirteen indices of personal and activity characteristics were introduced which enable us to make general statements about correlation (positive or negative) or lack thereof among these variables in the population which the sample of retired men represents. These are:

PERSONAL INDICES	**ACTIVITY INDICES**
Age	Simultaneity
Income	Work-Leisure
Career	Social Intercourse
Socio-Economic Status	Muscular Motility
	Indoor-Outdoor
	Dwelling-Away From Dwelling
	Privatism
	Pedestrian or Bicycle Travel Time
	Motor Vehicle Travel Time

All combinations of these indices were correlated by the ordinal-scale statistical test, **Spearman's Rank Correlation Coefficient rs**, except between **income** and **socio-economic status** and between **career** and **socio-economic status**. These exceptions were made because the variables are not independent. Part of the same data which were used to calculate both the **income** and **career** indices were also used for the **socio-economic status** index. The results are given on Table 5-14 on the following page. The index pairs are listed in order of their statistical significance, expressed as the absolute value of **rs-z** (directional standard deviations of a normal distribution). Those which are significant at the 5% level or better (2-tailed test) are shown in **bold** print.

TABLE 5-14

SPEARMAN'S RANK CORRELATIONS OF ACTIVITY AND PERSONAL PROFILE INDICES

X-Y INDICES CORRELATED WITH Y ORDERED BY RANKS OF X	SPEARMAN'S RANK CORRELATION		N
	rs	rs-z	
PRV-SCN	⁻0.58	⁻5.47	91
PRV-DWY	⁻0.51	⁻4.84	91
MOT-INO	0.39	3.69	91
SCN-DWY	0.34	3.22	91
MOT-WKL	⁻0.34	⁻3.19	91
INC-AGE	⁻0.34	⁻3.18	87
MVT-PRV	⁻0.40	3.08	61
INC-CAR	0.32	2.97	86
PBT-MVT	⁻0.63	⁻2.87	22
MVT-MOT	0.37	2.86	61
DWY-MVT	0.36	2.79	61
MVT-SCN	0.32	2.49	61
INO-SIM	⁻0.22	⁻2.10	91
SES-AGE	⁻0.22	⁻2.07	87
SES-INO	0.22	2.08	87
MOT-AGE	⁻0.21	⁻1.99	91
PBT-SES	0.32	1.95	39
MOT-DWY	0.20	1.94	91
MVT-INC	0.25	1.94	59
SIM-AGE	⁻0.22	⁻1.89	78
PBT-CAR	0.30	1.85	39
MVT-INO	0.24	1.83	61
PRV-MOT	⁻0.19	⁻1.82	91
WKL-CAR	⁻0.18	⁻1.71	90
SCN-SIM	0.17	1.57	91
WKL-AGE	0.16	1.47	91
SCN-AGE	⁻0.16	⁻1.45	91
MVT-AGE	⁻0.19	⁻1.44	61
INO-CAR	0.15	1.44	90
MVT-SIM	0.20	1.40	51
MVT-SES	0.17	1.32	58
INO-INC	0.14	1.28	87
SCN-INO	⁻0.13	⁻1.22	91
WKL-INO	⁻0.13	⁻1.19	91
PRV-CAR	0.13	1.18	90
SIM-CAR	0.12	1.14	90
MOT-INC	0.11	1.04	87
MOT-SIM	⁻0.11	⁻1.00	91
PRV-AGE	0.10	0.98	91
SES-WKL	⁻0.10	⁻0.96	87
PRV-SIM	⁻0.10	⁻0.93	91
DWY-PBT	0.15	0.90	39
SES-SIM	0.10	0.90	87
PBT-AGE	0.14	0.84	39
SES-MOT	0.08	0.70	87
WKL-INC	0.07	0.63	87
INO-AGE	0.07	0.62	91
DWY-INO	0.06	0.61	91
PBT-PRV	⁻0.10	⁻0.60	39
DWY-INC	⁻0.06	⁻0.60	87
SCN-INC	⁻0.06	⁻0.59	87
MVT-PBT	⁻0.11	⁻0.53	24
WKL-SIM	⁻0.05	⁻0.51	91
PRV-INC	⁻0.06	⁻0.51	87
PBT-SIM	0.08	0.46	33
DWY-CAR	⁻0.05	⁻0.46	90
PRV-INO	0.05	0.44	91
SES-DWY	⁻0.05	⁻0.43	87
PBT-INC	0.07	0.42	38

TABLE 5-14, CONT.

X-Y INDICES CORRELATED WITH Y ORDERED BY RANKS OF X	SPEARMAN'S RANK CORRELATION		N
	rs	rs-z	
DWY-SIM	0.04	0.41	91
PBT-INO	0.05	0.34	39
SCN-MOT	0.03	0.33	91
MVT-CAR	0.04	0.33	60
SCN-WKL	⁻0.03	⁻0.32	91
MVT-WKL	⁻0.03	⁻0.27	61
PBT-SCN	0.04	0.23	39
CAR-AGE	0.02	0.22	90
PRV-WKL	⁻0.02	⁻0.20	91
PBT-WKL	⁻0.03	⁻0.16	39
SCN-CAR	⁻0.01	⁻0.14	90
SIM-INC	$^-9.8E^-3$	⁻0.09	87
SES-PRV	$^-6.3E^-3$	⁻0.06	87
SES-SCN	$^-6.3E^-3$	⁻0.06	87
PBT-MOT	$6.3E^-3$	0.04	39
WKL-DWY	$1.6E^-3$	0.02	91
MOT-CAR	$^-1.0E^-3$	$^-9.7E^-3$	90

K E Y   T O   T A B L E   5 - 1 4

rs: Spearman's Rank Correlation Coefficient **rs**
rs-z: Zed-score for Spearman's **rs**   **AGE:** Age in Years
SES: Socio-Economic Status Index   **CAR:** Career Index
INC: Income Index   **PRV:** Privacy Index
SCN: Social Intercourse Index   **MOT:** Muscular Motility Index
WKL: Work-Leisure Index   **INO:** Indoor-Outdoor Index
DWY: Dwelling-Away From Dwelling   **SIM:** Simultaneity Index
    Index
PBT: Pedestrian or Bicycle Travel   **MVT:** Motor Vehicle Travel Time
    Time Index   Index

The major correlations from Table 5-14 can be summarized best diagramatically in Figure 5-1.

The correlations which appear on Table 5-14 and are illustrated in Figure 5-1 are for the patterns of activities of each respondent rather than between each of the activities. For example, respondents who spent more time travelling by **motor vehicle** tended to spend less time with **pedestrian or bicycle travel**, and vice versa.

Figure 5-1 reveals two major groups of indices, which are linked by the positive correlation between **motor vehicle travel time** and **muscular motility**. The previously-mentioned distinction between **personal** and **activity** variables is also evident in the figure. In order to improve readability, the **personal** variables are printed in **BOLD LETTERS**.

FIGURE 5-1
HIGH CORRELATIONS OF ACTIVITY AND PERSONAL INDICES

```
  + + + FROM DWELLING        - - - - - - - - - - - - AGE - - - - -
  +        -          +        -                        -              -
  +        -          +        -                        -              -
  +     PRIVATISM - - SOCIAL   -                        -              -
  +        -        INTERCOURSE -        SIMULTANEITY   -              -
  +        -          +        -                 -      -              -
  +        -          +        -                 -      -           INCOME
  +        -          +        -                 -      -              +
  MOTOR VEHICLE + + + +     MUSCULAR + + OUTDOOR + + SOCIO-ECONOMIC  +
  TRAVEL TIME + + + + + +   MOTILITY                    STATUS        +
       -                        -                                     +
       -                        -                                  CAREER
       -                     LEISURE
  PEDESTRIAN/
   BICYCLE
  TRAVEL TIME
```

KEY TO FIGURE 5-1

```
            +                strong                        -           strong
+ + + or    +   =            positive           - - - or   -   =       negative
            +                correlation                   -           correlation
```

The strongest correlation is an inverse one between **more interactivity** on the **social intercourse index** and **privatism**. A similar relationship exists between **privatism** and **activity away from the dwelling**. These parallel relationships are logical, since **interactivity** and **activity away from the dwelling** are directly correlated. The respondents engaged in more activity which involved interactivity away from their dwellings and in group and public spaces. These relationships are quite expected by the mere definitions of the categories which make up these three indices.

Furthermore, **motor vehicle travel time** forms a positively-correlated triad with **interactivity** and **activities away from the dwelling**. Simply put, a common way for respondents to carry on interactive activities was often to get out of the house, and also commonly to travel somewhere by motor vehicle.

Similarly, **motor vehicle travel time** is inversely correlated with **privatism**. Motor vehicles were often the means to get to some group or public space for other activities.

The positive correlation of **motor vehicle travel time** with **muscular motility** is explained partly by the fact that driving an automobile was coded by default as 'moderate muscular motility', whereas riding in a car as a passenger was called 'minimal muscular motility', and it was more common for the

respondents to be driving than to be riding in motor vehicles.

There is a strong tendency for **more vigorous muscular motility** to be positively associated with **outdoor activity** and negatively associated with **leisure.** This latter relationship is most interesting, given the fact that there is a very strong tendency for activities with more than minimal exercise of muscles to be chosen as the most satisfying, (See Table 4-45.) while activities labelled **'leisure'** by respondents were also very often chosen as most satisfying. (See Table 4-44.)

The inverse relationship between **age** and **more vigorous muscular motility** is evidence that the rigor of activity does indeed slow down with age among this sample of retired men.

Simultaneous activities occur most often indoors. This may be accounted for principally by the fact that a great deal of secondary and tertiary activity involves reception of radio and television, which always took place indoors according to the survey. (Automobile travel, which was often accompanied by secondary or tertiary radio listening, was coded 'indoors away from the dwelling'.)

As was already discussed in the previous chapter, higher income and more advanced career achievements are positively associated. When combined into a single **socio-economic status index,** these characteristics correlate positively with **outdoor activity.** This correlation and the inverse one between **age** and **muscular motility** are the only ones in the sample which are statistically significant at less than the 5% level (two-tailed test) and which link personal indices with activity indices.

The most important finding of this series of correlations is that there is relatively little correlation between personal characteristics of class (**income**), prestige and power (**career**), and overall **socio-economic status** to the pattern of activities which these respondents pursued on their diary day. Class, prestige and power bear little relationship to how much retired men interact with others, or how much time they spend at home or in other space controlled by them (private space), or how much time they spend in leisure activity, or how vigorous their activity is, or how much simultaneous activity they carry out.

The fact that **age** is negatively correlated with **socio-economic status**

and **income** is very likely the result of cohort effects. The older retired group experienced the extremely disruptive Great Depression and World War II when they were adults, during which they were unable to build resources which would contribute significantly to their post-retirement income. The younger retired men were in their childhood and adolescence during this period, and were able to take advantage of the quarter century of prosperity following the war to prepare financially for their retirement.

VI. HEALTH PROBLEMS AFFECTING ACTIVITY

The results of the two questions in the survey regarding health were summarized in the previous chapter. Only four of the ninety-one respondents had health problems which limited the choice of their current dwelling. This number is too small to be useful for any further statistical analysis. Thirty-five respondents indicated that they had health problems at the time of the survey which affected their daily activities. Fourteen of these had health problems which had a 'minor' impact on their activities; thirteen respondents identified health problems which affected their activties to a 'moderate' degree; eight had health problems which had 'severe' limiting influence over their daily activities. (See Table 3-16.)

The the actual impact of activity-limiting health problems needs to be examined further. The most straightforward way is to combine the activity-limiting health problem categories into two groups and then to determine the correlations according to the Median and Mann-Whitney Tests. In the following tables, the respondent activity health status was divided in two ways: 1) those with no health problems which affect their activities versus those with any degree of activity-affecting health problems, and 2) those with 'no' or 'minor' activity health problems versus those with 'moderate' or 'severe' health problems. The number of respondents with 'severe' health problems is too small to dichotomize with all of the rest.

TABLE 5-15
CORRELATION WITH PERSONAL AND ACTIVITY INDICES OF RESPONDENTS
WITH NO ACTIVITY HEALTH LIMITATIONS VERSUS THOSE WITH SOME
ACTIVITY HEALTH LIMITATIONS

PERSONAL AND ACTIVITY INDICES	MEDIAN TEST					MANN-WHITNEY TEST					
	X^2	N_x	C_c	N_y	Q	U	N_x	Z	N_y	Q	$+/T$
1 Income	6.595	33	0.250	49	**0.010**	1260	33	3.231	54	**6.2E-4**	107.5
2 Simultaneity	2.505	34	0.166	54	0.113	1173	35	1.577	56	0.057	196
3 Age	2.477	33	0.168	52	0.116	1105.5	35	1.025	56	0.153	146.5
4 Muscular Motility	1.702	34	0.136	56	0.192	1151	35	1.395	56	0.081	14
5 Pedestrian-Bicycle Travel Time	1.052	13	0.164	25	0.305	193.5	13	0.731	26	0.233	9.5
6 **Motor Vehicle Travel Time**	0.907	24	0.123	35	0.341	577.5	26	1.789	35	**0.037**	47.5
7 Outdoor	0.756	34	0.091	56	0.384	1125.5	35	1.192	56	0.117	575.5
8 Social Intercourse	0.547	33	0.078	56	0.459	1074	35	0.767	56	0.222	5.5
9 Leisure	0.421	35	0.068	55	0.517	1111	35	1.073	56	0.142	486.5
10 Privatism	0.189	34	0.046	56	0.664	1006	35	0.212	56	0.416	7
11 **Away From Dwelling**	0.125	34	0.037	55	0.724	1066.5	35	0.706	56	0.240	119
12 Socio-Economic Status	0.095	33	0.033	52	0.757	1035	33	1.260	54	0.104	2
13 Career	0.047	35	0.023	55	0.829	967.5	35	0.041	55	0.483	171

TABLE 5-16
CORRELATION WITH PERSONAL AND ACTIVITY INDICES OF RESPONDENTS WITH NO OR MINOR ACTIVITY HEALTH LIMITATIONS VERSUS THOSE WITH MODERATE OR SEVERE ACTIVITY HEALTH LIMITATIONS

PERSONAL AND ACTIVITY INDICES	MEDIAN TEST X^2 N_x C_c N_y Q	MANN-WHITNEY TEST U N_x z N_y Q $+/T$
1 Income	5.398 ^{20} 0.249 ^{62} **0.020**	991.5 ^{20} 3.246 ^{67} **5.8E-4** $^{107.5}$
2 Career	3.043 ^{21} 0.181 ^{69} 0.081	875.5 ^{21} 1.443 ^{69} 0.075 ^{171}
3 Socio-Economic Status	2.542 ^{20} 0.170 ^{65} 0.111	879.5 ^{20} 2.300 ^{67} **0.011** ^{2}
4 Outdoor	2.314 ^{20} 0.158 ^{70} 0.128	915.5 ^{21} 1.708 ^{70} **0.044** $^{575.5}$
5 Social Intercourse	1.709 ^{21} 0.137 ^{68} 0.191	914.5 ^{21} 1.691 ^{70} **0.045** $^{5.5}$
6 Privatism	1.553 ^{21} 0.130 ^{69} 0.213	831.5 ^{21} 0.909 ^{70} 0.182 ^{7}
7 Simultaneity	1.280 ^{21} 0.119 ^{67} 0.258	911.5 ^{21} 1.665 ^{70} **0.048** ^{196}
8 Age	0.899 ^{21} 0.102 ^{64} 0.343	828 ^{21} 0.877 ^{70} 0.190 $^{146.5}$
9 Pedestrian-Bicycle Travel Time	0.633 ^{8} 0.128 ^{30} 0.426	125 ^{8} 0.035 ^{31} 0.486 $^{9.5}$
10 Motor Vehicle Travel Time	0.338 ^{12} 0.075 ^{47} 0.561	351.5 ^{14} 0.386 ^{47} 0.350 $^{47.5}$
11 Away From Dwelling	0.319 ^{20} 0.060 ^{69} 0.572	791 ^{21} 0.528 ^{70} 0.299 ^{119}
12 Leisure	0.062 ^{21} 0.026 ^{69} 0.803	836 ^{21} 0.955 ^{70} 0.170 $^{486.5}$
13 Muscular Motility	0.000 ^{20} 0.0 ^{70} indeterm.	794 ^{21} 0.556 ^{70} 0.289 ^{14}

The only unequivocal result which emerges from both Tables 5-15 and 5-16 is the assocation between higher **income** and better health. The cause-and-effect relationships do not appear to be simple. There may be some symbiosis operating between these factors. Higher income men may have had less exposure to debilitating health risks or they may have received better health care in the past. On the other hand, healthy men may have had more opportunity to accumulate wealth, which translates into higher income in retirement. Cases where disability forced men into early retirement occurred among these

respondents.

The Median Test did not identify any other statistically significant relationships between activity health limitations and personal and activity indices of the respondents. Five other such relationships were identified by the Mann-Whitney Test within the one-tailed 5% error level, but none of them were common to the two different groupings of the health indicators in Tables 5-15 and 5-16. The income component was probably responsible for most of the correlation between better health and higher **socio-economic status.**

The correlation between no activity health limitations and more **motor vehicle travel time** from Table 5-15 (Q=0.037) is parallelled by such a poor correlation in Table 5-16 (Q=0.350) that the result must be treated as suspect.

The indication that better health is associated with more **outdoor** activity (Q=0.044 in Table 5-16 and Q=0.117 in Table 5-15) is more convincing and makes good intuitive sense.

The same is not the case with **social intercourse,** since the one-tailed correlation is actually with **poorer health.** Since this finding is in the opposite direction than was expected, the error value of 0.045 must be doubled to 0.090, which is above the 5% standard.

As expected, **simultaneity** is associated with poorer health. The error level is just above 5% standard (Q=0.057) in the case of the 'no limitation' versus 'some limitation' grouping of Table 5-15, and just below the 5% standard (Q=0.048) according to the other grouping of Table 5-15. Since much simultaneous (secondary and tertiary) activity was **receptive,** such as watching or listening to TV or listening to the radio, it makes sense that this sort of activity was more common among the less healthy respondents.

The details of temporal and spatial aspects of the time budget survey, as well as personal characteristics of the respondents have now been presented and appropriate statistical testing has been performed. With this information now established, we are now ready to examine the housing histories and the current dwelling characteristics of the respondents in the next two chapters.

[1]The **Indoor-Outdoor Index** is calculated as follows:
Where INOINDEX = 'indoor-outdoor index', INDORMIN = 'minutes spent indoors',
BDWELMIN = 'minutes spent in activities which occurred both inside the dwelling and outdoors associated with the dwelling', BAWAYMIN = 'minutes spent in activities which occurred both indoors and outdoors away from the dwelling', OUTDRMIN = 'minutes spent outdoors', and INOMINU = 'total minutes spent in activities for which location is known to have been indoors, outdoors or both',

$$\text{INOINDEX} = \frac{(\text{INDORMIN} + (2 \times (\text{BDWELMIN} + \text{BAWAYMIN})) + (3 \times \text{OUTDRMIN})) \times 100}{3 \times \text{INOMINU}}$$

[2]The **Dwelling-Away From Dwelling Index** is calculated as follows:
Where DWYINDEX = 'dwelling-away from dwelling index', DWELMIN = 'the number of minutes spent in or in the space immediately associated with the dwelling', AWAYMIN = 'the number of minutes spent away from the dwelling', and DWYMINU = DWELMIN + AWAYMIN,

$$\text{DWYINDEX} = \frac{(\text{DWELMIN} + (2 \times \text{AWAYMIN})) \times 100}{2 \times \text{DWYMINU}}$$

[3]The calculation of the **Privatism Index** is as follows:
Where PRVINDEX = 'privatism index', PRV1MINU = 'the number of minutes during which the respondent was in **private space**', PRV2MINU = 'the number of minutes during which the respondent was in **group space**', PRV3MINU = 'the number of minutes during which the respondent was in **public space**', and PRVZMINU = 'the number of minutes for which information about **social tenure of space required** is not available',

$$\text{PRVINDEX} = \frac{((3 \times \text{PRV1MINU}) + (2 \times \text{PRV2MINU}) + \text{PRV3MINU}) \times 100}{4320 - (3 \times \text{PRVZMINU})}$$

[4]The **no travel involved** category includes activity episodes which, although ancillary to travel, consisted of **waiting**.

[5]The **pedestrian/bicycle travel time index** is calculated as follows:
Where PBTINDEX = the pedestrian/bicycle travel time index, and PBTMINU = the total number of minutes which one respondent spent walking or riding on a leg-powered bicycle on his diary day,

$$\text{PBTINDEX} = \frac{\text{PBTMINU}}{1.82}$$

[6]The **motor vehicle travel time index** is calculated as follows:

Where MVTINDEX = the motor vehicle travel time index, and MVTMINU = the total number of minutes which one respondent spent riding in or driving a motor vehicle on his diary day,

$$MVTINDEX = \frac{MVTMINU}{2.55}$$

[7]The classifications of 'INSIDE AND OUTSIDE' and 'ASSOCIATED WITH THE DWELLING AND AWAY FROM THE DWELLING' refer to the locations of more than one episode which included the 'most satisfying activity' which included locations in both types of places. These classifications do not refer to single episodes which took place in both types of locations.

C H A P T E R   S I X
M O V I N G   A N D   S T A Y I N G :
THE DWELLING HISTORY OF SURVEY RESPONDENTS

The current dwelling situation of the respondents is the result of a complex series of events and decisions. One way to understand this history would be to ask a series of open-ended questions about the decision-making process which led to all of the dwelling moves which the respondents made in the past. Other scholars, such as Rowles (1978) and Spradley (1970; 1979), have made effective use of this sort of ethnographic approach. In skilled hands such research can yield rich details about particular places and the lives of individual research subjects. The extent to which such work can lead to more general theory is often limited, however.

A mixed approach was used for the present study. Relatively open-ended questions were posed about the current dwelling, but a much more standardized set of information was gathered about other dwellings. Respondents to the present survey were interviewed at different stages of their retirement experience. In the terms of Atchley's process model of retirement (1976: 63-71) which was introduced in Chapter One, the respondents to this survey fell into one of the middle four stages: **honeymoon, disenchantment, reorientation** or **stability.** Those in either the **preretirement** or the **termination** stage were not qualified for this survey. It was obvious which of Atchley's stages best described a respondent's situation in many cases of **stability.** The **honeymoon** phase was often difficult to specify. Some of the respondents who could not be contacted may have been in a 'travelling' **honeymoon** phase. Others who had made post-retirement dwelling moves relatively recently would best be described as in a **reorientation** phase. These actual categories are based more on a general psychological state rather than on a readily-identifiable situation based upon the respondent's dwelling. The life-course model used in this study is based, therefore, on their **dwelling history.**

Since at the time of the interview, different respondents were at very different life-course stages, even while retired, it seemed most reasonable to query them about their past housing situations at times of their lives when they were more likely to have had housing needs which were similar

to those which most other now-retired respondents felt at similar stages in their lives. Three events were chosen which most or all respondents would have already experienced: First, the end of the period when the household had its **maximum number of members** should mark the end of the time when the demand for housing services was also highest. Second, **one year after the last dependent child vacated the household** should usually be a time when the level of housing services demand is lowest. Third, by **one year after retirement** the commuting constraint on housing choice would have vanished for most households and the 'honeymoon' period should have been winding down. A fourth event could have occurred anytime in a respondent's life: the time of the **most recent dwelling move.**

These are the four times for which a standard housing information was elicited for the present study. They will be examined in turn. Since chronological relationships are partly a matter of age, the year of birth of respondents will also be discussed. Finally, the respondents will be classified according to four categories of residential mobility. These categories will then be used to correlate with the respondents' personal and activity indices.

Although more details about the current dwelling are treated in the next chapter, basic information about the current dwelling, such as its structural type and tenure, will be used for comparative purposes in this chapter.

I. MAXIMUM HOUSEHOLD SIZE PERIOD

The only part of the maximum household size period for which housing information was specifically elicited was for the last calendar year of the period. It was common for respondents to have to do some careful figuring in order to give this chronological information. A typical statement was something like, "Well, let's see, my youngest daughter is twenty-five years old now, so she was born in 1959. That's when we first had all six of us in the house. Then my oldest son got married the same year I retired, so that would be 1974. That's when we had the five of us in the house."

A. DURATION OF THE MAXIMUM HOUSEHOLD SIZE PERIOD

The information about the number of years during which respondents had

maximum-sized households is given in Table 6-1 on the following page. The number of household members and the structural type of their dwelling during the final year of the period are included in the table, as well as the structural type and the tenure of the current dwelling.

TABLE 6-1
THE MAXIMUM HOUSEHOLD SIZE PERIOD GROUPED BY FIVE-YEAR INTERVALS, HOUSEHOLD SIZE, AND HOUSING CHARACTERISTICS AT THE END OF THE PERIOD AND CURRENTLY

```
                                    4S20SO
                                    4S20SO
                                    3S20SO
                                    4S19OR
                                    4S19SO
                                    4S19SO
                                    3S19AR
                          5S15SO    3S19SO
                6S10SO    5S15SO    5S18OR
4S5SO           6S10AR    3S15AO    5S18SO
4S5SO           5S10OO    6S14SO    4S18SO    5S25OR
5S4SO           6S9OC     5S14SO    3S18SO    4S25OR
4S4SO           6S8OO     5S14SO    3S18SO    4S25SO
-S4SO1          6S8SO     4S14SO    5S17SO    4S24SO
2S3SO           5S8OR     8S13SO    5O17OO    3S24SO
8S2OR           11S7MO    4S13AO    5S17SO    3S23SO
6S2SO           9S6SO     4S13SO    5S16SO    5S22SO
5S2SO           7O6OO     4S13SO    5S16SO    4S22OR
4S2SO           6S6SO     6S12SO    4S16AO    4S22AR   4S30SO
7S1SO           6S6SR     5S12SO    4S16SO    5S21SO   3S30SO            2S39MO
6S1SO           4S6OR     5S11SO    4S16SO    4S21AR   5S27SO            2O39SO                      3S54SO
2S1MO           4S6SO     3S11SO    4S16SO    4S21SO   5S26SO   2A35AR   2Z38OO   2O43OR            2S54SO
|———————|———————|———————|———————|———————|———————|———————|———————|———————|———————|———————|
```

K E Y   T O   T A B L E   6 - 1

The table is organized in 'data-rich histogram' form ordered by the number of years during which respondent households had the maximum number of household members, with the data placed in five-year intervals. The **bold** numerals denote the number of years during which the household was sized maximally. To the left of the **bold** numeral is a column of letters which designates the structural type of the respondents' dwellings during the last year of their maximum household size period:

        A = Apartment in building with five stories or more
        O = dwelling in Other multiple-dwelling-unit building
        M = Mobile dwelling
        S = Single detached dwelling
        Z = no data on structural type

On the left margin of each column is a set of numbers which indicate the maximum number of members of the respondents' households. The first letter to the right of the **bold** numerals designates the current dwelling structural type. The final letter on the right edge of each column records the tenure of the current dwelling:

        C = Co-operative tenure [This category is agglomerated with
             'owner-occupied' tenure for most analytical purposes.]
        O = Owner-occupied dwelling
        R = Rented or leased dwelling

Except for some extreme outliers on the high end, the distribution of
the **period of maximum household size** is not as skewed as it may appear: the
median and the modal period was 16 years, while the mean period was 16.5
years. This distribution is fairly broad, however. The interquartile range is
13 years and the standard deviation is 10.9 years.

The median and the modal **maximum household size** was 4 people, while
the mean size was 4.5 people. The range is quite narrow. The interquartile
range is 1 person and the standard deviation is 1.6 people.

The table shows, not unexpectedly, that larger households tended to
retain their maximum size for shorter periods than smaller households. This
inverse correlation is strong and statistically highly significant.
(Spearman's **rs** = ⁻0.48; Z = ⁻4.41; **Q** = 5.1E⁻6) A high proportion (94%) of the
respondents were living in single detached dwellings in the last year of their
maximum household periods. Three of the five respondents who were living in
multiple-dwelling-unit buildings only had two people in their maximum-sized
households. Since the **1974 Survey of Housing Units** and the **1981 Census** data
indicated a high correlation between single detached dwellings and home owner-
ship, we may conclude that almost all of the respondents to this survey were
among those who shared in what Albert Rose called the transformation in the
post-World War II period of Canada "from a nation of tenants to a nation of
homeowners". (1969: 85) These men were beneficiaries of a national policy
which was in force for the two decades following the war which favoured "the
attainment of home ownership by every family". (**Ibid.**) In any case, about 77%
of the respondents for whom maximum household size data are available owned
their own dwelling at the time of the survey.

There is no significant correlation between the number of years that a
respondent's household was at its maximum size and either the structural type
or the tenure of the present dwelling, as the following table shows:

TABLE 6-2
CORRELATIONS OF THE NUMBER OF YEARS IN WHICH A HOUSEHOLD WAS AT A
MAXIMUM SIZE AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST X^2 N_x C_c N_y Q	MANN-WHITNEY TEST U N_x Z N_y Q +/T
In Multiple-Unit Building	Sing. Detached or Mobile	0.495 ^{22} 0.078 ^{59} 0.482	826.5 ^{23} 0.872 ^{64} 0.192 $^{93.5}$
Rented/Leased	Owned/Co-op	2.529 ^{15} 0.174 ^{66} 0.112	658.5 ^{15} 1.333 ^{72} 0.091 $^{93.5}$

KEY   TO   TABLE   6 - 2

N_x = The number of respondents who share a given X dwelling characteristic.
N_y = The number of respondents who share a contrasting Y dwelling characteristic.
NOTE: The number of respondents included in the **Median Test** is often less and never more than those used for the **Mann-Whitney Test**, since values which equal the median for the respondents with both the X and Y housing characteristics are not used in the **Median Test** calculations.
X^2 = The chi-squared evaluation of the 2 by 2 matrix of the number of respondents who share X and Y dwelling characteristics, and for whom the number of years with a maximum sized household was above and below, respectively, the median number of years for all of the respondents treated in the table.
C_c = The **contingency coefficient**, which measures the **strength** of a correlation, rather than its stochastic **significance**.
Q = 1 - P, or the one-tailed probability that a directional H_o is in fact true.
+/T = A tie correction factor, which is the summation of the T values of $(t^3-t)/12$ where t is the number of ties in each tied group.
U = The lesser of the two Mann-Whitney U statistic values.
Z = One standard deviation, which can be transformed into a P or Q value.

B. CALENDAR YEARS OF THE MAXIMUM HOUSEHOLD SIZE PERIOD

Another perspective on the **maximum household size period** is the calendar years which constituted that period. The following table shows the beginning year of the period, the length in years of the period, the structural type of the current dwelling and the tenure of the current dwelling.

TABLE 6-3
THE FIRST YEAR OF THE MAXIMUM HOUSEHOLD SIZE PERIOD (MINUS 1900)
GROUPED BY FIVE-YEAR INTERVALS

```
                                                5517SO
                                                5516SO
                                                5514SO
                                                5512SO
                                                5422OR
                                                5420SO
                                      5018SO     5418SO
                                      5010AR     5411SO
                                      5006OO     5408OO
                                      4908OR     5404SO
                                      4821AR     5402SO
                                      4819SO     5320SO     5825SO
                           4539MO     4813SO     5225OR     5816SO
                           4522AR     4809OC     5222SO     5816SO
                           4519SO     4727SO     5215AO     5801MO
            3430SO         4516SO     4715SO     5214SO     5717SO
3054SO  3419AR  4024SO     4506OR     4714SO     5211SO     5706SO
3054SO  3418SO  4006SO     4410OO     4705SO     5205SO     5701SO     6508SO
3035AR  3317OO  3939SO     4321SO     4638OO     5204SO     5626SO     6502SO
3019OR  3243OR  3730SO     4225OR     4624SO     5121AO     5613AO     6215SO  7014SO
2906SR  3218SO  3716AO     4223SO     4619SO     5120SO     5612SO     6213SO  7002SO
2603SO  3213SO  3604SO     4216SO     4618OR     5107MO     5610SO     6206SO  7002OR  7801SO
|———|———|———|———|———|———|———|———|———|———|
```

K E Y   T O   T A B L E   6 - 3

The numerals in **bold** print represent the first calendar year minus 1900 of the maximum household size period for each respondent. The numerals to the right of the **bold** printed numerals indicate the number of years which the maximum household size period lasted. (These are the same numbers which appeared in **bold** type in Table 6-1, but here they are of course not in the same order.) The next letter in each column shows the structural type of the present dwelling:

    A = Apartment in building with five stories or more
    O = dwelling in Other multiple-dwelling-unit building
    M = Mobile dwelling
    S = Single detached dwelling

The letter on the right margin of each column represents the tenure of the current dwelling:

    C = Co-operative tenure [This category is agglomerated with
        'owner-occupied' tenure for most analytical purposes.]
    O = Owner-occupied dwelling
    R = Rented or leased dwelling

The distribution of the first maximum household size year is fairly even: the median year is 1950 and the mean is 1948+. The interquartile range is 13 years and the standard deviation is 10.5 years, which are very similar to the equivalent figures for the maximum household size period, discussed above. It appears that both single detached and owner-occupied dwellings are more common among those whose first year of a maximum household size period occurred relatively recently. The following table shows that this relationship is indeed statistically significant, measured by both the Median Test and the

Mann-Whitney Test:

TABLE 6-4
CORRELATIONS OF THE FIRST YEAR IN WHICH A HOUSEHOLD WAS AT A MAXIMUM
SIZE AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	+/T
In Multiple-Unit Building	Sing. Detached or Mobile	5.820	22	0.253	63	**0.016**	981	24	1.998	64	**0.023**	119
Rented/Leased	Owned/Co-op	5.251	14	0.241	71	**0.022**	750.5	15	2.255	73	**0.012**	119

K E Y   T O   T A B L E   6 - 4
(The symbols used are the same as for Table 6-2, except that the statistically-significant Q values are printed here in **bold**.)

Since there is no statistically significant correlation with the **period** of the maximum household size, but there is a clear correlation with the **timing** of the **beginning** of that period, there must be some explanation which requires further exploration. One way of doing so is to examine the data for the **timing** of the **end** of the period. The necessary data are already contained in Table 6-3, so they need not be repeated. Similar statistical testing, however, yields the test data which are shown in the following table:

TABLE 6-5
CORRELATIONS OF THE LAST YEAR IN WHICH A HOUSEHOLD WAS AT A MAXIMUM
SIZE AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	+/T
In Multiple-Unit Building	Sing. Detached or Mobile	0.638	23	0.086	62	0.425	867.5	23	1.267	64	0.103	100.5
Rented/Leased	Owned/Co-op	0.112	15	0.036	70	0.738	606	15	0.742	72	0.229	100.5

K E Y   T O   T A B L E   6 - 5
(The symbols used are the same as for Tables 6-2 and 6-4.)

There is not nearly as clear a correlation with the end of the maximum household period as with the beginning. Since the attainment of a household of maximum size is in most cases a matter of reaching the stage of having pro-

duced all of one's children, the beginning of this period probably fits well
with the age of the respondents. It may be that the correlation which was
observed at this early stage is more a function of the age of the respondents.
The issue of the relationship of the age of the respondents to the other resi-
dential mobility variables is treated in more detail later in this chapter.

C. LOCATION OF DWELLING AT THE END OF THE MAXIMUM HOUSEHOLD SIZE PERIOD

As the discussion in the previous chapter indicated, 'location' is a
multifaceted concept. Three aspects of location are treated in Table 6-6. The
first category considered is the **settlement type** in which the dwelling was
situated. A **city** is a metropolitan centre or a satellite urban centre within a
metropolis. A 'metropolitan centre' or a 'metropolis' is defined in Canada for
the purposes of this study as including any Census Metropolitan Area or Census
Agglomeration. A **suburb** is a part of a metropolis which functions principally
as a residential area, with comparatively few centralizing economic functions
present. An **isolated town** is a smaller urban centre whose economic focus is
largely centripetal. The **country** is used for any settlement pattern which is
not one of the above three.

The second locational category is its named place. Inside of Canada
this includes the **province** and within British Columbia the **municipality** was
recorded.

The third locational subject treated in Table 6-6 is **commuting**. Re-
spondents were asked for information on both the **commuting distance** and the
customary **commuting mode**.

TABLE 6-6
LOCATION OF THE LAST DWELLING WITH THE MAXIMUM HOUSEHOLD SIZE

SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	COMMUTING[2] DISTANCE km	COMMUTING MODE
CT			Pakistan	9.7	A
IT		Alberta	Canada	0.1	W
CT		Alberta	Canada	17.7	A
IT		Manitoba	Canada	1.6	A
CN		Manitoba	Canada	2.4	A
CT		Manitoba	Canada	3.2	A
IT		Nova Scotia	Canada	8.0	A
CT		Ontario	Canada	4.8	A
SB		Ontario	Canada	16.1	T
CT		Ontario	Canada	24.1	A
SB		Québec	Canada	10.5	A
CN		Saskatchewan	Canada	24.1	A
IT	Trail	B.C.	Canada	0.8	B
CN	Langley[3]	B.C.	Canada	29.0	A
SB	Surrey	B.C.	Canada	0.0	A
SB	Surrey	B.C.	Canada	11.3	A
IT[4]	White Rock	B.C.	Canada	0.8	O
CT	Vancouver	B.C.	Canada	n.a.	Z
CT	Vancouver	B.C.	Canada	n.a.	Z
CT	Vancouver	B.C.	Canada	5.6	A
CT	Vancouver	B.C.	Canada	5.6	N
CT	Vancouver	B.C.	Canada	6.4	T
CT	Vancouver	B.C.	Canada	8.0	A
CT	Vancouver	B.C.	Canada	16.1	T
CT	Vancouver	B.C.	Canada	32.2	A
CT	Burnaby	B.C.	Canada	n.a.[5]	A
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	n.a.	Z
CT	Burnaby	B.C.	Canada	2.4	A
CT	Burnaby	B.C.	Canada	3.0	A
CT	Burnaby	B.C.	Canada	4.8	A
CT	Burnaby	B.C.	Canada	5.6	T
CT	Burnaby	B.C.	Canada	8.0	A
CT	Burnaby	B.C.	Canada	8.0	T
CT	Burnaby	B.C.	Canada	8.0	A
CT	Burnaby	B.C.	Canada	9.7	A
CT	Burnaby	B.C.	Canada	9.7	A
CT	Burnaby	B.C.	Canada	10.5	A
CT	Burnaby	B.C.	Canada	11.3	A
CT	Burnaby	B.C.	Canada	11.3	A
CT	Burnaby	B.C.	Canada	12.9	A
CT	Burnaby	B.C.	Canada	12.9	A
CT	Burnaby	B.C.	Canada	12.9	A
CT	Burnaby	B.C.	Canada	12.9	T
CT	Burnaby	B.C.	Canada	14.5	A
CT	Burnaby	B.C.	Canada	16.1	A
CT	Burnaby	B.C.	Canada	17.7	A
CT	Burnaby	B.C.	Canada	17.7	T
CT	Burnaby	B.C.	Canada	19.3	A
CT	Burnaby	B.C.	Canada	29.0	A

TABLE 6-6, CONT.

SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	COMMUTING[2] DISTANCE km	COMMUTING MODE
CT	Burnaby	B.C.	Canada	32.2	A
CT	Burnaby	B.C.	Canada	32.2	A
CT	New Westminster	B.C.	Canada	0.1	W
CT	New Westminster	B.C.	Canada	6.1	A
CT	New Westminster	B.C.	Canada	n.a.	Z
CT	New Westminster	B.C.	Canada	0.5	W
CT	New Westminster	B.C.	Canada	1.6	A
CT	New Westminster	B.C.	Canada	1.6	O
CT	New Westminster	B.C.	Canada	2.4	A
CT	New Westminster	B.C.	Canada	2.4	A
CT	New Westminster	B.C.	Canada	3.2	A
CT	New Westminster	B.C.	Canada	4.0	A
CT	New Westminster	B.C.	Canada	4.8	A
CT	New Westminster	B.C.	Canada	8.0	A
CT	New Westminster	B.C.	Canada	9.7	A
CT	New Westminster	B.C.	Canada	11.3	A
CT	New Westminster	B.C.	Canada	12.9	A
CT	New Westminster	B.C.	Canada	13.7	A
CT	New Westminster	B.C.	Canada	19.3	A
SB	Coquitlam	B.C.	Canada	1.2	W
SB	North Vancouver	B.C.	Canada	16.1	A
SB	West Vancouver	B.C.	Canada	9.7	T
SB	West Vancouver	B.C.	Canada	7.2	A
IT	Campbell River	B.C.	Canada	n.a.	Z
IT	Dawson Creek	B.C.	Canada	2.4	A

K E Y   T O   T A B L E   6 - 6

SETTLEMENT TYPE   COMMUTING MEANS

CT = CiTy   A = Automobile
IT = Isolated Town   B = Bicycle
CN = CouNtry   O = Other or combinations of commuting means
SB = SuBurb   T = Public Transportation
                                   Z = No data or not applicable commuting means

The **city** settlement type was by far the most common for the last year of maximum household size among this sample: eighty percent of the dwellings were in that kind of settlement. Nine percent were in **suburbs**, 6% in **isolated towns** and 3.5% were in the **country**.

Only one respondent was living outside of Canada at this stage in his life. Eleven were in Canada but outside of British Columbia. All but three of the remainder were living within the Lower Mainland of British Columbia.

Commuting data were only collected for those respondents who were employed during most of the final year of their **maximum household size period**. For the others, the notation, **n.a.**, appears in the **commuting distance** column. For the employed group, the mean one-way commuting distance was 10.2 km. This is nearly 4 km more than the mean 1963 commuting distance which Wolforth reported for jobs located in the central area of Vancouver City. (1965: 34)

The median figure was 8 km, which comes closer to Wolforth's data from a
Vancouver City Directory sample. The range was wide, however, from 0.0 km to
32.2 km, while the interquartile range was 10.5 km and the standard deviation
was 8.3 km.

There are exceptions, of course, but for most people commuting is a
necessary chore. Indeed, Wolforth began his monograph with the assertion: "The
long journey to work is an unpleasant fact of life for many modern urbanites."
(1965: 7) Given that premise, then, the perceptual calculus which people use
to make their work-location and dwelling-location decisions must include
offsetting positive factors about their job and their dwellings, and perhaps
even the distance itself, which make the spatial separation of the two
tolerable. During child-rearing years an important factor, which amounts to
another constraint, is to live in a dwelling and in an area which are
appropriate for the children. Such a factor is removed after the 'nest' is
empty, which is the next time for which a housing information sample was taken
in the present survey.

II. THE 'EMPTY NEST' PERIOD

A household which has included growing children assumes a very differ-
ent character when the children are no longer living at home. An 'empty nest'
is usual in Canada where neolocality is the normative residence pattern for
newly married people. Canadians often move to their own residence even before
marriage. Such moves are frequently associated with the pursuit of university
education or an out-of-town job.

Whatever the cause, the advent of an 'empty nest' introduces a new
situation of freedom to a household. Sometimes one or more bedrooms are freed
up for alternative uses, such as for hobbies or other leisure activities.
Their function as sleeping rooms is often retained on a periodic basis: they
are set aside as 'guest rooms', no matter how infreqently guests actually use
them.

As the image of 'empty nest' implies, another viable alternative is for the remaining householders to decide to move away from the dwelling in which the children were raised. It was in order to assess the actual housing situation after the nest became empty that the respondents to the present survey were asked about their dwelling one year after the last of their dependent children began living elsewhere.

A. THE 'EMPTY NEST' PERIOD DURATION

The 'empty nest' period is open-ended in the normal course of events. Table 6-7 shows the pattern of dwelling structural type in tandem with the distribution of the number of years since the respondents began living in an 'empty nest'.

TABLE 6-7
SUMMARY OF THE NUMBER OF YEARS WITH AN 'EMPTY NEST' GROUPED BY FIVE-YEAR INTERVALS

```
          S10SO  S15SO
          S10SO  S15SO  S20SO
          S10SO  S15AR  S20SO
          S10SO  S14SO  S20SO
          S10OR  S14SO  S20OO
   S5SO   S10AO  S14MO  S19SO
   S5SO    S8SO  S14AR  S18SO
   S5SO    S8SO  S13OO  S18OC
   S5SO    S8OR  S12SO  S17SO
   S5OR    S8AO  S12SO  S17SO                          S35SO
   S3SO    S7SO  S12SO  S17SO                          S34OR
   S2SO    S7SO  S12SO  S17OR                          S33SO
   S2SO    S7SO  S12SO  0170O  S25MO                   S32SO
   S1SO    S7SO  S11SO  S17AR  S22SO                   S31SO
   S1SO    S6SO  0110O  S16OR  S21SO  S29AO      S31AR           S41SR
   |------|------|------|------|------|------|------|------|------|
```

KEY TO TABLE 6-7:
The table is organized in 'data-rich histogram' form ordered by the number of years (in **bold**) since the last of the respondents' dependent children began living elsewhere. The data are organized by five-year intervals. The letter to the left of the **bold** numerals indicates the structural type of the dwelling one year after this 'empty nest' period began. Similarly, the letter to the right of the **bold** numerals designates the structural type of the current dwelling:

        A = Apartment in building with five stories or more
        M = Mobile dwelling   S = Single detached dwelling
        O = dwelling in Other multiple-dwelling-unit building

The letter on the right margin of each column contains the coding for the tenure of the present dwelling:

        C = Co-operative tenure [This category is agglomerated with
            'owner-occupied' tenure for most analytical purposes.]
        O = Owner-occupied dwelling
        R = Rented or leased dwelling

The distribution is slightly positively skewed. The median is 13 years and the mean is 14.5 years. The distribution is quite wide: the interquartile range is 10 years and the standard deviation is 9.0 years.

Since only two of the sixty-five respondents who had entered an 'empty nest' phase were not living in single detached dwellings one year after they entered that period, it is evident that there is no strong tendency for the men in this sample to abandon their nests quickly. The data on Table 6-7 indicate, however, that it is more likely for respondents to be living in dwellings in multiple dwelling-unit buildings if their empty nest period began a long time ago. Whether this relationship stands up statistically can be tested by the Mann-Whitney and Median Tests. These results are given in the following table.

TABLE 6-8
CORRELATIONS OF THE NUMBER OF YEARS WITH AN 'EMPTY NEST' HOUSEHOLD AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST				MANN-WHITNEY TEST				
		x^2	N_x C_c	N_y	Q	U	N_x z	N_y	Q	$+/T$
In Multiple-Unit Building	Sing. Detached or Mobile	2.003	17 0.174	47	0.157	507	18 1.234	47	0.109	79.5
Rented/Leased	Owned/Co-op	2.744	11 0.203	53	0.098	374	11 1.349	54	0.089	79.5

KEY TO TABLE 6-8
(The symbols used are the same as for Tables 6-2, 6-4 and 6-5.)

The table indicates that the relationships noted are not statistically significant within a 5% error standard. If there is a stronger tendency for now-retired men to move to rented dwellings and to dwellings in multiple-unit buildings the longer they have been living in an 'empty nest' household, then this study does not conclusively demonstrate it.

B. LOCATION OF THE DWELLING ONE YEAR AFTER THE 'EMPTY NEST' PERIOD BEGAN

In a form similar to Table 6-6, with treatment of **settlement type**, **named place**, **commuting distance** and **commuting mode**, the following table gives some details about the location of the dwelling which 'empty nest' respondents occupied one year after their 'empty nest' period began.

TABLE 6-9

LOCATION OF THE DWELLING ONE YEAR AFTER THE 'EMPTY NEST' PERIOD BEGAN

EMPTY NEST YEAR	SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	COMMUTING[2] DISTANCE km	COMMUTING MODE
1967	CT			Germany	19.3	A
1955	IT		Alberta	Canada	0.1	W
1976	CT		Alberta	Canada	17.7	A
1971	CT		Manitoba	Canada	3.2	A
1970	IT		Manitoba	Canada	16.1	A
1966	IT		Newfoundland	Canada	3.2	A
1972	SB		Ontario	Canada	16.1	T
1950	IT	Trail	B.C.	Canada	0.8	B
1959	CN	Langley[3]	B.C.	Canada	29.0	A
1964	SB	Surrey	B.C.	Canada	n.a.	Z
1982	SB	Surrey	B.C.	Canada	n.a.	Z
1967	SB[4]	Surrey	B.C.	Canada	48.3	A
1981	IT[4]	White Rock	B.C.	Canada	n.a.	Z
1981	IT	White Rock	B.C.	Canada	0.8	O
1977	SB	Richmond	B.C.	Canada	19.3	A
1969	CT	Vancouver	B.C.	Canada	1.0	A
1964	CT	Vancouver	B.C.	Canada	4.8	O
1943	CT	Vancouver	B.C.	Canada	0.8	T
1953	CT	Vancouver	B.C.	Canada	6.4	A
1976	CT	Vancouver	B.C.	Canada	8.0	A
1965	CT	Burnaby	B.C.	Canada	n.a.	Z
1973	CT	Burnaby	B.C.	Canada	n.a.	Z
1973	CT	Burnaby	B.C.	Canada	n.a.	Z
1974	CT	Burnaby	B.C.	Canada	n.a.	Z
1974	CT	Burnaby	B.C.	Canada	n.a.	Z
1977	CT	Burnaby	B.C.	Canada	n.a.	Z
1978	CT	Burnaby	B.C.	Canada	n.a.	Z
1979	CT	Burnaby	B.C.	Canada	n.a.	Z
1979	CT	Burnaby	B.C.	Canada	n.a.	Z
1979	CT	Burnaby	B.C.	Canada	n.a.	Z
1983	CT	Burnaby	B.C.	Canada	n.a.	Z
1967	CT	Burnaby	B.C.	Canada	2.4	A
1951	CT	Burnaby	B.C.	Canada	3.0	A
1967	CT	Burnaby	B.C.	Canada	4.8	A
1970	CT	Burnaby	B.C.	Canada	5.6	T
1974	CT	Burnaby	B.C.	Canada	6.4	A
1972	CT	Burnaby	B.C.	Canada	8.0	A
1977	CT	Burnaby	B.C.	Canada	8.0	A
1970	CT	Burnaby	B.C.	Canada	9.7	A
1968	CT	Burnaby	B.C.	Canada	10.5	A
1974	CT	Burnaby	B.C.	Canada	12.9	T
1964	CT	Burnaby	B.C.	Canada	12.9	A
1969	CT	Burnaby	B.C.	Canada	14.5	A
1974	CT	Burnaby	B.C.	Canada	14.5	A
1962	CT	Burnaby	B.C.	Canada	17.7	A
1974	CT	Burnaby	B.C.	Canada	17.7	O
1979	CT	Burnaby	B.C.	Canada	24.1	A
1976	CT	Burnaby	B.C.	Canada	29.0	A
1976	CT	Burnaby	B.C.	Canada	32.2	A
1964	CT	Burnaby	B.C.	Canada	32.2	A
1970	CT	New Westminster	B.C.	Canada	n.a.	Z
1972	CT	New Westminster	B.C.	Canada	n.a.	Z
1979	CT	New Westminster	B.C.	Canada	n.a.	Z
1982	CT	New Westminster	B.C.	Canada	n.a.	Z
1983	CT	New Westminster	B.C.	Canada	n.a.	Z
1967	CT	New Westminster	B.C.	Canada	1.6	A
1953	CT	New Westminster	B.C.	Canada	1.6	O
1969	CT	New Westminster	B.C.	Canada	3.2	A
1963	CT	New Westminster	B.C.	Canada	4.0	A
1949	CT	New Westminster	B.C.	Canada	8.0	A

TABLE 6-9, CONT.

EMPTY NEST YEAR	SETTLE- MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	COMMUTING[2] DISTANCE km	COMMUTING MODE
1952	CT	New Westminster	B.C.	Canada	9.7	A
1966	CT	New Westminster	B.C.	Canada	13.7	A
1972	CT	New Westminster	B.C.	Canada	41.8	A
1972	SB	North Vancouver	B.C.	Canada	16.1	A
1967	SB	West Vancouver	B.C.	Canada	7.2	A

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SETTLEMENT TYPE   COMMUTING MEANS

CT = CiTy   A = Automobile
IT = Isolated Town   B = Bicycle
CN = CouNtry   O = Other or combinations of commuting means
SB = SuBurb   T = Public Transportation
                             Z = No data or no applicable commuting means

The vast majority of respondents were living in cities one year after their 'empty nest' period began (82%). Nine percent lived in isolated towns, 7.5% in suburbs and one or 1.5% said that the 'country' was his home at that time. One respondent was in Germany, six were in Canada, and only one of the remaining sixty respondents who were living in British Columbia then was actually outside of the Lower Mainland.

Forty-six of the 67 respondents who had 'empty nests' commuted to work during most of the year following the departure of their last dependent child. Of these, 78% commuted by automobile, 11% by public transit, 2% by bicycle, 2% by foot and 7% by other means or by combinations of commuting modes. Their commuting distance varied considerably. The interquartile range is 14.5 km and the standard deviation is 11.2 km. The mean distance was 12.3 km while the median one-way commuting distance was 8.85 km, so the distribution of these distances for these 46 respondents is markedly positively skewed.

The most important meaning of all these numbers is that for about 69% of the 'empty nest' respondents, the first year after the nest became empty was still a time of commuting to a place of employment. This means that the journey-to-work was still an important part of their daily activities and their choice of housing was to a large degree thereby constrained.

III. THE RETIREMENT PERIOD

As mentioned in Chapter 1, retirement can end as well as begin. Often the 'retired' social status ends with death, but it may also end at an earlier stage, when a man becomes too infirm or otherwise dependent on others to have genuine decision-making power over his life. Anybody who had reached such a stage in life was not qualified as a respondent in this study, so all of the respondents to this survey still occupied the 'retired' social status at the time of the telephone interview in the latter half of 1984. Therefore the simple formula, (1984 - 'the year of retirement'), adequately defines the retirement period for this group of men.

A. RETIREMENT PERIOD DURATION

Table 9-10 on the following page combines information about the number of years the retirement period had lasted before the interview with housing information about the dwelling occupied one year after retirement began as well as information about the current dwelling.

As with the mirror-image Table 6-6, the distribution is skewed in the direction of those respondents who have been retired the longest: the median is 8 years and the mean is 10.2 years. The range is very wide: the interquartile range is 9 years and the standard deviation is 6.8 years.

Seventy-six percent of the respondents lived in single-detached dwellings during that year; three percent were in mobile dwellings, 5% in apartments in buildings more than five stories high, and 14% lived in other multiple-dwelling buildings. There is a corresponding decline of single-detached dwellings which housed respondents at the time of the interview. The figures are 69% for single-detached, still 3% in mobile dwellings, 9% in apartments in building with more than five stories and 18% in other multiple-dwelling buildings.

Over 82% of the respondents were owners of their dwellings at the time of the interview, and 16.5% were renting. One respondent lived in a co-operatively-owned dwelling.

TABLE 6-10

SUMMARY OF THE NUMBER OF YEARS SINCE RETIREMENT GROUPED BY FIVE-YEAR
INTERVALS AND HOUSING CHARACTERISTICS ONE YEAR LATER AND CURRENTLY

```
                    S10SO
                    O10OO
                    A10OR
                    S9SO
                    S9SO
                    S9SO
                    O9OR
                    O9AR
                    A9OO
                    S8SO
                    S8SO
                    S8SO
                    M8MO
          S5SO      S7SO
          S5SO      S7SO
          S5SO      S7SO
          S4SO      S7SO
          S4SO      S7SO      S15SO
          S4SO      S7SO      S15SO
          S4AR      O7SO      S15SO
          M4SO      S6SO      O15SO
          S3SO      S6SO      M15MO
          S3SO      S6SO      S14SO      S20OR
          S3SO      S6SO      S13SO      O20OR
          S3SO      S6SO      S13SO      S19SO
          S3SO      S6SO      S13SO      S19OO
          S3OR      S6SO      O13OO      A19AR
          S2SO      S6SO      S12SO      S17SO
          S2SO      S6SO      S12SO      S17OO
          S2SO      S6SO      O12OR      S17MO
          S2SO      S6OR      O12OR      O17OR      A25SR
          S2SO      S6AO      S11SO      S16SO      S23SO
          S2SO      O6AO      S11SO      S16AO      S22AO      S29SO
          S1SO      A6AR      O11SO      O16CC      S21SO      Z26AR      S36OO
     |_____|_____|_____|_____|_____|_____|_____|
```

K E Y   T O   T A B L E   6 - 1 0 :

The table is in 'data-rich histogram' form ordered by the number of years (in
bold) since the respondents retired. The data are organized by five-year in-
tervals. The letter to the left of the bold numerals indicates the structural
type of the dwelling one year after this retirement period began. The letters
to the right of the bold numerals represent the structural type of the current
dwelling:

    A = Apartment in building with five stories or more
    M = Mobile dwelling
    O = dwelling in Other multiple-dwelling-unit dwelling
    S = Single detached dwelling
    Z = no data on structural type

The letters on the right margin of each column show the tenure of the current
dwelling:

    C = Co-operative tenure [This category is agglomerated with
        'owner-occupied' tenure for most analytical purposes.]
    O = Owner-occupied dwelling
    R = Rented or leased dwelling

As expected, those respondents who had been retired the longest appear to be more likely to be living in multiple and rented dwellings than the more recently retired men. This conjecture can be tested by the same two ordinal tests used previously. The results appear in Table 9-11:

TABLE 6-11
CORRELATIONS OF THE NUMBER OF YEARS SINCE RETIREMENT BEGAN
AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST x^2 N_x c_c N_y Q	MANN - WHITNEY TEST U N_x z N_y Q $+/T$
In Multiple-Unit Building	Sing. Detached or Mobile	8.279 25 0.295 62 **0.004**	1155.5 25 2.947 66 **0.002** 358.5
Rented/Leased	Owned/Co-op	3.389 15 0.194 72 0.068	740 15 1.824 76 **0.034** 358.5

K E Y   T O   T A B L E   6 - 1 1

(The symbols used are the same as for Tables 9-2, 9-4, 9-5 and 9-8.)

The case of structural type is very strong. Retired men are much more likely to live in multiple dwellings in the study area if they have been re-tired a long time than their more recently retired neighbours. The null hypo-thesis that the **rented/leased** group cannot be stochastically distinguished from the **owned-co-op** group in the same way cannot be rejected at the 5% error level if only the central tendency is considered (the Median Test), but it can be rejected if all of the ordinal power of the number of years since retire-ment can be considered (the Mann-Whitney Test). It can, therefore be asserted that there is a less-marked, but still identifiable tendency for retired men to move into rented dwellings as time passes in their retirement.

B. DWELLING LOCATION ONE YEAR AFTER THE RETIREMENT PERIOD BEGAN

Details about the location of respondents' dwellings are given in Ta-ble 9-12 on the following page. The format is similar to Tables 9-6 and 9-9.

TABLE 6-12
LOCATION OF THE DWELLING ONE YEAR AFTER RETIREMENT BEGAN

RETIRE- MENT YEAR	SETTLE- MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	STRUCTURAL TYPE
1978	IT			Phillipines	S
1968	CT		Florida	U.S.A.	O
1962	IT		Alberta	Canada	S
1975	SB		Manitoba	Canada	A
1978	CT		Saskatchewan	Canada	S
1969	IT		Saskatchewan	Canada	S
1964	IT	Trail	B.C.	Canada	S
1965	SB	Langley	B.C.	Canada	M
1969	SB	Surrey	B.C.	Canada	M
1976	SB	Surrey	B.C.	Canada	M
1980	SB	Surrey	B.C.	Canada	M
1971	SB	Surrey	B.C.	Canada	S
1980	SB	Surrey	B.C.	Canada	S
1982	SB	Surrey	B.C.	Canada	S
1974	IT	White Rock	B.C.	Canada	A
1971	IT	White Rock	B.C.	Canada	O
1961	IT	White Rock	B.C.	Canada	S
1967	IT	White Rock	B.C.	Canada	S
1978	IT	White Rock	B.C.	Canada	S
1982	IT	White Rock	B.C.	Canada	S
1982	IT	White Rock	B.C.	Canada	S
1959	CT	Vancouver	B.C.	Canada	A
1972	CT	Vancouver	B.C.	Canada	A
1948	CT	Vancouver	B.C.	Canada	S
1967	CT	Vancouver	B.C.	Canada	S
1968	CT	Vancouver	B.C.	Canada	S
1978	CT	Vancouver	B.C.	Canada	S
1967	CT	Burnaby	B.C.	Canada	O
1969	CT	Burnaby	B.C.	Canada	O
1972	CT	Burnaby	B.C.	Canada	O
1974	CT	Burnaby	B.C.	Canada	O
1975	CT	Burnaby	B.C.	Canada	O
1978	CT	Burnaby	B.C.	Canada	O
1955	CT	Burnaby	B.C.	Canada	S
1963	CT	Burnaby	B.C.	Canada	S
1968	CT	Burnaby	B.C.	Canada	S
1969	CT	Burnaby	B.C.	Canada	S.
1969	CT	Burnaby	B.C.	Canada	S
1970	CT	Burnaby	B.C.	Canada	S
1971	CT	Burnaby	B.C.	Canada	S
1972	CT	Burnaby	B.C.	Canada	S
1973	CT	Burnaby	B.C.	Canada	S
1973	CT	Burnaby	B.C.	Canada	S
1974	CT	Burnaby	B.C.	Canada	S
1975	CT	Burnaby	B.C.	Canada	S
1975	CT	Burnaby	B.C.	Canada	S
1976	CT	Burnaby	B.C.	Canada	S
1976	CT	Burnaby	B.C.	Canada	S
1977	CT	Burnaby	B.C.	Canada	S
1977	CT	Burnaby	B.C.	Canada	S
1977	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S

TABLE 6-12 CONT.

RETIRE-MENT YEAR	SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	STRUCTURAL TYPE
1978	CT	Burnaby	B.C.	Canada	S
1978	CT	Burnaby	B.C.	Canada	S
1979	CT	Burnaby	B.C.	Canada	S
1979	CT	Burnaby	B.C.	Canada	S
1980	CT	Burnaby	B.C.	Canada	S
1980	CT	Burnaby	B.C.	Canada	S
1981	CT	Burnaby	B.C.	Canada	S
1981	CT	Burnaby	B.C.	Canada	S
1981	CT	Burnaby	B.C.	Canada	S
1981	CT	Burnaby	B.C.	Canada	S
1982	CT	Burnaby	B.C.	Canada	S
1982	CT	Burnaby	B.C.	Canada	S
1982	CT	Burnaby	B.C.	Canada	S
1983	CT	Burnaby	B.C.	Canada	S
1978	CT	New Westminster	B.C.	Canada	A
1973	CT	New Westminster	B.C.	Canada	O
1975	CT	New Westminster	B.C.	Canada	O
1977	CT	New Westminster	B.C.	Canada	O
1965	CT	New Westminster	B.C.	Canada	S
1967	CT	New Westminster	B.C.	Canada	S
1971	CT	New Westminster	B.C.	Canada	S
1972	CT	New Westminster	B.C.	Canada	S
1975	CT	New Westminster	B.C.	Canada	S
1976	CT	New Westminster	B.C.	Canada	S
1977	CT	New Westminster	B.C.	Canada	S
1977	CT	New Westminster	B.C.	Canada	S
1977	CT	New Westminster	B.C.	Canada	S
1978	CT	New Westminster	B.C.	Canada	S
1979	CT	New Westminster	B.C.	Canada	S
1981	CT	New Westminster	B.C.	Canada	S
1981	CT	New Westminster	B.C.	Canada	S
1965	SB	West Vancouver	B.C.	Canada	A
1980	SB	West Vancouver	B.C.	Canada	S
1964	IT	Courtenay	B.C.	Canada	O
1959	NA	not applicable	n.a.	n.a.	N[6]

K E Y   T O   T A B L E   6 - 1 2

SETTLEMENT TYPE	STRUCTURAL TYPE
CT = CiTy	A = Apartment in building with 5 stories or more
IT = Isolated Town	M = Mobile dwelling
CN = CouNtry	O = dwelling in Other multiple-dwelling-unit building
SB = SuBurb	S = Single detached dwelling
NA = Not Applicable	N = Not applicable

Three respondents were then living outside Canada, and four were in Canada outside British Columbia. Only two of the British Columbia residents were outside the Lower Mainland. Those who lived within the 1981 Vancouver Census Metropolitan Area are depicted on Map 6-1. The map distinguishes the structural type of those dwellings. The dwellings of eight of the respondents within the Vancouver CMA were located outside of the telephone survey study area one year after retirement.
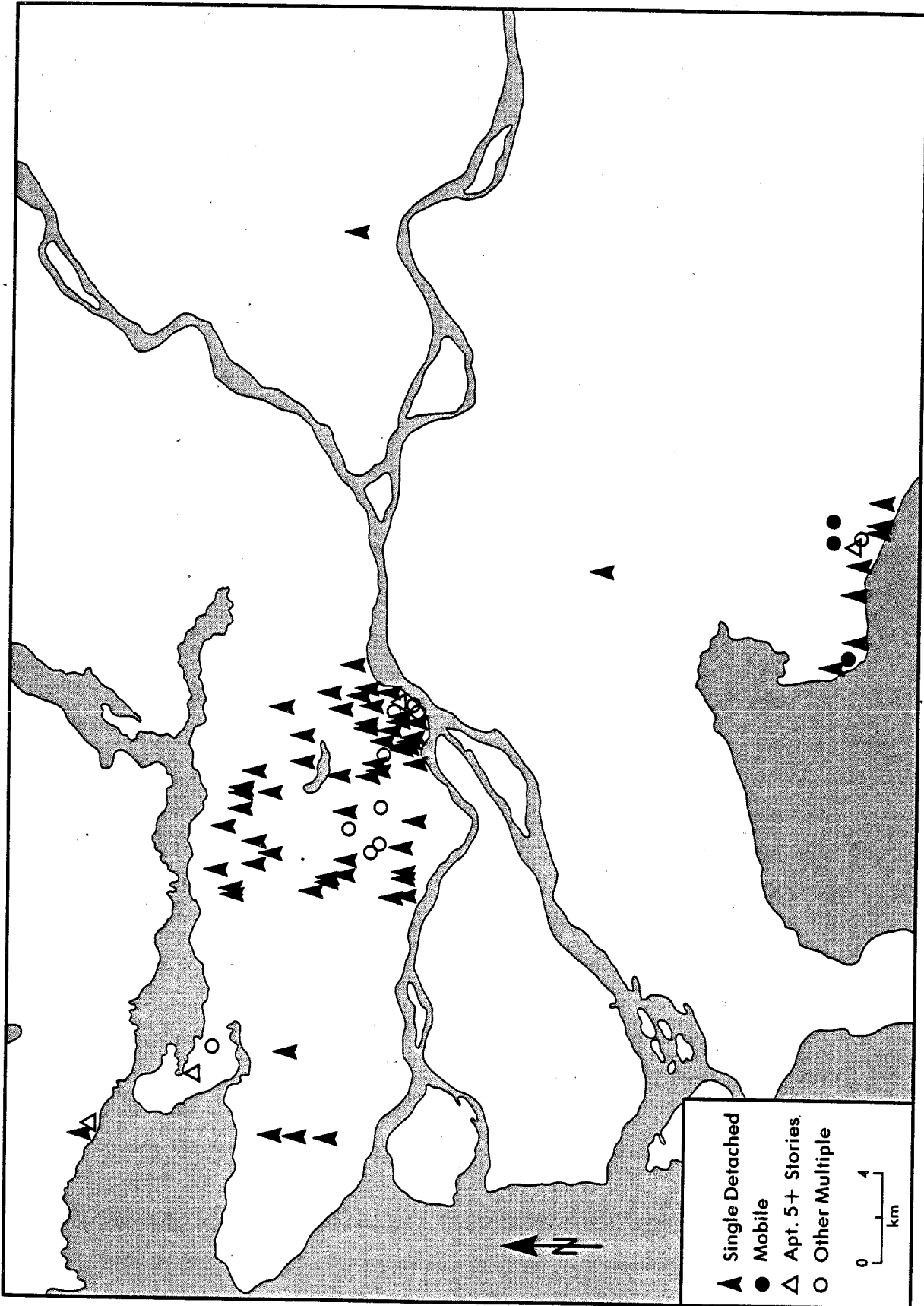
MAP 6-1: LOCATION OF RESPONDENT DWELLING TWELVE MONTHS AFTER RETIREMENT BY STRUCTURAL TYPE

▲ Single Detached
● Mobile
△ Apt. 5+ Stories.
○ Other Multiple

In sum, one year after retirement found all but a handful of respondents in the same or similar location as they were at the time of the interview and most of them were also in the same structural type of dwelling. It was much more common for respondents to move from a single detached dwelling to a multiple-dwelling building by the time of the interview than the other way around.

IV. THE LAST RESIDENTIAL MOVE

A. CHRONOLOGY

The last time the respondent changed residences could theoretically have been anytime from never to the day before the interview. In fact, the years ranged from 1923 to 1984. Those who had spent more than half a century in the same dwelling have to be regarded as exceptional in the western Canadian context, although much less so in many other parts of the world where settlement and residential mobility patterns are more stable than in the Lower Mainland of British Columbia.

1. Structural Type and Tenure of the Current Residence

Table 6-13 on the following page shows the distribution of the year of the last move as well as information about the structural type of the last dwelling and the structural type and tenure of the current one.

The distribution is negatively skewed, with the median year being 1966 and the mean time late in 1964. The range is wide: the interquartile range is 21 years and the standard deviation is 13.8 years. The remnant of a pre-war wave of moves is barely perceptible. Only one respondent made his last move during World War II. The evidence of a substantial post-war wave of moving appears to have bottomed out between 1969 and 1970, followed by a wave of moving which has a very different character: most of the moves from 1968 to the time of the survey were made after retirement, or at least in the 'empty nest' phase with a view toward retirement. Part of the evidence for the markedly different type of moving after 1968 is shown in Table 6-13 with a general trend toward more dwellings in multiple-unit buildings and also toward more rented dwellings.

<p align="center">TABLE 6-13
YEAR OF LAST MOVE MINUS 1900 GROUPED BY FIVE-YEAR INTERVALS
AND DWELLING STRUCTURE BEFORE AND AFTER THE MOVE</p>

```
                                                                  S80S
                                                                  S80M
                                                                  080S
                                                            S75S  080o
                                                            S74S  S79o
                                                            074a  S79A
                                    055S                    074S  079s
                                    S55S                    073o  S78S
                                    S54S  060S              0730  S78A
                                    S54S  S60S  S65S        A73a  078S  S84A
                                    S53S  S60S  S65S        S73s  S77S  084S
                                    053S  S59S  S64S        A73o  S77O  S83A
                              050S  052S  S58S  S64S  S680  S73S  A77S  A82S
                              A50S  052S  S57S  0640  S68s  A72a  S76S  A82o
                              S50S  S52S  S56S  S62S  S67S  S72o  S76o  A82o
                              S49S  052S  S56S  S62S  S66S  072o  0760  S81M
      S29S                    048S  S52S  S56S  S61S  S66S  S71S  076M  081a
S23S  S28S  S34S  S38S  S43S  S47S  M51S  S56S  S61S  A66a  S71S  A76o  A81O
|——-|——-|——-|——-|——-|——-|——-|——-|——-|——-|——-|——-|——-|
```

<p align="center">K E Y   T O   T A B L E   6 - 1 3</p>

The numbers printed in **bold** are the years in the 20th Century during which the respondents' last dwelling move took place. Thus, **47** stands for the year 1947. The letter to the left of each numeral denotes the **structural type** of the dwelling which was **vacated** and the letter to the right refers to the **structural type** of the **occupied** dwelling, as follows:

a or A = Apartment in a building with five stories or more
      M = Mobile dwelling
o or O = dwelling an Other multiple-dwelling-unit building
s or S = Single detached dwelling

If the right-most letter in each column is printed lower case, then the current dwelling is **rented** or **leased**. If that same letter is printed in REGULAR UPPER CASE, then the tenure of the current dwelling is **owner-occupied**, and in the one case when it is **both lower case and bold**, then the tenure is **co-operative**.

The tendency of more recent moves to be made into current dwellings which are in multiple-unit dwellings and which are rented can be tested statistically, according to the Median and Mann-Whitney Tests. The data in Table 6-14 on the following page show that the correlations are very strong. There can be little doubt that among the population of retired men which this sample represents most of the recent moves have been to dwellings which are either not owner-occupied or not single detached, and most of the men who have not moved in recent years are living in their own single detached dwellings.

TABLE 6-14
CORRELATIONS OF YEAR OF THE LAST RESIDENTIAL MOVE
AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	+/T
In Multiple-Unit Building	Sing. Detached or Mobile	26.385	24	0.480	64	2.9E-7	1361.5	25	4.773	66	9.1E-7	74
Rented/Leased	Owned/Co-op	15.909	14	0.391	74	6.6E-5	861	15	3.115	76	0.001	74

KEY TO TABLE 6-14

(The symbols used are the same as for Tables 6-2, 6-4, 6-5, 6-8 and 6-11.)

2. Personal Characteristics and Activities

A strong correlation between the year of the most recent residential move and the structural type and tenure of the present dwelling has been established. Whether there is any similar relationship with the personal characteristics and activity classifications for which indices have been calculated needs to be determined. The Spearman's rs values for these variables are therefore shown in Table 6-15.

Since there appears to be no theoretical justification for predicting the direction of the correlations, the two-tailed standard is used. None of the correlations are strong enough to reject the null hypothesis of no correlation between the year of the last move and each other variable at or below the 5% error level. The Q values are not shown on the table, since the lowest Q value, for **simultaneity** and the **year of the last move**, is 0.068.

Even supposing that the lack of significant correlation is simply a problem of the sample sizes, and that larger samples would produce the same rs values, most of the values are very low. It is certainly reasonable to conclude that the timing of the last move relates very little to general life circumstances (**vide: socio-economic status, income, career** and **age**). Even the two highest rs values, for the **year of the last move** and both **simultaneity** and **motor vehicle travel time**, are little different from the calculated values of correlation between the latter two variables themselves. (See Table 5-14.) In short, although the tenure and structural type of the current dwelling is highly correlated with the year of the last move, this relationship does not

appear to have much effect on what these retired men do on a daily basis.
Neither does the timing of the move appear to have stemmed to a significant
extent from any readily identifiable personal characteristics.

TABLE 6-15
SPEARMAN'S RANK CORRELATIONS OF THE YEAR OF THE LAST RESIDENTIAL MOVE
WITH INDICES OF PERSONAL CHARACTERISTICS AND ACTIVITIES

X-Y INDICES CORRELATED WITH Y ORDERED BY RANKS OF X	SPEARMAN'S RANK CORRELATION		N
	rs	rs-z	
SIM-LAST	0.21	1.83	78
MVT-LAST	0.20	1.53	61
SES-LAST	0.15	1.39	87
INC-LAST	0.14	1.27	71
CAR-LAST	0.12	1.16	90
WKL-LAST	0.08	0.78	91
MOT-LAST	⁻0.08	⁻0.74	91
AGE-LAST	⁻0.08	⁻0.73	91
PRV-LAST	⁻0.02	⁻0.23	91
INO-LAST	⁻0.02	⁻0.21	91
DWY-LAST	0.02	0.20	91
PBT-LAST	$^{-}8.1E^{-}3$	⁻0.05	39
SCN-LAST	$^{-}1.1E^{-}3$	⁻0.01	91

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rs: Spearman's Rank Correlation Coefficient rs
rs-z: Zed-score for Spearman's rs   AGE: Age in Years
SES: Socio-Economic Status Index   CAR: Career Index
INC: Income Index   PRV: Privacy Index
SCN: Social Intercourse Index   MOT: Muscular Motility Index
WKL: Work-Leisure Index   INO: Indoor-Outdoor Index
DWY: Dwelling-Away From Dwelling   SIM: Simultaneity Index
        Index   MVT: Motor Vehicle Travel Time
PBT: Pedestrian or Bicycle Travel   Index
        Time Index   LAST: Year of Last Residential Move

B. LOCATION OF THE IMMEDIATE PAST DWELLING

The location of the immediate past dwelling is classified similarly to
the location of their dwelling at the other sample points in respondents'
lives which were covered in Table 6-12 except that information about
structural type is reported for that dwelling rather than commuting means and
one-way distance. These locations are shown on the following page in Table 6-
16.

TABLE 6-16
LOCATION OF THE IMMEDIATE PAST DWELLING

RETIRE-MENT YEAR	SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	STRUCTURAL TYPE
1980	CN		Washington	U.S.A.	S
1981	SB		Washington	U.S.A.	O
1955	IT		Alberta	Canada	S
1978	CN		Manitoba	Canada	S
1982	SB		Manitoba	Canada	A
1968	IT		N. W. Territories	Canada	S
1977	CT		Ontario	Canada	S
1976	IT		Saskatchewan	Canada	S
1979	CT		Saskatchewan	Canada	S
1981	SB	Langley D.M.	B.C.	Canada	S
1977	CT	Maple Ridge	B.C.	Canada	S
1950	SB	Surrey	B.C.	Canada	S
1965	SB	Surrey	B.C.	Canada	S
1966	SB	Surrey	B.C.	Canada	S
1967	SB	Surrey	B.C.	Canada	S
1973	SB	Surrey	B.C.	Canada	O
1976	SB	Surrey	B.C.	Canada	S
1984	SB	Surrey	B.C.	Canada	O
1971	IT	White Rock	B.C.	Canada	S
1973	IT	White Rock	B.C.	Canada	O
1976	IT	White Rock	B.C.	Canada	A
1976	IT	White Rock	B.C.	Canada	O
1980	IT	White Rock	B.C.	Canada	O
1980	IT	White Rock	B.C.	Canada	S
1984	IT	White Rock	B.C.	Canada	S
1976	SB	Richmond	B.C.	Canada	O
1948	CT	Vancouver	B.C.	Canada	O
1950	CT	Vancouver	B.C.	Canada	A
1950	CT	Vancouver	B.C.	Canada	O
1952	CT	Vancouver	B.C.	Canada	O
1952	CT	Vancouver	B.C.	Canada	O
1952	CT	Vancouver	B.C.	Canada	O
1952	CT	Vancouver	B.C.	Canada	S
1953	CT	Vancouver	B.C.	Canada	S
1955	CT	Vancouver	B.C.	Canada	O
1956	CT	Vancouver	B.C.	Canada	S
1956	CT	Vancouver	B.C.	Canada	S
1956	CT	Vancouver	B.C.	Canada	S
1960	CT	Vancouver	B.C.	Canada	O
1960	CT	Vancouver	B.C.	Canada	S
1961	CT	Vancouver	B.C.	Canada	S
1962	CT	Vancouver	B.C.	Canada	S
1968	CT	Vancouver	B.C.	Canada	S
1974	CT	Vancouver	B.C.	Canada	O
1978	CT	Vancouver	B.C.	Canada	O
1978	CT	Vancouver	B.C.	Canada	S
1979	CT	Vancouver	B.C.	Canada	S
1980	CT	Vancouver	B.C.	Canada	O
1951	CT	Burnaby	B.C.	Canada	M
1952	CT	Burnaby	B.C.	Canada	S
1954	CT	Burnaby	B.C.	Canada	S
1956	CT	Burnaby	B.C.	Canada	S
1958	CT	Burnaby	B.C.	Canada	S
1959	CT	Burnaby	B.C.	Canada	S
1960	CT	Burnaby	B.C.	Canada	S
1961	CT	Burnaby	B.C.	Canada	S
1962	CT	Burnaby	B.C.	Canada	S
1964	CT	Burnaby	B.C.	Canada	S
1965	CT	Burnaby	B.C.	Canada	S

TABLE 6-16 CONT.

RETIRE-MENT YEAR	SETTLE-MENT TYPE	MUNICIPALITY	PROVINCE	COUNTRY	STRUCTURAL TYPE
1966	CT	Burnaby	B.C.	Canada	S
1972	CT	Burnaby	B.C.	Canada	O
1972	CT	Burnaby	B.C.	Canada	S
1973	CT	Burnaby	B.C.	Canada	S
1973	CT	Burnaby	B.C.	Canada	S
1974	CT	Burnaby	B.C.	Canada	O
1975	CT	Burnaby	B.C.	Canada	S
1982	CT	Burnaby	B.C.	Canada	A
1982	CT	Burnaby	B.C.	Canada	A
1923	CT	New Westminster	B.C.	Canada	S
1928	CT	New Westminster	B.C.	Canada	S
1934	CT	New Westminster	B.C.	Canada	S
1938	CT	New Westminster	B.C.	Canada	S
1943	CT	New Westminster	B.C.	Canada	S
1947	CT	New Westminster	B.C.	Canada	S
1949	CT	New Westminster	B.C.	Canada	S
1953	CT	New Westminster	B.C.	Canada	O
1954	CT	New Westminster	B.C.	Canada	S
1964	CT	New Westminster	B.C.	Canada	O
1964	CT	New Westminster	B.C.	Canada	S
1971	CT	New Westminster	B.C.	Canada	S
1972	CT	New Westminster	B.C.	Canada	A
1973	CT	New Westminster	B.C.	Canada	A
1977	CT	New Westminster	B.C.	Canada	A
1979	CT	New Westminster	B.C.	Canada	O
1981	CT	New Westminster	B.C.	Canada	A
1983	CT	New Westminster	B.C.	Canada	S
1929	IT	Coquitlam	B.C.	Canada	S
1974	SB	N. Vancouver D.M.	B.C.	Canada	S
1957	SB	West Vancouver	B.C.	Canada	S
1966	SB	West Vancouver	B.C.	Canada	A
1973	SB	West Vancouver	B.C.	Canada	A

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SETTLEMENT TYPE	STRUCTURAL TYPE
CT = CiTy	A = Apartment in building with 5 stories or more
IT = Isolated Town	M = Mobile dwelling
CN = CouNtry	O = dwelling in Other multiple-dwelling-unit building
SB = SuBurb	S = Single detached dwelling
NA = Not Applicable	N = Not applicable

Both of the respondents whose last residence was outside of Canada were residing in the nearby state of Washington. Seven others were living outside British Columbia. All of the remaining respondents lived within the Lower Mainland of British Columbia. The immediate past dwelling locations are shown in Map 6-2 according to structural type. (As with all locations in the Vancouver area referring to respondents in this thesis, the population centroid of the relevant 1981 Census Enumeration Area is used as a surrogate for the actual location to protect respondent anonymity.)
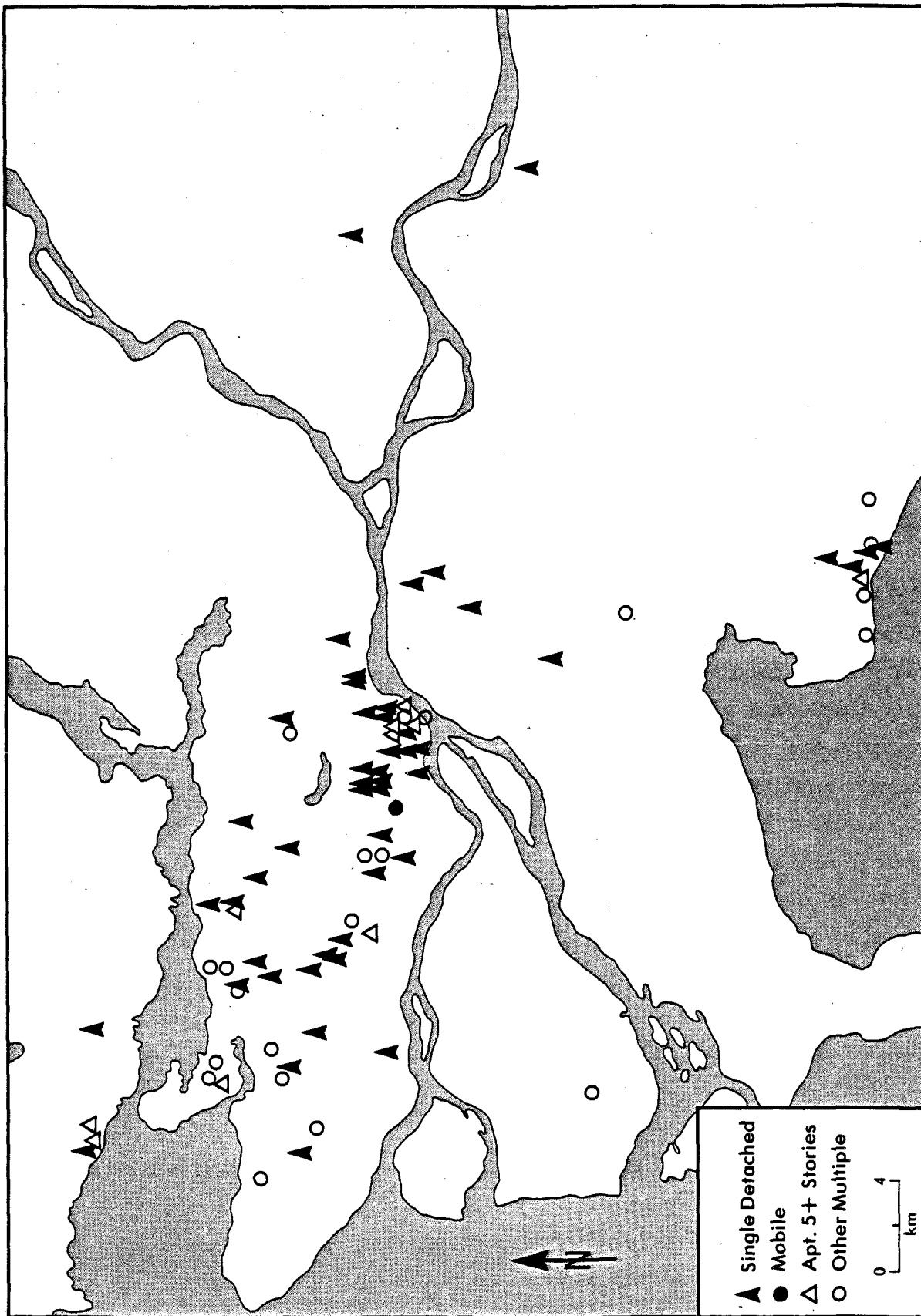
MAP 6-2: LOCATION OF THE IMMEDIATE PAST DWELLING OF RESPONDENTS IN THE VANCOUVER AREA

Single Detached

Mobile

Apt. 5+ Stories

Other Multiple

0   4
km

It is important to keep the temporal component of Table 6-16 and Map 6-2 in mind when interpreting the information contained in them. The locations of the immediate past dwelling represent not only different times in terms of absolute chronology. They also depict respondent locations at the very different stages in life. In order to clarify these differences the respondents will be placed into four residential mobility classifications later in this chapter.

For the present purpose, however, the data from the table and map can be discussed for themselves. The most obvious characteristic in comparison with the current dwelling location map (Map 2-3) is that so many of the respondents (twenty-two) were then living in the city of Vancouver, which was outside of the residential study area for the telephone survey. Nineteen others were also living outside of the survey area. There were three main regions of non-single detached dwellings. One was in the region of the city of Vancouver surrounding the downtown core, which is on the inland part of the prominent peninsula in the northern part of the city. (See also Map 1-1 for a clarification of municipal boundaries.) The second region is in the southern part of Burnaby and in the city of New Westminster. The third, less prominent, region of dwellings in multiple-unit dwellings is in White Rock-South Surrey. Most immediate past dwellings, however, were single detached. The unknown quantity in this map is the location of the last dwelling of those now-retired men within the telephone study area, but who lived within the metropolitan area and outside of the study area at the time of the survey. This information could not be obtained since the telephone study area was defined as only part of the Vancouver metropolitan area. Also missing, and clearly unavailable by any reasonable research method for a study of this scope, are those retired men whose last dwelling was within the study area, but who moved outside of the coverage area of the two Vancouver area Polk directories by the time of the survey.

V. THE AGE OF RESPONDENTS AND CURRENT DWELLING CHARACTERISTICS

The distribution of the age of respondents in 1984 was discussed in Chapter 6. (See Table 6-1.) In order to improve the accuracy of responses, the retired men were asked for their year of birth rather than for their age di-

rectly. Their age was then calculated by default by subtracting the year of birth from 1984.

The following table is in the same shape as Table 3-1, but adds the structural type and tenure of the current dwelling:

TABLE 6-17
1984 AGE DISTRIBUTION OF RESPONDENTS BY FIVE-YEAR INTERVALS AND CURRENT DWELLING STRUCTURAL TYPE AND TENURE

		70AR				
		70OO				
		70SO				
		70SO	75SO			
		69SO	74AR			
		69SO	74OO			
		69SO	74SO	80OR		
		68OR	73AR	80SO		
		68OR	73SO	80SO		
		68SO	73SO	79MO		
		68SO	73SO	79OO		
		68SO	73SO	79OO		
	65SO	67AO	73SO	79SO		
	65SO	67SO	72AO	78OO		
	65SO	67SO	72MO	78SO		
	65SO	67SO	72OO	77MO	85AR	
	63SO	67SO	72OR	77OC	85SO	
	63SO	66OR	72SO	77OR	85SR	
	63SO	66SO	72SO	76SO	84OR	
	63SO	66SO	71OR	76SO	84SO	
60OR	62SO	66SO	71SO	76SO	83SO	
57SO	61SO	66SO	71SO	76SO	82AR	88AO
57SO	61SO	66SO	71SO	76SO	82SO	88SO
57SO	61SO	66SO	71SO	76SO	81AO	87SO
|——| |——| |——| |——| |——| |——| |——|

An inspection indicates that there is a stronger tendency for the younger respondents to live in single detached and owner-occupied dwellings than for the older respondents. The following statistical procedures test these conjectures:

TABLE 6-18
CORRELATIONS OF THE 1984 AGE OF RESPONDENTS
AND THE STRUCTURAL TYPE OR TENURE OF THE CURRENT DWELLING

DWELLING CHARACTERISTIC X	DWELLING CHARACTERISTIC Y	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	+/T
In Multiple-Unit Building	Sing. Detached or Mobile	3.274	22	0.193	63	0.070	1085	25	2.314	66	**0.010**	146.5
Rented/Leased	Owned/Co-op	0.684	14	0.086	71	0.408	696.5	15	1.355	76	0.088	146.5

KEY TO TABLE 6 - 18
(The symbols used are the same as for Tables 6-2, 6-4, 6-5, 6-8, 6-11 and 6-14.)

The Mann-Whitney test shows a correlation which is significant within a 1% error margin for structural type, but it does not show a statistically significant correlation for tenure. The Median Test, which measures only the central tendency of the distribution, does not reach the 5% error margin of significance for either structural type or tenure.

The respondents' year of birth can be directly correlated with the length of the maximum household size period, the years of the beginning and the end of the maximum household size period, the maximum household size itself, the year of the beginning of the 'empty nest' period, the year of retirement and the year of the last change of residence. The Spearman's **rs** correlations are shown in the following table:

TABLE 6-19
SPEARMAN'S RANK CORRELATIONS OF YEAR OF BIRTH WITH
MAXIMUM HOUSEHOLD SIZE PERIOD VARIABLES

X-Y VARIABLES CORRELATED WITH Y ORDERED BY THE RANKS OF X		SPEARMAN'S RANK CORRELATION			
X	Y	r_s	$r_s - z$	Q	N
YEAR OF BIRTH	YEAR OF RETIREMENT	0.692	6.56	2.3E-11	91
YEAR OF BIRTH	FIRST YEAR OF MAXIMUM HOUSEHOLD SIZE PERIOD	0.624	5.82	2.9E-9	88
YEAR OF BIRTH	EMPTY NEST YEAR	0.569	4.55	2.7E-6	65
YEAR OF BIRTH	LAST YEAR OF MAXIMUM HOUSEHOLD SIZE PERIOD	0.318	2.95	0.002	87
YEAR OF BIRTH	MAXIMUM HOUSEHOLD SIZE	0.309	2.91	0.002	91
YEAR OF BIRTH	MAXIMUM HOUSEHOLD SIZE PERIOD	-0.187	-1.73	0.042	91
YEAR OF BIRTH	YEAR OF MOST RECENT RESIDENCE MOVE	0.080	0.76	0.223	91

The one-tailed Q values are given since for the first five variables the positive correlation could have been predicted from the logic of the most usual life course, and since, in the case of **maximum household size**, the decline in average household size in the 20th Century is well known. There is no obviously predictable direction of any possible correlation, however, in the case of the **maximum household size period** and the **year of the most recent residence move**. These last two Q values, therefore, should be interpreted at the two-tailed level, and by this criterion, neither is significantly correlated with the **year of birth** within a 5% error level.

The first five variables on Table 6-19 are positively correlated with the year of birth: in the cases of the **year of retirement, the first year of the maximum household size period** and the **empty nest year**, the correlations are extremely significant, and for **the last year of the maximum household size period** and **maximum household size**, the correlations are very strong. It is important to bear in mind, therefore, that although each of these 'Y' variables may have important impacts on the decisions which people make about housing, it is reasonable to suggest that such decisions are to a large extent themselves determined by the age of those people. Thus it is concluded that

age, or its analogue, the **year of birth**, should be added to the list of indices against which housing variables should be weighed.

VI. HOUSING HISTORY SUMMARY: CATEGORIES OF RESIDENTIAL MOBILITY

The housing history of respondents to the present survey has been characterized by four typical events in the lives of those now-retired men: 1) the period of maximum household size, 2) the empty nest period, 3) the beginning of retirement and 4) the timing of their most recent residential move. The **sequence** of these events is not uniform. If we are to posit that the sequence of the most recent residential move with respect to the other three life-course events can be influenced by the four personal indices and, in turn, can affect the nine activity indices which were summarized at the end of the previous chapter, then the sample needs to be divided into discrete groups based on that sequence.

The respondents have therefore been divided into these four residential mobility groups:

1--**Highly Stable Residents:** The move to the current residence preceded both the beginning of the maximum household size period and the beginning of retirement. (13 respondents)

2--**Adaptively Stable Residents:** The move to the current residence preceded the empty nest and retirement, but not the beginning of the maximum household size period. (26 respondents)

3--**Empty Nest Pre-Retirement Movers:** The move to the current residence occurred when no dependent children were present in the household, but it preceded retirement. (18 respondents)

4--**Post-Retirement Movers:** The move to the current residence followed the beginning of retirement. (29 respondents)

Five respondents did not fit into any of these groups. These five respondents are also included in the statistical analyses of the four residential mobility categories, since they are included among of the logical negation set for each category.

A. A NEW 'DATA-RICH' TIME PROFILE

The housing histories of the members of these four residential mobili-

ty groups are illustrated in Figure 6-1. This is another form of a 'data-rich' graph, which is, to the best of the author's knowledge, introduced for the first time with this thesis. The available typological data from the housing history of one respondent are illustrated on each horizontal line. Each of the character-spaces represents one year of the housing history. Although the last character on the right side of each line represents the interview year, 1984, that character placement of that year on the horizontal scale varies, since the horizontal scale is oriented according to the number of years before and after the year of retirement. Because of the episodic nature of the housing history data elicitation procedure, there are time gaps in some of the history lines, especially in Profiles 3 and 4.

Like the 'data-rich histogram' introduced earlier, the four profiles of Figure 6-1 can be read at a glance, or the data contained therein can be studied in detail. The characters used are part of the APL character set. In some cases the symbols carry an analogy with their original APL meanings. For example, the character, '=', represent years during which the dwelling is 'equal' or 'the same as' the current dwelling. The inverted 'L', which means the 'maximum' of two inputs in APL, is used to designate the **maximum household size period**. The symbols for **single detached** and **mobile or other movable dwellings** suggest the structural type they represent by their shape. The choice of symbols for housing tenure was made strictly for clarity of illustration. Complete details are given at the end of Figure 6-1.

FIGURE 6-1

HOUSING HISTORY PROFILES GROUPED BY RESIDENTIAL MOBILITY CATEGORY

AND RANKED BY YEARS SINCE RETIREMENT

(on the following pages)

PROFILE 1: HIGHLY STABLE RESIDENTS

YEARS BEFORE AND AFTER RETIREMENT

RESPONDENT
NUMBER

193
107
267
025
114
157
120
290
115
122
287
022
078

RESPONDENT
NUMBER

-40   -30   -20   -10   0   +10   +20   +30   +40
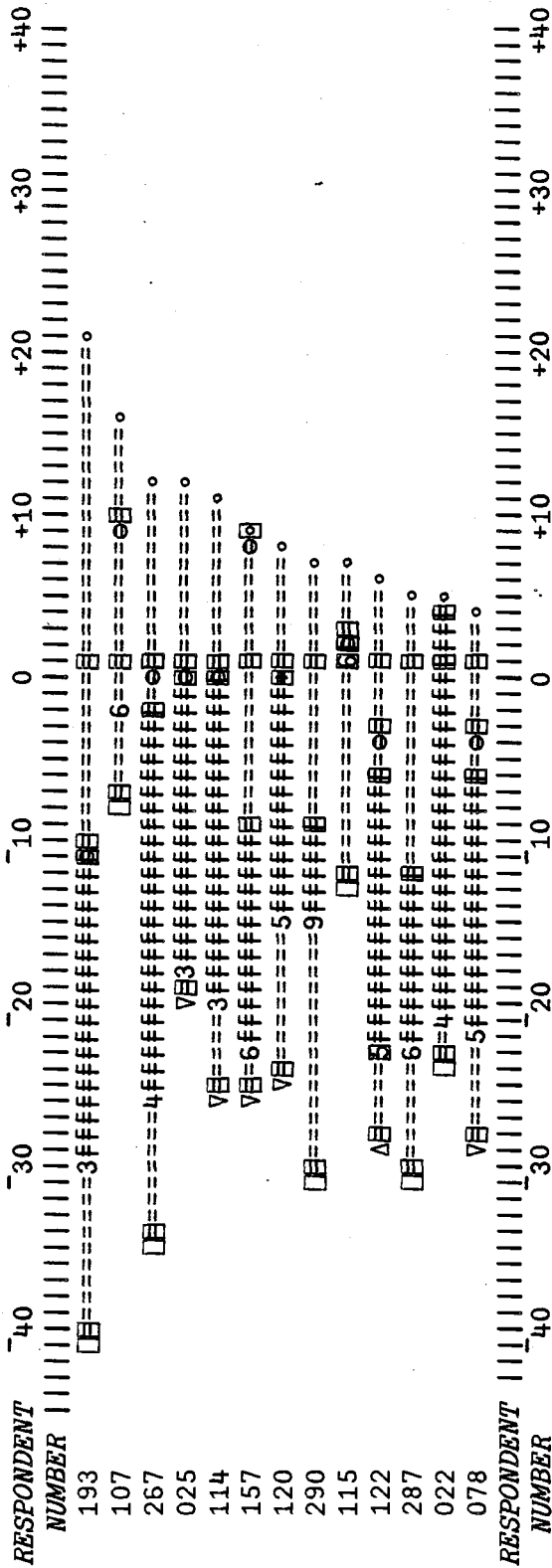
NOTE: THE KEY TO THE HOUSING HISTORY PROFILES FOLLOWS PROFILE 4.

PROFILE 2: ADAPTIVELY STABLE RESIDENTS

RESPONDENT NUMBER

⁻40 ⁻30 ⁻20 ⁻10 0 +10 +20 +30 +40

190
264
044
176
087
054
049
021
293
265
162
085
276
159
164
032
055
166
112
046
135
173
240
232
243
230

RESPONDENT NUMBER

⁻40 ⁻30 ⁻20 ⁻10 0 +10 +20 +30 +40
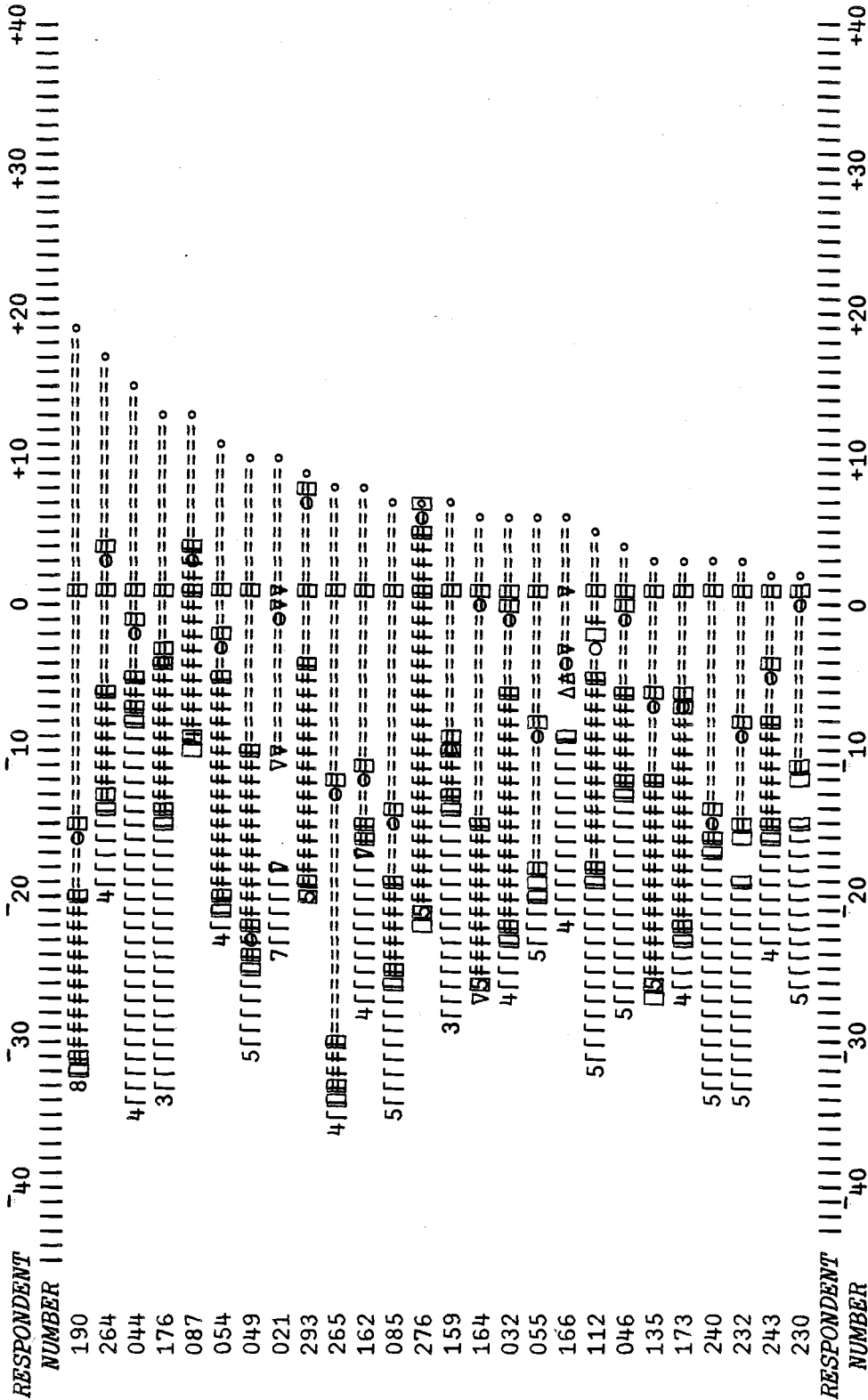
NOTE: THE KEY TO THE HOUSING HISTORY PROFILES FOLLOWS PROFILE 4.

PROFILE 3: EMPTY NEST PRE-RETIREMENT MOVERS

RESPONDENT
NUMBER

209
144
139
083
192
156
258
155
151
256
033
224
171
017
058
147
248
141

RESPONDENT
NUMBER

−40   −30   −20   −10   0   +10   +20   +30   +40

NOTE: THE KEY TO THE HOUSING HISTORY PROFILES FOLLOWS PROFILE 4.

PROFILE 4: POST-RETIREMENT MOVERS

RESPONDENT
NUMBER
246
169
194
063
271
289
236
071
020
255
061
128
030
280
178
291
111
129
211
279
197
073
272*
220
040
201
278
145
019

RESPONDENT
NUMBER

*RESPONDENT 272 BEGAN HIS MAXIMUM HOUSEHOLD SIZE PERIOD TWENTY-FIVE YEARS BEFORE RETIREMENT. SINCE
'11' HAS TWO DIGITS, HIS PROFILE LINE BEGINS ONE SPACE FURTHER TO THE LEFT.
NOTE: THE KEY TO THE HOUSING HISTORY PROFILES IS GIVEN ON THE FOLLOWING PAGE.

K E Y   T O   H O U S I N G   H I S T O R Y   P R O F I L E S

[YEARS OF MAXIMUM HOUSEHOLD SIZE, EXCEPT FOR THE FIRST YEAR, IN WHICH A BOLD INTEGER
INDICATES THE MAXIMUM HOUSEHOLD SIZE

=   YEARS OF RESIDENCE IN PRESENT DWELLING THROUGH 1983, PRECEDED BY DEFAULT IN THE
PREVIOUS YEAR BY THE STRUCTURAL TYPE OF THE IMMEDIATELY PRECEDING DWELLING

~   PRESENT DWELLING IS RENTED (1984)

o   PRESENT DWELLING IS OWNER-OCCUPIED (1984)

o   FIRST YEAR WITH NO CHILDREN LIVING AT HOME ('EMPTY NEST')

□   SINGLE DETACHED DWELLING

△   DWELLING IN AN APARTMENT BUILDING WITH 5 OR MORE STORIES

▽   DWELLING IN ANOTHER FORM OF MULTIPLE-DWELLING STRUCTURE

∩   MOBILE OR OTHER MOVABLE DWELLING

NOTE: IN A NUMBER OF CASES, MORE THAN ONE OF THE ABOVE CATEGORIES OVERLAP IN THE SAME YEAR. IN
ORDER TO DESIGNATE THIS SORT OF SITUATION, THE SYMBOLS ALSO OVERLAP, FORMING COMPOSITE SYMBOLS.
THUS, ₤ IS A YEAR WITHIN THE MAXIMUM HOUSEHOLD SIZE PERIOD IN WHICH THE RESPONDENT WAS LIVING IN
HIS PRESENT DWELLING. ANOTHER EXAMPLE IS ⊙, WHICH INDICATES THAT THE 'EMPTY NEST' PERIOD BEGAN IN
THE PRESENT DWELLING.

B. INTERPRETATION

As an example of how Figure 6-1 can be read, the dwelling history of
respondent number 151 can be traced. His household had four members during its
maximum period. That period began 33 years before retirement and ended
fourteen years before retirement. He was living in a single detached dwelling.
The 'empty nest' period of that household also began fourteen years before
retirement. He was still living in a single detached dwelling the year after
his 'empty nest' period began. The following year, twelve years before
retirement, he moved to his present dwelling, which is also single detached.
One year after retirement he was still living, of course, in his current
dwelling with the same structural type. He was interviewed six years after the
beginning of his retirement, at which time he owned his dwelling.

The data in Figure 6-1 summarize much of the material which has al-
ready been presented in this chapter, but some comments are in order. The
highly stable residents in Profile 1 were all living in their own single de-
tached residences at the time of the survey. The **maximum household size peri-
ods** tended to be shorter for those (**e.g.** respondents 107, 157, 290, 115 and
287) with larger **maximum household sizes** than for those with smaller **maximum
household sizes**.

With two exceptions (respondents 021 and 166) the numerous **adaptively
stable residents** on Profile 2 are also now living in single detached dwell-
ings. All are owner-occupiers. Only two of these men (respondents 190 and 021)
had **maximum household sizes** greater than five.

Non-single detached and rented dwellings are more evident on Profile 3
among the **empty nest pre-retirement movers**, but most are also owner-occupied
and single detached.

The really marked difference in the patterns appears on Profile 4 with
the **post-retirement movers**. Most of the occupants of mobile homes and rented
dwellings in multiple-unit buildings appear on that profile. Nevertheless,
over half of even this group own their current dwelling.

Profiles such as these can be grouped, ordered and scaled in numerous
ways. By visual experimentation, researchers may discover new relationships,
commonalities and contrasts. The proposed grouping of the respondents into the
four groups shown on Figure 6-1 came about after just such a process of visual
experimentation with the aid of a computer.

C. CORRELATIONS WITH PERSONAL AND ACTIVITY INDICES

Since the respondents have been divided into these four classes according to their residential mobility status, the correlations between the classes and the thirteen personal and activity indices which were summarized at the end of Chapter 5 can be calculated. These data appear in Table 6-20, which is printed on the following four pages. The Median and Mann-Whitney Test are again used. The correlations are ranked from the lowest to the highest Q values for the Median Test. Those variables which correlate with an error level of less than 5% for either test are printed in **bold** characters.

TABLE 6-20
CORRELATION OF RESIDENTIAL MOBILITY CATEGORIES
WITH PERSONAL AND ACTIVITY INDICES

PERSONAL AND ACTIVITY INDICES	DWELLING MOBILITY CATEGORIES	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	Z	N_y	Q	$+/T$
1 Leisure	Adaptively Stable	5.121	26	0.233	63	**0.024**	1010.0	26	1.455	65	0.073	499
2 Simultaneity	Empty Nest	5.067	16	0.250	60	**0.024**	664.5	16	2.085	62	**0.019**	14
3 Simultaneity	Post-Retirement Movers	5.050	23	0.250	53	0.025	917.0	24	2.913	54	**0.002**	14
4 Leisure	Post-Retirement Movers	4.602	27	0.222	62	**0.032**	1002.0	29	0.881	62	0.189	499
5 Outdoor	Empty Nest	3.554	17	0.195	73	0.059	766	18	1.091	73	0.138	585.5
6 Simultaneity	Highly Stable	2.657	11	0.184	65	0.103	520.0	11	2.175	67	**0.015**	14
7 Pedestrian-Bicycle Travel Time	Adaptively Stable	2.533	8	0.250	30	0.111	166.5	8	1.480	31	0.069	9.5
8 Career	Empty Nest	2.500	18	0.164	72	0.114	819.5	18	1.733	72	**0.042**	216.5
9 Income	Highly Stable	2.367	12	0.170	68	0.124	595.0	13	1.359	74	0.087	168
10 Simultaneity	Adaptively Stable	2.303	22	0.171	54	0.129	704.5	23	0.789	55	0.215	14
11 Outdoor	Highly Stable	2.248	13	0.156	77	0.134	553	13	0.524	78	0.300	585.5
12 Muscular Motility	Adaptively Stable	1.947	26	0.146	64	0.163	987.0	26	1.248	65	0.106	25
13 Motor Vehicle Travel Time	Highly Stable	1.767	10[7]	0.171	49	0.184	318.5	11	0.817	50	0.207	47.5
14 Pedestrian-Bicycle Travel Time	Post-Retirement Movers	1.727	16	0.209	22	0.189	196.5	16	0.357	23	0.360	9.5
15 Age	Post-Retirement Movers	1.700	26	0.140	59	0.192	1155	29	2.182	62	**0.015**	146.5
16 Career	Adaptively Stable	1.385	25	0.123	65	0.239	922.5	25	0.993	65	0.160	216.5
17 Socio-Economic Status	Empty Nest	1.351	16	0.125	69	0.245	741.0	17	1.563	70	0.059	4.5
18 Career	Post-Retirement Movers	1.272	29	0.118	61	0.259	1034.5	29	1.297	61	0.097	216.5

TABLE 6-20, CONT.

PERSONAL AND ACTIVITY INDICES	DWELLING MOBILITY CATEGORIES	MEDIAN TEST					MANN-WHITNEY TEST					
		x^2	N_x	C_c	N_y	Q	U	N_x	Z	N_y	Q	+/T
Socio-Economic 19 Status	Post-Retirement Movers	1.190	27	0.118	58	0.275	846.0	28	0.182	59	0.428	4.5
20 Muscular Motility	Post-Retirement Movers	0.829	28	0.096	62	0.362	946.5	29	0.405	62	0.343	25
21 Career	Highly Stable	0.809	13	0.094	77	0.368	577.5	13	0.885	77	0.188	216.5
22 Leisure	Highly Stable	0.734	13	0.090	76	0.392	513.0	13	0.068	78	0.473	499
Pedestrian- 23 Bicycle Travel Time	Empty Nest	0.633	8[7]	0.128	30	0.426	127.5	8	0.122	31	0.452	9.5
24 Income	Empty Nest	0.616	16	0.087	64	0.433	709.0	17	1.222	70	0.111	168
25 Age	Empty Nest	0.611	18	0.085	67	0.434	729	18	0.718	73	0.236	146.5
26 Income	Post-Retirement Movers	0.498	27	0.079	53	0.481	946.5	28	1.096	59	0.136	168
27 Away From Dwelling	Highly Stable	0.439	12	0.070	77	0.508	525.5	13	0.210	78	0.417	122
28 Age	Adaptively Stable	0.390	24	0.068	61	0.532	950.5	26	0.928	65	0.177	146.5
29 Leisure	Empty Nest	0.338	18	0.061	71	0.561	713.0	18	0.560	73	0.288	499
Socio-Economic 30 Status	Adaptively Stable	0.302	24	0.060	61	0.582	799.5	24	0.413	63	0.340	4.5
31 Away From Dwelling	Adaptively Stable	0.286	26	0.057	63	0.593	864.5	26	0.171	65	0.432	122
Pedestrian- 32 Bicycle Travel Time	Highly Stable	0.230	5[7]	0.078	33	0.631	118.5	6	0.760	33	0.224	9.5
33 Social Intercourse	Empty Nest	0.225	18	0.050	71	0.635	709.0	18	0.518	73	0.302	6.5
34 Outdoor	Adaptively Stable	0.216	26	0.049	64	0.642	851.5	26	0.057	65	0.477	585.5
Motor Vehicle 35 Travel Time	Empty Nest	0.157	11	0.052	48	0.692	312.0	11	0.695	50	0.244	47.5
36 Privatism	Post-Retirement Movers	0.148	28	0.041	61	0.700	911.5	29	0.106	62	0.458	10.5

TABLE 6-20, CONT.

PERSONAL AND ACTIVITY INDICES	DWELLING MOBILITY CATEGORIES	MEDIAN TEST					MANN-WHITNEY TEST					
		x^2	N_x	C_c	N_y	Q	U	N_x	Z	N_y	Q	$+/T$
37 Away From Dwelling	Post-Retirement Movers	0.148	28	0.041	61	0.700	929.5	29	0.260	62	0.397	122
38 Income	Adaptively Stable	0.132	21	0.041	59	0.717	789.5	24	0.319	63	0.375	168
39 Socio-Economic Status	Highly Stable	0.121	13	0.038	72	0.728	577.5	13	0.149	74	0.125	4.5
40 Privatism	Highly Stable	0.118	13	0.036	76	0.731	545.0	13	0.431	78	0.333	10.5
41 Social Intercourse	Adaptively Stable	0.091	25	0.032	64	0.763	948.0	26	0.905	65	0.183	6.5
42 Muscular Motility	Highly Stable	0.090	13	0.032	77	0.764	508.0	13	0.011	78	0.495	25
43 Social Intercourse	Highly Stable	0.066	13	0.027	76	0.798	529.0	13	0.250	78	0.401	6.5
44 Outdoor	Post-Retirement Movers	0.051	29	0.024	61	0.822	912.5	29	0.116	62	0.454	585.5
45 Privatism	Empty Nest	0.048	17	0.023	72	0.827	690.0	18	0.329	73	0.371	10.5
46 Motor Vehicle Travel Time	Post-Retirement Movers	0.042	17	0.027	42	0.838	400.0	18	0.206	43	0.418	47.5
47 Social Intercourse	Post-Retirement Movers	0.023	29	0.016	60	0.879	970.5	29	0.609	62	0.271	6.5
48 Motor Vehicle Travel Time	Adaptively Stable	$7.4E^-3$	18	0.011	41	0.931	439.0	18	0.823	43	0.205	47.5
49 Age	Highly Stable	$5.0E^-3$	13	$7.7E^-3$	72	0.943	592	13	0.965	78	0.167	146.5
49 Privatism	Adaptively Stable	$4.6E^-3$	26	$7.2E^-3$	63	0.946	884.5	26	0.347	65	0.364	10.5
50 Away From Dwelling	Empty Nest	$2.8E^-3$	18	$5.7E^-3$	71	0.957	660.0	18	0.030	73	0.488	122
51 Muscular Motility	Empty Nest	0.000	18	0.000	72	indeterminate	663.5	18	0.065	73	0.474	25

(THE KEY TO TABLE 6-20 APPEARS ON THE FOLLOWING PAGE.)

KEY TO TABLE 6-20

N_x = The number of respondents for whom a value has been calculated for a given index who fit into the given **dwelling mobility category.**
N_y = The number of respondents for whom a value has been calculated for a given index who do not fit into the given **dwelling mobility category.**
NOTE: The number of respondents included in the **Median Test** is often less and never more than those used for the **Mann-Whitney Test**, since index values which equal the median for respondents in all **dwelling mobility categories** are not used in the **Median Test** calculations.
X^2 = The chi-squared evaluation of the 2 by 2 matrix of index values which are above and below, respectively, the median index values for all respondents for whom a given index has been calculated, cross-classified by those who fit into the given **dwelling mobility category** and those who do not.
C_c = The **contingency coefficient**, which measures the **strength** of a correlation, rather than its stochastic **significance.**
$Q = 1 - P$, or the one-tailed probability that a directional H_o is in fact true.
$+/T$ = A tie correction factor, which is the summation of the T values of $(t^3-t)/12$ where t is the number of ties in each tied group.
U = The lesser of the two Mann-Whitney U statistic values.
Z = One standard deviation, which can be transformed into a P or Q value.

1. Leisure

According to the Median Test, but not the Mann-Whitney Test, **leisure** is significantly correlated with both the **adaptively stable** and the **post-retirement mover** groups.

The **adaptively stable** men spent significantly **less**[8] time in activities which they labelled as **leisure** than those outside their group. The most plausible explanation is that the **adaptively stable** group spent more time on household maintenance activities and other non-leisure activities because of their responsibilities as owners of single detached dwellings. However, there is no corresponding correlation with less leisure in the case of the smaller **highly stable** group.

The **post-retirement mover** group spent significantly **more** time in **leisure** activity than the pre-retirement movers. This group, which is commonly living in rented and multiple dwelling-unit buildings, has considerably fewer demands on their time and energy for household maintenance, which likely explains its significantly higher amount of time spent on self-coded **leisure** activities. Indeed, this question of household maintenance was a topic of comment by respondents, suggesting that their individual experience is consistent with the broader cross-sectional conclusion here.

2. Simultaneity

The **simultaneity index** correlates significantly with three of the four

residential mobility categories: **empty nest pre-retirement movers, post-retirement movers** and **highly stable residents.**

The **post-retirement movers** spent significantly **more** time with simultaneous activity than the pre-retirement movers. The relationship is significant for the Median Test and it has the highest correlation in Table 6-20 for the Mann-Whitney Test. Since Table 5-14 and Figure 5-1 record a significantly negative correlation between **outdoor** and **simultaneous** activities, one might suspect that these people spend a lot of time indoors, but the same table shows (pair #44) an exceedingly poor correlation between the **indoor-outdoor index** and **post-retirement movers.** There does not appear, therefore, to be an obvious explanation for this high correlation.

Both **empty nest pre-retirement movers** and **highly stable residents** spent significantly little time in **simultaneous** activities. The correlation was significant according to both tests for the **empty nest** group, but only significant according to the Mann-Whitney Test for the **highly stable** respondents. In the case of the **empty nest** men, their relatively high correlation (Q = 0.059) with **more outdoor** activity (pair #5 on Table 6-20) does provide a fairly plausible explanation. The correlation in the case of the **highly stable residents,** however, is a relationship which requires further study beyond what is possible here.

3. Personal Indices

There are also two personal indices which correlate significantly with the categories of residential mobility: **age** and **career.**

The **post-retirement movers** tend to be significantly older than the other respondents, according to the Mann-Whitney Test. The **post-retirement mover** group, unique among the four residential mobility categories, is open-ended. Any of the men interviewed in 1984 had the potential to join that group by moving one more time. The fact that there are a lot of older people in that category is first of all a cohort effect: we are simply observing more people who were farther along in their life course who had more time to make a post-retirement move. Since one of the characteristics of the **post-retirement movers,** however, is to have a stronger tendency to live in rental dwellings and in multiple unit buildings, we are also doubtless observing some adjustment

behaviour to the demands of the aging process as well.

The **empty nest pre-retirement movers** scored significantly lower in the index of **career** attainments. (This index includes, as detailed in Chapter Three, the number of years of schooling, the highest formal educational attainment and the last occupation before retirement.) The **empty nest** group included men who had never had dependent children living with them as well as those who moved before retirement but after all of their dependent children had left their natal households. In some cases, the moves were adjustments to shorten commuting distance since there were no children who needed 'growing space'.

VII. A REVIEW OF THE DWELLING HISTORIES

Four critical temporal milestones were used to sample the housing histories of the survey respondents: the beginning and the end of the **maximum household size period**, the onset of the **'empty nest'** period, the beginning of **retirement**, and the time of the **most recent dwelling move** of each respondent. These variables were supplemented by the **year of birth** of each respondent and the sample was divided into four groups according to the **sequence** of their **most recent move** with respect to the basic temporal milestones.

Certain basic housing information such as **structural type** was collected for times related to the milestones. **Locational** aspects were also examined, such as **settlement type, municipality** within British Columbia, **province/territory** within Canada, and both **commuting distance** and **commuting mode**.

The principal findings of this chapter are:

1. Both single detached and owner-occupied dwellings are more common among those whose first year of maximum household size period occurred relatively recently.

2. Those respondents who have been retired the longest were more likely to be living in multiple and rented dwellings than the more recently retired men.

3. Most of the recent moves of these respondents have been to dwellings either not owner-occupied or not single detached or both, and most of the

men who have not moved in recent years are living in their own single detached dwellings.

4. On the other hand, there is no significant correlation between the timing of the most recent move and any of the identified personal or activity indices.

5. Most of the mobility of these respondents, measured by their most recent move, has been intra-metropolitan: only nine moved to their current dwelling from outside of the Lower Mainland of British Columbia.

6. Younger respondents are more likely to be now living in single detached or mobile dwellings, but this survey did not demonstrate conclusively a significant trend for these younger men to be owning rather than renting their dwellings in contrast to older retired men.

7. In addition, older respondents are more likely to a) have retired earlier, b) have begun and ended their maximum household size period earlier, c) have had larger maximum household sizes, and d) have begun their 'empty nest' period earlier than younger retired men.

8. The following statistically-significant correlations were found to exist for men in the four identified **dwelling mobility categories:**

a) **Adaptively stable** men spent less time in activities which they identified as 'leisure', while **post-retirement movers** spent more time labelled 'leisure'.

b) **Post-retirement movers** spent more time engaged in simultaneous activity than pre-retirement movers, and both **empty nest pre-retirement movers** and **highly stable residents** spent significantly less time with more than one activity at a time.

c) **Post-retirement movers** are consistently older than pre-retirement movers.

d) Finally, the **empty-nest pre-retirement movers** scored significantly lower in the index of **career** attainments than retired men in other **dwelling mobility categories.**

The housing histories lead, of course, to the current dwelling, and this chapter has consistently pointed its analysis toward the various characteristics of the current dwelling. In order to understand better the relationships among the various measures of personal characteristics and activity pat-

terns of this sample of retired men, the current dwelling needs to be examined in more detail. This task is accomplished in Chapter Seven.

[1]The symbol, '-', indicates that there is no information available—in this case, on the maximum household size for one respondent.

[2]The commuting distance is expressed to the nearest 100 metres. However, this rendering in most cases exhibits more accuracy than the data warrant. Most of the data are metric conversions from respondent estimates which were expressed in English units. In a few cases, the one-way distance to the actual work place was measured from the respondent's dwelling from which he commuted. The 100-metre resolution is retained in order to accommodate very short distances.

[3]Occasionally place names have changed or municipality boundaries have changed. In this case, the respondent mentioned 'Milner, B.C.', which is now part of Langley. For consistency and simplicity, contemporary place names are used in this study. Parts of Langley qualify as 'suburban', but in this particular case, the respondent made it clear that he was living in the 'country'.

[4]The classification of White Rock as a settlement type is not straightforward. Since it is within the outer limits of commuting range to Vancouver, it qualifies as a suburb. White Rock is so dominated by retired people, however, that it actually has little in common with commuter suburbs, such as the nearby areas in South Surrey. It is also a border town which holds little drawing power for residents on the United States side; the border itself is a major impediment in the development of White Rock as a regional centre, since its catchment area is thereby truncated. Although White Rock City was not mentioned in their study, Simmons and Turbeville's recent study (1985) gives some perspective on the character of the other side of the border.

[5]This respondent was a travelling salesman whose work consisted of a two-week circuit of British Columbia.

[6]This respondent was travelling in Europe for the first fifteen months after retirement, so he had no identifiable residence twelve months after retirement.

[7]The contingency tables designated contain at least one expected frequency which is less than 5.0, and therefore the chi-squared evaluations are generally regarded as not valid.

[8]Neither the Median Test nor the Mann-Whitney Test shows the **direction** of the correlation directly. The simplest way to establish whether the correlation is weighted in one direction or the other is to examine the direction of the differences between the observed and expected frequencies in the 2 x 2 chi squared table from the Median Test.

CHAPTER SEVEN
THE DOMESTIC NODE:
MOVING INTO AND LIVING IN THE CURRENT DWELLING

I. CURRENT DWELLING

This chapter is devoted to the current dwelling situations of respondents. It begins with a brief introduction to their current dwellings.

A. TENURE AND STRUCTURAL TYPE

The most basic variables related to respondents' current dwellings are **tenure** and **structural type.** There were three types of tenure reported by respondents: owner-occupied, rented and cooperative. Cooperative tenure was reported by only one respondent, so for the purposes of statistical tabulation, that case is classed as owner-occupied, but with accompanying notations. Four classes of structural type were differentiated: single detached dwellings, mobile or other movable dwellings, apartments in buildings with five stories or more, and dwellings in other multiple-dwelling buildings. This classification system is consistent with Canada Census standards. These classes are abbreviated, in turn, **single, mobile, apt5+** and **other.** The spatial distribution of these dwellings by tenure and structural type are shown in Map 5-2. These two variables are cross-tabulated on the following table.

TABLE 7-1
CURRENT DWELLINGS OF RESPONDENTS BY STRUCTURAL TYPE AND TENURE

STRUCTURAL TYPE	TENURE	
	OWNER-OCCUPIED	RENTED
Single	62	1
Mobile	3	0
Apt5+	4	5
Other	7[1]	9

The marked tendency for single detached dwellings to be owner-occupied is obvious. Tenure is not so easily predictable with the other structural

types. The Goodman-Kruskal **tau** statistic (**GKtau**) for the table is **0.26**. If SINGLE and MOBILE (which is also a kind of single-detached dwelling) are combined, and likewise APT5+ and OTHER, to designate all multiple dwelling structures, a valid chi-square (X^2) statistic can be calculated. In this case, $X^2 =$ **35.2**, df = 1, C_c = 0.53, **GKtau** = 0.43 and Q = 1.4E⁻9.

B. ROOMS OR ACTIVITY AREAS

Respondents were asked to take the interviewer on an imaginary tour of their dwellings. (See Appendix E.) As the room-by-room tour progressed, the interviewer asked clarifying questions in order to define the functional structure of each room or 'activity area'. An 'activity area' is like a room, with its own clearly-defined functional identity, but not completely separated by walls from other functional areas. The 'dining area' of a combination living room/dining room would be one example. Another typical case would be the laundry area in an open basement. Closets and halls were not recorded unless they served a special purpose. A large 'closet' functioned as a tiny bedroom for one respondent. In another case, a 'hall' served as a special display area for a respondent's collecting hobby. Bathrooms were never recorded, but could have been if they had been converted to some non-standard use, such as a photographic darkroom.

These rooms or activity areas were coded in two ways. (See Appendix E.) First, they were simply labelled by a standardized set of names. Second, up to two variables were recorded for each room or activity area which identified its most important uses or functions. The room or activity area names and the total number which occurred in the sample are shown in Table 7-2. Table 7-3, in turn, shows the functional structure of these rooms or activity areas. The data from both tables will be discussed together.

TABLE 7-2
THE NUMBER OF ROOMS OR ACTIVITY AREAS IN RESPONDENT DWELLINGS BY TYPE

IDENTITY OF ROOM OR ACTIVITY AREA	NUMBER IN SAMPLE
bedroom	191
kitchen	88
living room or front room	85
dining room or dining area attached to the living room	63
utility or laundry room or area	38
den	29
rumpus or recreation room	29
shop or workbench area	23
patio, sundeck, balcony or gazebo	21
family room, music room or library	13
dinette or eating nook attached to the kitchen	12
carport	9[2]
sewing room	9
other rooms or areas	8
garage	5[2]
hobby room	3
television room	3
ancillary building detached from dwelling	2
greenhouse or solarium	1

TABLE 7-3
FUNCTIONAL STRUCTURE OF RESPONDENT DWELLINGS

FUNCTION OR USE OF ROOM OR ACTIVITY AREA	NUMBER IN SAMPLE
functions which are normal to the room or area, such as sleeping in a bedroom or preparing food in the kitchen	201
watching television	112
routine eating	100
listening to the radio or other audio media	54
providing guests with sleeping accommodation[3]	52
relaxing or reading	44
dining with guests or eating other special meals	41
entertaining friends or relatives who are visting	34
storage	31
talking on the telephone	31
idle or seldom used[3]	30
hobby, participatory musical or artistic activity	23
bookkeeping or other writing activity	21
household maintenance activity	19
enjoying the fireplace	17
sleeping, including daytime napping	13
other functions	9
exercising	3

Certain aspects of the rooms and activity places of respondents' dwellings have already been discussed in Chapter Five. (See especially Tables 5-1 and 5-4.) The **dwelling-away from dwelling index** (DWYINDEX) was introduced as a measure which specifically focuses on patterns of respondents' activities along their 'at homeness' dimension.

Carrying out a survey of a dwelling by this sort of 'imaginary tour' method on the telephone is far from ideal. It would clearly be better for the researcher to actually visit the dwelling and be guided through the dwelling in order to make sure that no rooms or activity areas were missed and to exercise some judgement about actual functional structure of these places based on visual evidence. For example, the obvious undercounting of carports and garages noted on Table 7-2 could have been avoided, and more 'idle or seldom

used' places also could have been identified. There was a handful of respon-
dents who were uncooperative with this part of the survey. One respondent
expressed his fear of giving information to a potential burglar! That is the
reason that only eighty-eight kitchens are reported, which is clearly three
too few. (No rooming houses or hotel-style dwellings were identified by this
survey.)

Bedrooms pose a special problem to a survey of this kind. For the **1974
Survey of Housing Units**, a room was called a 'bedroom' only if its principal
function was for sleeping. Since the sexual behaviour of the respondents was
beyond the scope of this study, any inquiry about 'who-was-sleeping-where' was
avoided during the telephone interview. Bedrooms also have changeable
identities over the life course of a neolocal household. A child's bedroom
could become a 'guest room', a 'sewing room', a 'den', etc., or could be idle
after the child has moved out.

Nevertheless, some useful information has been obtained from the 'im-
aginary tour'. With exceptions already noted, a simple count of the number of
rooms in the dwelling, for example, is probably reasonably accurate. Some room
or activity functions are also of interest. The fact that places for 'watching
television' actually exceeded the number of respondents is notable, and con-
sistent with the extremely important role which that medium plays in the lives
of these men, as recounted in detail in Chapter Four. The variety of places
used for different kinds of eating would be worthy of a separate study.

For purposes of statistical testing later in this chapter, only the
number of rooms (meaning rooms plus activity areas) and its derivative, the
number of rooms per person, will be used.

C. HOUSING SATISFACTION

The initial draft of the survey instrument which was used for the pre-
test and also for the main survey asked the respondents to the telephone sur-
vey to give two advantages and two disadvantages of both the location of their
dwelling and of the dwelling itself, without regard to its location. It became
apparent once the main survey was underway that respondents seemed to feel too
constrained by the limitation of just two advantages and two disadvantages in
each case. Therefore most of the respondents were in fact asked, "What are
some advantages...?" and "What are **some** disadvantages...?". All of their rea-

sons were recorded, and after the fact it appeared that a total of four advan-
tages and four disadvantages for the dwelling and its location were sufficient
to account for all of the responses.

1. Housing Satisfaction Score

It is impossible for an investigator to weigh one person's list of
advantages and disadvantages against another's and be able to state categor-
ically that the first person's advantages count for more or less than the sec-
ond person's. It is possible, however, to weigh one respondent's advantages
against his own disadvantages merely by counting them. Thus, if a respondent
gave the three advantages of his location and two disadvantages, then the two
disadvantages can be subtracted from his three advantages and, on balance, it
might be said that this respondent is moderately favourably disposed toward
his location. If, however, he gave four advantages and then said that he could
think of no disadvantages, then he has made a very favourable statement about
his location. Therefore a **location advantage score** and a **dwelling advantage
score** were each calculated based on a score of +1 for each 'advantage' men-
tioned and ⁻1 for each 'disadvantage', and ⁻4 for a 'no advantages' response
and +4 for 'no disadvantages'. For each respondent, the **location advantage
score** was added to the **dwelling advantage score** to produce a more general
housing satisfaction score. This final score is reported here and used later
for statistical testing. The theoretical range of this score would be from ⁻16
to +16. The actual distribution of the **housing satisfaction score** for the
ninety-one respondents is shown by a 'data-rich histogram' on Table 7-4:

TABLE 7-4
DISTRIBUTION OF THE HOUSING SATISFACTION SCORES

```
                              7
                              7
                              7
                              7
                     6        7        8
                     6        7        8
                     6        7        8
                     6        7        8                  11
                     6        7        8                  11
                     6        7        8                  11
                     6        7        8                  11
          1          5        6        7        8         11              13
          1          5        6        7        8         9               11              13
          1          5        6        7        8         9               11      12      13      14
   0      1    2     3    4   5        6        7        8   9     10      11      12      13      14
   0      1    2     3    4   5        6        7        8   9     10      11      12      13      14
   0      1    2     3    4   5        6        7        8   9     10      11      12      13      14
   |——|——|——|——|——|——|——|——|——|——|——|——|——|——|——|
```

The distribution is not unimodal, but it is not very skewed: the median score is 7 and the mean is 7.2. Only three respondents were, by this measure, neutral about their housing. Most were to one degree or another satisfied with their housing. None were on balance dissatisfied with their housing.

2. Location Advantages and Disadvantages

The actual answers to these questions are worth examining. They appear on Table 7-5:

TABLE 7-5
LOCATION ADVANTAGES AND DISADVANTAGES IDENTIFIED BY RESPONDENTS

ADVANTAGES	NUMBER OF MENTIONS	SCORE	DISADVANTAGES	NUMBER OF MENTIONS	SCORE
good access to shopping	54	+1	no disadvantages	53	+4
quiet street	39	+1	noisy street	16	⁻1
pleasant neighbours	22	+1	other disadvantage	15	⁻1
good access to recreational facilities or amenities	22	+1	unpleasant neighbours	5	⁻1
good access to the transit system	22	+1	difficult access to shopping	5	⁻1
good view	20	+1	difficult access to transit	4	⁻1
other advantage	19	+1	difficult access to respondent's house of worship	1	⁻1
beautiful or otherwise positive neighbourhood	10	+1	difficult access to recreational facilities or amenities	1	⁻1
good climate	7	+1	difficult access to medical facilities	1	⁻1
good access to medical facilities	6	+1	difficult access to family	1	⁻1
good access to respondent's house of worship	3	+1	unfavourable climate	1	⁻1
good access to family	2	+1			
unspecified general advantage	1	+1			

Table 7-5 is an even more dramatic demonstration of how well-located these retired men judge their dwellings to be. Advantages far outweigh disadvantages. It is well to note that quiet or noisy streets are important to these men, as are pleasant neighbours and access to shopping.

3. Advantages and Disadvantages of the Dwelling Itself

A similar list of advantages and disadvantages of the dwelling itself without regard to its location appears on the following table:

TABLE 7–6
ADVANTAGES AND DISADVANTAGES OF DWELLINGS WITHOUT REGARD TO
LOCATION IDENTIFIED BY RESPONDENTS

A D V A N T A G E S	NUMBER OF MENTIONS	SCORE	D I S A D V A N T A G E S	NUMBER OF MENTIONS	SCORE
convenient or comfortable interior design	27	+1	no disadvantages	43	+4
low maintenance problems for the respondent	18	+1	other disadvantage	18	⁻1
good garden or yard	17	+1	maintenance problems	12	⁻1
well-heated and/or well-insulated	11	+1	interior design problems other than stairs	12	⁻1
appropriately large size of dwelling and/or garden	11	+1	stairs difficult to manage	7	⁻1
other advantage	9	+1	security or safety problems	4	⁻1
unspecified general advantage	9	+1	lack of adequate privacy	3	⁻1
appropriately small size of dwelling or garden	8	+1	expensive	3	⁻1
inexpensive	8	+1	lack of or inadequate garden	1	⁻1
good security and/or safety	7	+1			
good privacy	7	+1			
dwelling designed and/or built by the respondent	7	+1			
plenty of room	6	+1			
bright or well-illuminated interior	5	+1			
no advantages	3	-4			
good household facilities	3	+1			
aesthetically pleasing aspects	3	+1			
good drainage	1	+1			

Both interior design and low maintenance are valued highly by this sample of retired men, both on the positive and negative side. Similar to the question of location, the overwhelming view is that the current dwelling is advantageous.

4. Push-Pull Migration Motives

In addition to the dwelling/location advantages/disadvantages questions, a question was asked to try to ascertain the relative weight of 'push' versus 'pull' (Lee 1966) aspects of the decision to change the last residence. A disadvantage of this question, unlike the preceding four (See Appendix E.) is that it asked respondents to ascribe motives to a move which took place at very widely different times in the lives of the various respondents. (See Table 6-13 and Figure 6-1.) Similarly to those other four questions, the limita-

tion of two reasons was eliminated early in the survey. Coding actually allowed for as many as four reasons: two ascribed to the 'push' motives to move **away** from the former dwelling and two to **pull** motives for moving **to** the current dwelling. A summary of responses among these retired men is included in Table 7-7. The numbers in the table indicate the number of **mentions** rather than the number of **respondents**. This includes the numbers under the **RESIDENTIAL MOBILITY STATUS** heading. Thus the total number of mentions does not add up to the total number of respondents in each category. Since all respondents did not fit into the four identified residential mobility status categories, the number of mentions corresponding to these respondents are listed in the **NULL STATUS** category.

TABLE 7-7
'PUSH' AND 'PULL' MIGRATION MOTIVES FOR THE MOST RECENT MOVE AND RESIDENTIAL MOBILITY STATUS

'PUSH' MOTIVES	NUMBER OF MENTIONS	RESIDENTIAL MOBILITY STATUS				
		HIGHLY STABLE	ADAPTIVELY STABLE	EMPTY NEST	POST-RETIREMENT MOVERS	NULL STATUS
not enough interior space	16	3	6	4	3	
dissatisfaction with tenure	15	2	8	3	1	1
too expensive	11	3	1	2	4	1
too much effort needed for maintenance	11		1	1	8	1
dissatisfaction with general living conditions	10	1	2	1	5	1
other reason	7			1	5	1
dissatisfaction with structural type	5	2		1	2	
job transfer	5		3	1	1	
stairs difficult to manage for respondent or other household member	4				4	
forced out by eminent domain, major land-use change or eviction by landlord	4		1	2	1	
security or safety problems	4		2		2	
neighbourhood and/or privacy problems	3			1	2	
dwelling too old	3		2	1		
'PULL' MOTIVES						
good investment opportunity	13	2	8	1	2	
good environment or situation for raising children or for caring for another dependent	12	4	6	2		
closer to job	10	1	5	2	2	
good climate	7			1	4	2
other reason	7	2	1		4	
good view	6	1	2	2	1	
appropriately small size of dwelling and/or garden	5		1	1	3	
appropriately large size of dwelling and/or garden	5	1	2	1	1	
dwelling owned by a relative	4			2	1	1
good access to recreational facilities or amenities	4	1	2	1		
anticipating retirement	3		1	1	1	
dwelling designed and/or built by respondent	3	1			2	
good access to family	3	1			2	
good garden or yard	3		1	2		
good access to shopping	3	1	1		1	
returned to former neighbourhood or region	2		1	1		
good privacy	2	1		1		
quiet neighbourhood	1	1		1		
good drainage	1	1				
less expensive	1			1		

Since expected cell frequencies are too small, and furthermore since the data in Table 7-7 are the 'number of mentions', which vary in total number among respondents, there is no valid way of analyzing the results statistically. It must suffice to point out the most prominent occurrences of motives among the residential mobility status groups. The 'not enough interior space' and the 'good environment or situation for raising children or for caring for another dependent' motives are precisely what would be expected among the **adaptively stable** group, who moved to their current dwelling after their household had reached its maximum size. The 'dissatisfaction with tenure' meant dissatisfaction with renting for this group, and was closely tied with the 'good investment opportunity' when it came to buying a dwelling. The livelihood part of running a household at its largest size is highlighted by the fact that 'job transfer' and 'closer to job' were mentioned by the **adaptively stable** group.

The 'not enough interior space' motive among **empty nest pre-retirement movers** and the **post-retirement movers** is anomalous. It would seem that for most people in these groups, the need for interior space would actually be shrinking. The 'too much effort needed for maintenance' and 'appropriately small size of dwelling and/or garden' and 'stairs difficult to manage for respondent or other household member' motives are certainly to be expected for a number of **post-retirement movers**. It is notable that the 'good climate' motive became more prominent at this later stage as well.

The '**push-pull**' model itself is quite artificial and limiting in some respects. It is possible to identify some unequivocal **push** factors, such as eviction by a landlord or an inter-province job transfer. Similarly, a few **pull** factors are well-described in such a framework, such as the dwelling's being owned by a relative or its having a good view. Most of the motives listed in either column of Table 7-7 would be better described as merely relative: one dwelling was too small and the other adequately large; one was too expensive and the other less so.

Adding this modelling difficulty to the great range of calendar years life-course stages noted earlier, the data in Table 7-7 are best left in their simple descriptive form, with no attempt at any kind of quantitative analysis based on them.

5. General Description

The instructions to respondents about the 'imaginary tour' (See Appendix E.) contained one aspect (printed in **bold** below) which was purely experimental:

> e) Would you please take me on an imaginary tour of your dwelling? **I'd like you to tell me about what it looks like in general. . . .**

The purpose of this open-ended instruction was to elicit a description of up to two of the most fundamental images which each respondent had of his own dwelling. The responses were then classified in very general terms. The results appear in Table 7-8:

TABLE 7-8
THE FIRST TWO EMPHASES OF RESPONDENTS' GENERAL DWELLING DESCRIPTION

EMPHASES	NUMBER OF MENTIONS
emphasis on building structure, dimensions, etc.	55
emphasis on functional qualities	41
emphasis on aesthetic qualities	21
emphasis on the building exterior	14
emphasis on the garden or yard	6
emphasis on the dwelling interior	6
other emphasis	1

Since this procedure is so experimental and the researcher had no solid basis on which to be able to predict the direction of any relationships, the results of any statistical correlations would have to meet the two-tailed standard to be considered significant. Correlations between respondents who included each of the most numerous six emphases to make general descriptions of their dwellings as against those who did not include each of the six emphases in turn were calculated for the major personal and activity indices according to the Median and Mann-Whitney Tests. Only those correlations which meet the two-tailed 5% error standard (or have Q values of less than or equal to 2.5%) in at least one of the tests are included in the following table.

TABLE 7-9
PERSONAL AND ACTIVITY INDICES CORRELATED WITH MAJOR EMPHASES OF
RESPONDENTS' GENERAL DESCRIPTIONS OF THEIR DWELLINGS

PERSONAL AND ACTIVITY INDICES	GENERAL DESCRIPTIVE EMPHASES	MEDIAN TEST				MANN - WHITNEY TEST			
		X^2	N_x Cc	N_y	Q	U	N_x z	N_y Q	+/T
Simultaneity	Aesthetics	5.684	19 0.263	57	**0.017**	746	19 2.160	59 **0.015**	14
Outdoor	Aesthetics	3.043	21 0.181	69	0.081	941.5	21 1.954	70 **0.025**	585.5

It is interesting that **aesthetics** is the only emphasis which correlated significantly with the activity or personal indices. The only two of the latter which paired significantly with **aesthetics** were **simultaneity** and the **indoor-outdoor** indices. Those who gave aesthetic emphases in their descriptions tended to spend **more** time in **simultaneous** activities and **less** time **outdoors.** The inverse relationship between **simultaneity** and **outdoor** activity is upheld in this finding. (See Table 5-14 and Figure 5-1.) This is an example of the relationships which can be discovered and which can be a stimulus for further research from the data which has been gathered for this thesis. Other variables derived from the telephone survey have much more straightforward meanings, and are treated in more detail in the following section.

II. CORRELATIONS WITH PERSONAL AND ACTIVITY INDICES

Five aspects of the current dwelling of respondents deserve to be correlated statistically with the personal and activity indices which have been developed in this thesis. These are **structural type** and **tenure,** which will be discussed together, the **number of rooms,** the **number of rooms per person,** and the **housing satisfaction scores.**

A. STRUCTURAL TYPE AND TENURE

The personal and activity indices can most reasonably be correlated with **structural type** and **tenure** of respondents' current dwellings by means of both the Median Test and the Mann-Whitney Test. These results are shown in the following table:

TABLE 7-10
PERSONAL AND ACTIVITY INDICES CORRELATED WITH TENURE AND STRUCTURAL TYPE WITH THE MEDIAN AND MANN-WHITNEY TESTS

PERSONAL AND ACTIVITY INDICES	TENURE OR STRUCTURAL TYPE	MEDIAN TEST					MANN-WHITNEY TEST					
		X^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	$+/T$
Muscular Motility	Sing./Mob. vs. Mult.	12.461	65	0.349	25	4.2E-4	1272.5	66	3.980	25	3.5E-5	25
Leisure	Owned/Co-op vs. Rented	10.003	74	0.318	15	0.002	734.5	76	1.767	15	0.039	499
Leisure	Sing./Mob. vs. Mult.	8.590	65	0.297	24	0.003	1044.5	66	1.960	25	0.025	499
Muscular Motility	Owned/Co-op vs. Rented	3.045	76	0.181	14	0.081	803	76	2.493	15	0.006	25
Career	Sing./Mob. vs. Mult.	2.714	65	0.171	25	0.099	930.5	65	1.065	25	0.143	216.5
Ped./Bicycle Travel Time	Owned/Co-op vs. Rented	2.533	30	0.250	8	0.111	162	31	1.323	8	0.093	9.5
Motor Vehicle Travel Time	Sing./Mob. vs. Mult.	2.014	44	0.182	15	0.156	468	45	1.772	16	0.038	47.5
Socio-Economic Status	Sing./Mob. vs. Mult.	1.898	61	0.148	24	0.168	806.5	63	0.480	24	0.316	4.5
Age	Sing./Mob. vs. Mult.	1.725	63	0.141	22	0.189	1016.5	66	1.705	25	0.044	146.5
Simultaneity	Owned/Co-op vs. Rented	1.401	62	0.135	14	0.237	549	64	1.315	14	0.094	14
Outdoor	Sing./Mob. vs. Mult.	1.385	65	0.123	25	0.239	1109.5	66	2.541	25	0.006	585.5
Motor Vehicle Travel Time	Owned/Co-op vs. Rented	1.063	50	0.133	9	0.302	315.5	51	1.180	10	0.119	47.5
Simultaneity	Sing./Mob. vs. Mult.	0.974	52	0.113	24	0.324	754	54	1.148	24	0.126	14
Income	Owned/Co-op vs. Rented	0.758	66	0.097	14	0.384	654	73	1.654	14	0.049	168
Age	Owned/Co-op vs. Rented	0.684	71	0.089	14	0.408	696.5	76	1.355	15	0.088	146.5
Privatism	Owned/Co-op vs. Rented	0.643	74	0.085	15	0.423	638	76	0.727	15	0.233	10.5
Ped./Bicycle Travel Time	Sing./Mob. vs. Mult.	0.487	26	0.113	12	0.485	167.5	27	0.168	12	0.433	9.5
Away From Dwelling	Sing./Mob. vs. Mult.	0.440	66	0.070	23	0.507	833.5	66	0.076	25	0.470	122
Privatism	Sing./Mob. vs. Mult.	0.411	64	0.068	25	0.521	912	66	0.774	25	0.220	10.5
Socio-Economic Status	Owned/Co-op vs. Rented	0.401	71	0.069	14	0.527	631	73	1.386	14	0.083	4.5

TABLE 7-10, CONT.

PERSONAL AND ACTIVITY INDICES	TENURE OR STRUCTURAL TYPE	MEDIAN TEST					MANN – WHITNEY TEST					
		x^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q	$+/T$
Income	Sing./Mob. vs. Mult.	0.194	56	0.049	24	0.660	770.5	63	0.138	24	0.445	168
Away From Dwelling	Owned/Co-op vs. Rented	0.109	74	0.035	15	0.741	687.5	76	1.259	15	0.104	122
Social Intercourse	Owned/Co-op vs. Rented	0.109	74	0.035	15	0.741	611.5	76	0.443	15	0.329	6.5
Outdoor	Owned/Co-op vs. Rented	0.080	75	0.030	15	0.777	697.5	76	1.370	15	0.085	585.5
Career	Owned/Co-op vs. Rented	0.080	75	0.030	15	0.777	574.5	75	0.130	15	0.448	216.5
Social Intercourse	Sing./Mob. vs. Mult.	0.029	64	0.018	25	0.865	831	66	0.053	25	0.479	6.5

In order to maintain consistency with other similar tables of both the Median Test and the Mann-Whitney Test, the correlations are ranked from the lowest to the highest according to the Median Test. It is evident, however, that the Mann-Whitney Test is considerably more powerful for these variables in rejecting the null hypothesis which posits that there is no significant difference between the two tenure and the two structural type groups with respect to the personal and activity indices.

Those variable pairs which are significantly correlated at better than the one-tailed 5% error have their Q-scores printed in **bold**. In addition, in order to clarify which tenure and structural type is positively correlated with a given index, it, as well as the index name, is also printed in **bold**.

The correlations from Table 7-10 which are statistically significant with less than a 5% error level are illustrated in the following figure:

FIGURE 7-1
HIGH CORRELATIONS OF ACTIVITY AND PERSONAL INDICES
WITH HOUSING TENURE AND TYPE
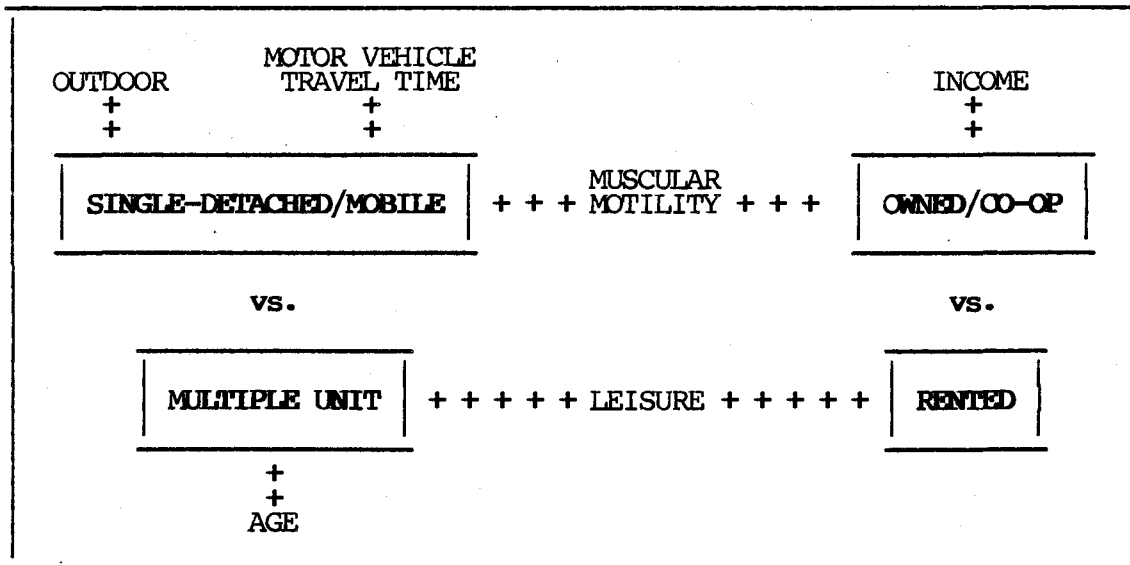
More **muscular motility** is highly correlated with both **single detached/mobile** structures and with **owned/co-op** tenure. Similarly, residents in **rented** dwellings and in dwellings in **multiple-unit buildings** spend more time in activities which they call **leisure.** These findings are important. They may be explained partly by the likelihood that owners and single detached/mobile residents have more non-sedentary work to do around their dwellings. People who have continued to lead more physically vigorous lives over the years may be less content in rented and multiple-unit accommodations. The best answers to the questions these relationships raise need to be examined more by further research in order to identify the most likely causes and effects. This is especially important in the case of **muscular motility.** If home ownership and single detached or mobile home residency actually **cause** men to lead more vigorous lives after retirement, then the social benefits are evident. We know from Chapter Five that it was much more common for respondents to nominate activities involving moderate or vigorous muscular motility to be their most satisfying activity on their diary day than sedentary activities. Since the **work-leisure** classification scheme is subjective and makes distinctions which are perhaps somewhat arbitrary for retired men, the correlation between more work and owned single detached dwellings may be less interesting. Neverthe-

less, respondents named **work** or partly-work activities as their most satisfying in proportions which markedly outweighed the average duration of work activities.

Both **motor vehicle travel time** and **outdoor** activities were positively correlated with single/mobile residency. The tendency for single detached and mobile homes to be located farther than walking distance from amenities such as commercial areas is obvious, so people living in these types of dwellings would naturally tend to spend more time in automobiles just carrying out routine errands. The popularity of gardening among those respondents with outdoor space of their own; this activity accounts for much of the total time which respondents spent outdoors.

The tendency of residents in multiple dwelling unit buildings to be older has already been discussed in the context of those who have been retired longer. A great deal of post-retirement moving tends to be into such dwellings.

The positive correlation between **income** and **owned/co-op** tenure is just barely significant within the 5% error level. The correlation is not surprising, of course. Its implications are important, though, since mortgage-free home ownership frees up a lot of disposable income which would otherwise go into either rent or its economic analogue: interest on mortgages. As stated earlier, investment in home ownership is investment for retirement.

B. NUMBER OF ROOMS AND ROOMS PER PERSON

Earlier in this chapter an inventory of the rooms and activity areas of the respondents' dwellings was discussed and analyzed. In the following discussion, the term 'rooms' actually refers to 'rooms and activity areas'. The number of rooms in respondents' dwellings ranged from three to twelve (excluding again halls, closets and bathrooms). The distribution of the number of rooms among the sample is shown on the following table with a 'data-rich histogram'.

TABLE 7-11
DISTRIBUTION OF THE NUMBER OF ROOMS AND ACTIVITY AREAS
IN CURRENT RESPONDENT DWELLINGS

```
       5
       5
       5
       5
       5
       5
       5
       5                 7
       5                 7     8
       5                 7     8
       5                 7     8        10
       5        6        7     8     9  10
       5        6        7     8     9  10
       5        6        7     8     9  10
       5        6        7     8     9  10
       5        6        7     8     9  10
       5        6        7     8     9  10
       5        6        7     8     9  10
          4     5        6     7     8     9  10
    3     4     5        6     7     8     9  10
    3     4     5        6     7     8     9  10      11
    3     4     5        6     7     8     9  10      11     12
    |—|—|—|—|—|—|—|—|—|—|—|
```
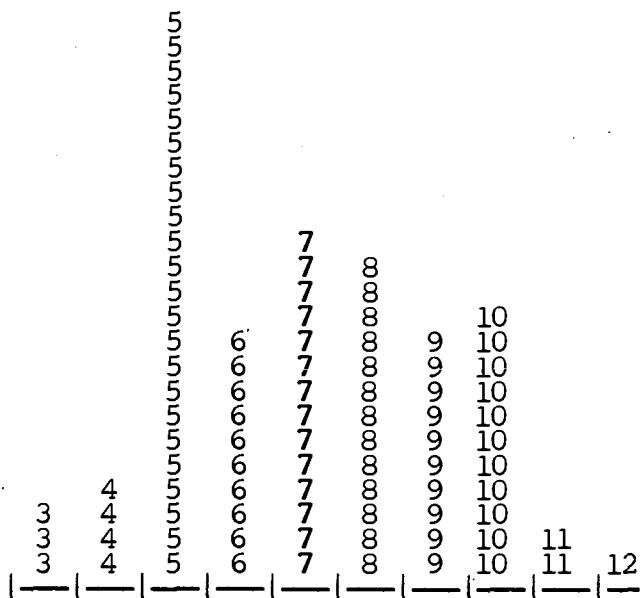
In spite of the large number of dwellings with five rooms, the distribution is actually quite even. The median is 7 rooms and the mean is an essentially identical 6.99 rooms. This might typically translate into a house with a kitchen, a living room, a dining room, three bedrooms and a utility room. The interquartile range is 4 rooms and the standard deviation is 2.1 rooms.

The Spearman's Rank Correlation data are shown in the following table for the number of rooms versus the personal and activity indices.

TABLE 7-12
SPEARMAN'S RANK CORRELATIONS OF THE NUMBER OF DWELLING ROOMS AND ACTIVITY
AREAS VERSUS PERSONAL AND ACTIVITY INDICES

PERSONAL AND ACTIVITY INDICES	SPEARMAN'S RANK CORRELATION			
	rs	rs-z	Q	N
Muscular Motility	0.268	2.544	0.005	91
Age	⁻0.257	⁻2.434	0.007	91
Leisure	⁻0.226	⁻2.143	0.016	91
Income	0.149	1.378	0.084	87
Away from Dwelling	⁻0.116	⁻1.105	0.135	91
Motor Vehicle Travel Time	0.140	1.082	0.140	61
Outdoor	0.094	0.894	0.186	91
Career	⁻0.047	⁻0.448	0.327	90
Privatism	0.042	0.397	0.346	91
Social Intercourse	⁻0.030	⁻0.285	0.388	91
Pedestrian-Bicycle Travel Time	0.041	0.252	0.400	39
Simultaneity	⁻0.026	⁻0.230	0.409	78
Socio-Economic Status	6.3E⁻3	0.057	0.477	87

Muscular motility is strongly and positively correlated with the num-
ber of rooms in the respondents' current dwelling. Respondent age and time
spent in leisure activity, on the other hand, are both strongly negatively
correlated with the number of rooms. This is a pattern which is familiar,
since it occurred with structural type for all three personal and activity
indices, and with tenure for muscular motility and leisure. In order to deter-
mine whether we are actually seeing structural type and tenure in the number
of rooms variable, those correlations need to be sought. It would be prefer-
able to use some sort of partial correlation in order to tackle this problem.

There is a technical reason why this cannot easily be done. An excellent ordinal test for which partial correlations are easily obtainable is Kendall's **tau**. However, as already discussed in this thesis, Kendall's **tau** values vary when both variables being tested contain tie values, rendering any results invalid. It is possible to do partial correlations with Spearman's **rs**, as well, but in that case the partial correlations require an accounting for ties, which is not relevant for the normal Spearman's **rs**. (Koopman 1986) So, short of much more sophisticated non-parametric multivariate techniques, such as Logit and Log-Linear analysis, partialing out other factors does not appear to be feasible. The correlations of the **number of rooms** with **structural type** and **tenure** are therefore shown in the following table using the simpler Median and Mann-Whitney Tests.

TABLE 7-13
NUMBER OF ROOMS IN THE CURRENT DWELLING VERSUS ITS TENURE AND
STRUCTURAL TYPE CORRELATED WITH THE MEDIAN AND MANN-WHITNEY TESTS

TENURE OR STRUCTURAL TYPE	M E D I A N T E S T				M A N N - W H I T N E Y T E S T				
	x^2	N_x	C_c	N_y	Q	U	N_x	z	N_y	Q +/T
Sing./Mob. vs. Mult.	20.350	54	0.457	23	6.4E-6	1343	66	4.669	25	1704 1.5E-6
Owned/Co-op vs. Rented	11.472	63	0.360	14	0.001	905	76	3.633	15	1704 1.4E-4

Since these correlations are so high, there can be little doubt that the positive and negative correlations with the number of rooms is largely another expression of ownership/co-operative tenure and single detached/mobile structural type.

The indices on Table 7-12 with poorer correlations are also of interest. Income is positively correlated with the number of rooms, but at an error level above 5%. The correlations with **career** and with **socio-economic status** are very poor.

Another perspective can be gained from the information on the number of rooms if the number of household members is also factored in as a divisor, yielding the **number of rooms per person** in the household. This ratio ranged in this sample from 1 : 1 to 1 : 9. The distribution of the ratio is shown with

a 'data-rich histogram' in the following table:

TABLE 7-14
**DISTRIBUTION OF ROOMS AND ACTIVITY AREAS PER PERSON AT
CURRENT RESPONDENT DWELLINGS**

```
                        3.5
                2.7     3.5
                2.7     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5
                2.5     3.5     4.5
                2.5     3.3     4.5
                2.5     3.3     4.5
                2.5     3.0     4.5
                2.5     3.0     4.5
                2.5     3.0     4.5     5.5
                2.5     3.0     4.5     5.5
                2.5     3.0     4.0     5.0
                2.5     3.0     4.0     5.0
                2.5     3.0     4.0     5.0
                2.5     3.0     4.0     5.0
                2.3     3.0     4.0     5.0
        1.7     2.3     3.0     4.0     5.0
        1.7     2.0     3.0     4.0     5.0
        1.7     2.0     3.0     4.0     5.0
        1.5     2.0     3.0     4.0     5.0
        1.0     2.0     3.0     4.0     5.0     6.0   7.0   8.0   9.0
|———|———|———|———|———|———|———|———|———|
```

The median ratio is 3.3 rooms per person and the mean is 3.5. So there is a slight positive skewness to the distribution. The interquartile range is 2 rooms per person and the standard deviation is 1.35. It appears that with very few exceptions, most of these respondents were living in adequate, even commodious, dwellings. The important question, however, is what effect different degrees of roominess had on the activities of the respondents and to what extent personal variables may have affected that ratio. The Spearman's **tau** values for these correlations are given in the next table:

TABLE 7-15
SPEARMAN'S RANK CORRELATIONS OF THE NUMBER OF DWELLING ROOMS AND ACTIVITY AREAS PER PERSON VERSUS PERSONAL AND ACTIVITY INDICES

PERSONAL AND ACTIVITY INDICES	SPEARMAN'S RANK CORRELATION			
	rs	rs-z	Q	N
Muscular Motility	0.210	1.987	0.023	91
Age	⁻0.168	⁻1.590	0.056	91
Leisure	⁻0.165	⁻1.570	0.058	91
Income	0.137	1.271	0.102	87
Outdoor	0.107	1.014	0.155	91
Privatism	0.071	0.669	0.252	91
Motor Vehicle Travel Time	0.042	0.325	0.373	61
Social Intercourse	⁻0.053	⁻0.506	0.307	91
Socio-Economic Status	0.023	0.210	0.417	87
Simultaneity	0.016	0.142	0.444	78
Career	0.014	0.131	0.448	90
Pedestrian-Bicycle Travel Time	0.020	0.121	0.452	39
Away from Dwelling	6.4E⁻3	0.061	0.476	91

Only **muscular motility** is correlated with the **number of rooms per person** at an error level of less than 5%, although **age** and **leisure** are negatively correlated at just above that standard. **Income** is less strongly correlated with the ratio than it is with the **number of rooms**. Again, the **socio-economic status** and **career** indices are very poorly correlated with the room per person ratio. The simplest explanation for the association between more muscular motility and more roominess is that the extra room itself tends to stimulate more active pursuits. The secondary association with single detached/mobile structural type and with ownership/co-operative tenure needs to be examined.

The same Median and Mann-Whitney Tests are used for this purpose, and reported in the following table:

TABLE 7-16
NUMBER OF ROOMS PER PERSON IN THE CURRENT DWELLING VERSUS ITS TENURE AND STRUCTURAL TYPE CORRELATED WITH THE MEDIAN AND MANN-WHITNEY TESTS

TENURE OR STRUCTURAL TYPE	MEDIAN TEST				MANN-WHITNEY TEST				
	x^2	N_x C_c	N_y	Q	U	N_x z	N_y	Q	+/T
Sing./Mob. vs. Mult.	15.551	64 0.386	25	8.0E-5	1238	66 3.702	25	1.4E-4	1024
Owned/Co-op vs. Rented	9.408	74 0.309	15	0.002	821.5	76 2.712	15	0.003	1024

Although these correlations are all less than for the **number of rooms**, nevertheless the ratio of **rooms per person** in the households of the retired men in the sample is still very strongly correlated with ownership/co-operative tenure and with single detached/mobile structural types.

The questions of cause and effect are really unsolved at this state of our knowledge. Do dwellings with more rooms tend to actually stimulate more vigorous muscular motility, or are retired men with more inclination toward a more physically active lifestyle generally attracted to this sort of housing tenure and type?

C. HOUSING SATISFACTION

The **housing satisfaction scores** which were discussed earlier in this chapter can also be correlated with personal and activity indices. The following table shows the Spearman's **rs** correlations for these variables.

TABLE 7-17
**SPEARMAN'S RANK CORRELATIONS OF HOUSING SATISFACTION SCORES
VERSUS PERSONAL AND ACTIVITY INDICES**

PERSONAL AND ACTIVITY INDICES	SPEARMAN'S RANK CORRELATION			
	rs	rs-z	Q	N
Privatism	0.107	1.014	0.155	91
Motor Vehicle Travel Time	⁻0.124	⁻0.960	0.169	61
Simultaneity	⁻0.103	⁻0.908	0.182	78
Age	0.082	0.775	0.219	91
Income	0.057	0.526	0.300	87
Outdoor	⁻0.043	⁻04094	0.341	91
Social Intercourse	⁻0.038	⁻0.357	0.360	91
Pedestrian-Bicycle Travel Time	0.034	0.209	0.419	39
Away from Dwelling	0.018	0.171	0.432	91
Leisure	0.018	0.167	0.434	91
Career	0.014	0.136	0.446	90
Socio-Economic Status	⁻4.7E⁻4	⁻0.044	0.483	87
Muscular Motility	⁻1.6E⁻4	⁻1.5E⁻3	0.499	91

Earlier in this chapter, the analysis of a **housing satisfaction score** demonstrated that no respondents were, on balance, more dissatisfied with their housing than they were satisfied with it. Therefore the correlations in Table 7-17 are for various degrees of satisfaction except for the three respondents who were neutral with respect to a satisfaction-dissatisfaction scale. (See Table 7-4.)

The above table shows that there is no correlation between degrees of housing satisfaction and any of the previously identified personal or activity indices. In other words, it does not matter whether a group of men are just

neutral or moderately satisfied or extremely satisfied with their housing with respect to the way they spend their time on a daily basis.

III. A REVIEW OF THE CURRENT DWELLING

This is a summary of the principal findings of this chapter on the current dwelling of the retired men who were respondents to the telephone survey.

1. Most of the respondents lived in single detached dwellings at the time of the survey. All but one of these owned his house. Those who lived in dwellings with other structural types were about evenly divided between renters and owners.

2. The dwellings averaged seven rooms or activity areas each, not including bathrooms, closets or hallways. Since most respondents lived with their wives and had no other members of their households, this meant that they generally had about 3 to 4 rooms for each household member. The dwelling most commonly included two or more bedrooms, a kitchen, a dining room, a living room and one other room of miscellaneous identity. The single most identifiable function for rooms other than sleeping in bedrooms was television. There was more than one room on average whose first or second principal function was for watching television.

3. Based on a request to list advantages and disadvantages of both the dwelling and the location of the dwelling, this group came across very satisfied with its housing situation.

4. There are a number of statistically significant correlations with personal and activity indices for variables related to the current dwelling. Activities involving more **muscular motility** are highly correlated with owned/cooperative tenure and with single detached/mobile structural types. Respondents who live in dwellings in multiple-unit buildings and renters spent more time engaged in activities which the respondents classified as **leisure**. Residents in multiple-unit buildings tended to be **older**. More time was spent in **motor vehicles** and **outside** by residents of single detached and mobile dwellings. Respondents who owned their own dwellings also tended to have more **income**. Residents whose dwellings have **more total rooms or activity areas** or **more rooms or activity areas per household member** tended to engage in

activities which required more **muscular motility.** **Older** respondents and those who spent more time with **leisure** activities also tended to live in dwellings with **more rooms or activity areas.**

[1]The one respondent whose dwelling tenure was **co-operative** at the time of the telephone survey lived in an **other multiple-dwelling building** in West Vancouver. (See Map 5-2.) He is included in the **owner-occupied column** in Table 7-1.

[2]Carports and garages were undercounted in this survey, since the wording of the instructions encouraged most respondents to ignore parts of their dwelling which they did not consider to be part of their dwelling, **per se**.

[3]It is very likely that the rooms which are in fact 'idle or seldom used' were considerably undercounted in this sample. Many of those bedrooms which were classed as 'providing guests with sleeping accommodation' probably fall under this category.

[4]It would be preferable to use some sort of partial correlation in order to tackle this problem. There is a technical reason why this cannot easily be done. An excellent ordinal test for which partial correlations are easily obtainable is Kendall's **tau**. However, as already discussed in this thesis, Kendall's **tau** values vary when both variables being tested contain tie values, rendering any results invalid. It is possible to do partial correlations with Spearman's **rs**, as well, but in that case the partial correlations require an accounting for ties, which is not relevant for the normal Spearman's **rs**. (Koopman 1986) So, short of much more sophisticated non-parametric multivariate techniques, such as Logit and Log-Linear analysis, partialing out other factors does not appear to be feasible.

C H A P T E R   E I G H T

C O N C L U S I O N

I. SUMMARY

A telephone survey was conducted among a random sample of 91 men liv-
ing in private dwellings within five municipalities in the Vancouver, British
Columbia, area who were listed as 'retired' in the two Vancouver-area Polk
directories. These men were asked to give some basic household and socio-
economic information, a one-day-recall 24-hour time and location budget, a
housing history and characteristics of their current dwelling. The following
is a summary of the information which was gathered in this survey.

A. THE SURVEY RESPONDENTS

The respondents to the survey conducted for this thesis were mostly
Canadian-born married anglophones. They were fairly well educated (mean and
median: 11 years of schooling) and had household incomes which they considered
adequate (median over $21 000). They represented a broad range of pre-
retirement occupations. All but 21 of the 91 respondents had little or no
health problems which limited their daily activities.

B. ACTIVITIES

1. Taxonomy

The activities of respondents were classified first according to a
taxonomic classification system which is routinely used among time budget soc-
iologists. Except in the case of sleeping, the number of respondents who par-
ticipated in each activity is less than the total sample, so the more detailed
tables should be consulted for respondent duration. According to this scheme,
the most common primary activities of the retired men in this sample, in rank
order according to the aggregate duration (indicated to the nearest hour) fol-
low:

Taxonomic Activity Classification	Hours
sleeping in bed	766
TV watching/listening	292
reading	167
meals at home	141
gardening, pet care	76
hobbies, arts, crafts, passive games	69
washing, dressing, shaving	69
shopping and related travel	63
active sports or exercise	63
talking	60
meal preparation and cleanup	50
leisure travel	40
routine indoor chores	38
repairs, maintenance	35
light beverages or snacks	33

The corresponding rankings for secondary simultaneous activities are:

radio listening	53
TV watching/listening	49
talking	32
light beverages or snacks	28
reading	18
private or personal activity	18

Similarly, the top-ranking tertiary simultaneous activities were:

radio listening	11
talking	8
light beverages or snacks	5
TV watching/listening	4
reading	3

The details of the duration of activities according to this system are given in Tables 4-2, 4-8 and 4-9 and Appendices G, H and I.

2. Perceptual-Functional Classifications

The respondents' diary day was spent mostly with activities which they classified as 'leisure' according to a subjective work-leisure classification scheme. 'Receptive' and 'interactive' activities were less common than 'introspective' ones. The time spent in each of these categories of activity according to their mode of social intercourse was used to calculate an interactivity index. Similarly, activities which occurred simultaneously (less than 11% of respondents' daily activity time) were timed to produce a simultaneity index. Activity classified as requiring 'minimal' as distinct from 'moderate' or 'vigorous' muscular motility dominated respondents' diary days. A muscular motility index was calculated based on the time spent in the three degrees of muscular motility.

Locational aspects of the time budget data were analyzed according to a general or generic regional system in the form of types of activity places.

These were classified according to an **indoor-outdoor** dimension and an **in or associated with the dwelling** versus **away from the dwelling** dimension. These dimensions were used to produce an **indoor-outdoor index** and an **away from dwelling index.** Over eighty-five percent of respondent time was spent in or associated with the dwelling. Over ninety percent of their time was spent indoors.

Time spent in travel during respondents' diary days was divided into **pedestrian or bicycle travel time** and **motor vehicle travel time.** Indices were calculated for each of these variables. Less than one percent (0.65%) of respondents time was spent in muscle-powered travel. Under three percent of their time was spent travelling by motor vehicle.

C. HOUSING HISTORY

The housing histories of respondents were elicited with the framework of certain life-course events or periods: 1) the **period of maximum household size,** or the time when the number of members of respondents' neolocal households was the largest, 2) the beginning of the **empty nest** period, or when all formerly-dependent children in the respondents' neolocal household were living elsewhere, 3) the beginning of **retirement,** and 4) the time of the **most recent residential move.** According to the occurrence of their most recent move with respect to the other three events or periods, most respondents were classified into one of four **residential mobility categories:** the **highly stable residents** (13 respondents), the **adaptively stable residents** (26 respondents), the **empty nest pre-retirement movers** (18 respondents), and the **post-retirement movers** (29 respondents).

D. CURRENT DWELLING

The respondents to the telephone survey were asked for the tenure and type of their current dwelling as well as details about the use of space within their domestic sphere. Eighty-two percent were owner occupied, 16% were rented and 1% reported co-operative tenure. Sixty-nine percent were living in single detached dwellings at the time of the survey, 3% in mobile dwellings and 18% were living in dwellings in multiple-unit buildings. The dwellings ranged from 3 to 12 rooms each, averaging (mean and median) seven rooms or

activity areas each (or 3 to 4 rooms per person), ranging from 3 to 12.

II. FINDINGS AND IMPLICATIONS

A. HYPOTHESIS

The basic purpose of this thesis was to examine the validity of its fundamental hypothesis, namely: **The activity patterns of retired men may be differentiated more by characteristics of their housing than by traditional sociometric variables other than age.**

B. STATISTICAL FINDINGS AND IMPLICATIONS

The principal statistical findings which speak to the fundamental hypothesis are as follows:

1) Ownership tenure and single detached or mobile home residency are significantly correlated with activities which respondents classified as 'work' rather than 'leisure' and with activities requiring relatively vigorous muscular motility. The fact that the retired men who tend to be the most active live in their own single detached dwellings is a very important finding. The converse is important enough that it should also be stated: retired men who live in rented and multiple-dwelling-unit buildings tend to lead more sedentary lives. The cause and effect relationships are a matter of speculation. If there is any possibility that more active retirement can be **stimulated** by single detached or mobile home structural types and by owner-occupancy, then these two housing characteristics should be actively fostered in Canadian society, as they have been to a much greater extent in the past. Policy considerations concerning registered savings plans, reverse mortgages and other schemes would be implied.

2) The number of rooms in the dwelling and the number of rooms per person are both correlated positively with muscular motility; the number of rooms is inversely correlated with the men's age and with leisure activities. This second conclusion is closely related to the first: single detached dwellings generally have more rooms (and activity areas) than dwellings in multiple-unit buildings. Larger dwellings often require more effort in maintenance, and some retirees spoke negatively about maintenance problems and positively

about their relative absence (Tables 7-6, 7-7). Nevertheless, even relatively home-bound retirees may find some stimulus in the demands for more maintenance which contributes positively to their well-being. Worthwhile future research might focus on these issues with a view to sorting out cause and effect relationships.

3) **Age of respondents correlates negatively with muscular motility.** Since the age of respondents to this survey ranged from 57 to 87, it is to be expected that some such age-related morbidity would emerge. As people age, they experience some physical deterioration which leads eventually to death. Indeed, 19 of the 301 men originally chosen randomly for the survey were confirmed to have died. Others probably were included among those who could not be contacted.

4) **Higher socio-economic status correlates with outdoor activities.** This is the only finding which directly contradicts the fundamental hypothesis. It is a case where a variable was not directly related to the dwelling itself. The variable of **socio-economic** status combines the characteristics of income, education and occupation before retirement. Singly, these three components did not correlate with outdoor activities to a degree which was statistically significant within in 5% error level. Only in combination was the relationship strong enough. The reasons for this finding are complex and to a large extent unknown. The survey demonstrated that outdoor activities are positively correlated with single detached or mobile structural type (Table 7-10). This was largely a result of gardening activity by these residents (Appendix G). Nevertheless, socio-economic status does not correlate significantly with either structural type or tenure, according to this study. In this case as well, further research would be useful.

5) **A counter-intuitive finding emerged, based on aggregate government data, of an inverse relationship between household income and interior dwelling space per person.** This finding could be neither confirmed nor contradicted at the level of this survey sample. It appears that this relationship might actually be a corollary of the positive relationship between the number of household member and the total household income. This finding is nevertheless intriguing enough to merit further scholarly attention.

27 August 1984

Mr Agamemnon H. Palamedes
99-999 Menelaus Drive
Somnopolis, BC   VON ONO

Dear Mr Palamedes:

The retired population in Canada is increasing rapidly. If we are to develop appropriate strategies to meet the housing, recreational and social needs of this group, it is important to have an accurate indication of how retired people spend their time and how they are housed. As part of my thesis work in the Department of Geography at Simon Fraser University, I am contacting some men listed as 'retired' in the **Vancouver City Directory** to gather this information. As one of those selected, I would be most grateful if you would participate in this study by answering some questions over the telephone.

In the next few days my research associate or I will telephone you to ask you to join this study. If you agree, the interview should last about 40 minutes. You will be asked about what things you did on the previous day and about your housing, as well as some general questions about yourself and any other people in your household.

Considerable care is being taken to ensure that your name and address will be kept confidential and that any information you give cannot be attributed to you. You may decline to answer any question, and you may end the interview at any time. Furthermore, this study is being done for academic purposes only, not for any commercial reasons.

If you have any questions about the survey, or if you do not wish to participate, please telephone me at 291-3715 or leave a message at 291-3321.

Thank you for your help.

Sincerely,

J. Bruce Prior
Ph.D. Candidate

CONTACT FORM   ***CONFIDENTIAL WHEN COMPLETED***

RESPONDENT | | | | | DIARY DAY CODE: | | | INTERVIEWER: | |
NUMBER: | | | | |

NAME: | | PHONE: | | | | | | | | |

STREET ADDRESS: | | CITY: | |

POSTAL CODE: | | | | | | | | MAIL DATE: MONTH DATE | | | | | |

FED: | | | | EA: | | | | CT: | | | | . | | |

UTM EASTING: | | | | | | UTM NORTHING: | | | | | |

CALL RECORD

CALL NO.	DATE MONTH-DATE	START TIME	FINISH TIME	RESULT DESCRIPTION	RESULT CODE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

274

APPOINTMENT RECORD

	DAY OF WEEK	DATE	TIME	APPOINTMENT BY WHOM?
APPOINTMENT #1				
APPOINTMENT #2				

RESULT CODES[*]

10 Interview Completed
20 Telephone Problem
   21 no answer
   22 line busy
   23 number not in service
   24 wrong number
30 Qualification Problem
   31 female
   32 not retired
   33 too ill
   34 no longer living in study area
40 Contact Problem
   41 not available when telephoned
   42 not available on any day after assigned diary day
   43 too deaf to converse adequately on telephone
   44 unable to converse adequately in English
   45 letter returned by Canada Post
50 Appointment Made
   51 appointment made by respondent
   52 appointment made through another person
60 Refusal Problem
   61 refused to be interviewed
   62 interview incomplete; respondent refused to continue
   63 interview refusal communicated by another person
70 Respondent Deceased
80 Other Result
DWELLING 6 ADDRESS: _____

DWELLING 7 ADDRESS: _____

NOTES: _____

_____

[*]Use codes evenly divisible by ten when no subcode applies.

INSTRUCTIONS

THIS IS A SCRIPT FOR THE VERY BEGINNING OF EACH TELEPHONE INTERVIEW. INDIVIDUAL RESPONSES SHOULD NOT BE WRITTEN ON THIS SHEET. BEFORE EACH INTERVIEW, THE FOLLOWING SHOULD BE AT HAND:

1 CONFIDENTIAL CONTACT FORM WITH THE RESPONDENT NUMBER, DIARY DAY CODE, NAME, TELEPHONE NUMBER, STREET ADDRESS, CITY, POSTAL CODE AND MAIL DATE OF THE PERSON TO BE CALLED [THE FEDERAL ELECTORAL DISTRICT, ENUMERATION AREA, CENSUS TRACT, UNIVERSAL TRANSVERSE MERCATOR EASTING AND NORTHING ARE NOT NEEDED FOR THE INTERVIEW.]

AN AMPLE SUPPLY (AT LEAST 40 COPIES) OF THE TIME BUDGET FORM

1 TIME BUDGET CODING SCHEME

1 HOUSING HISTORY FORM

1 CURRENT DWELLING FORM

1 GENERAL INFORMATION FORM

IF AT ANY POINT IN THE INTERVIEW THE RESPONDENT INDICATES UNWILLINGNESS TO ANSWER A PARTICULAR QUESTION, BEGIN BY SAYING THAT HE NEED NOT ANSWER THE QUESTION, BUT REASSURE HIM THAT THE INFORMATION IS TO BE USED ONLY FOR RESEARCH PURPOSES, AND WILL NOT BE ATTRIBUTED TO HIM, AND THAT THE INFORMATION WOULD BE HELPFUL FOR THE PROJECT. BEAR IN MIND THAT IT IS MUCH BETTER TO HAVE ONE OR TWO QUESTIONS UNANSWERED THAN FOR THE INTERVIEW TO BE PREMATURELY TERMINATED, OR FOR THERE TO BE ANY NEGATIVE REFLECTIONS ON SIMON FRASER UNIVERSITY.

a) [BEFORE DIALING THE NUMBER, ENTER THE MONTH, DATE AND START TIME ON THE CONTACT FORM.]

b) [IF THE TELEPHONE IS ANSWERED BY AN ADULT MALE:]

Hello, is this _____ _____ [NAME OF RESPONDENT]?

|YES| |NO|

[GO TO f).]   [GO TO c).]

c) **May I speak with him please?**

|YES| |NO|

[GO TO b).]   [RESPOND APPROPRIATELY AND MARK THE CONTACT FORM.]

d) [IF THE TELEPHONE IS ANSWERED BY A CHILD OR A WOMAN:]
       Hello, is _____ _____ [NAME OF RESPONDENT] there?

|YES| |NO|

[GO TO e).]   [RESPOND APPROPRIATELY AND MARK
                                      THE CONTACT FORM.]

e) May I speak with him please?

|YES| |NO|

<————<———————<————————[GO TO b).]   [RESPOND APPROPRIATELY AND MARK
                                                   THE CONTACT FORM.]

f) I'm calling from the Geography Department at Simon Fraser University. We wrote you a letter recently about a research project on the activities of retired men in the Vancouver area. Did the letter get to you in time?

|YES| |NO|

<————————<————————<——[GO TO h).]   [GO TO g).]

g) I'm sorry. Sometimes the mail can be very slow. The
Simon Fraser Geography Department is contacting some
men who are listed as 'retired' in the "City Directory"
to learn about their housing and how they spend their
time. We need this information if the housing and recre-
ational needs of this important group of Canadians is
to be addressed properly. Since you are one of those
selected we would be most grateful if you would parti-
cipate in this study by answering some questions over
the telephone. We are being very careful to ensure that
your name and address will be kept confidential and
that any information you give cannot be attributed to
you. You may decline to answer any question, and you
may end the interview at any time. Also, this study is
being done for academic purposes only, not for any
commercial reasons. [PAUSE.] Would you please help us?

```
 V
 |                    |YES|              |NO|
 |                    |__|               |__|
 |    |<----<---[GO TO i).]    [RESPOND APPROPRIATELY AND MARK
 V    V                                 THE CONTACT FORM.]
-->+>h) Good. I'd very much appreciate your help on
    |  this project. This interview is confidential and it's
    |  completely voluntary on your part. Would you please
    V  help us by answering some questions?
    |
    |                   |YES|             |NO|
    V                   |__|              |__|
    |<----<----[GO TO i).]    [RESPOND APPROPRIATELY AND MARK
    V                                  THE CONTACT FORM.]
```

i) Thank you. The interview should take about 40 minutes. Is this a convenient time to talk?

```
                       |YES|             |NO|
                       |__|              |__|
    |<----<----[GO TO j).]    [MAKE AN APPOINTMENT FOR LATER
    |                          TODAY OR THE SAME DAY NEXT WEEK
    |                          AND MARK THE CONTACT FORM.]
    V
```

j) Good. Let's begin. First, we need to talk about what things you did yesterday—that was a ____ day [NAME YESTERDAY'S DAY OF THE WEEK]. We'll be making an outline of your day, including what you did, where you were and who else was with you at the time, and whether you were doing more than one thing at the same time. Let me give you an example of how the story of a typical day might begin:

"Yesterday morning I woke up at about 7:15. From then until about 8 o'clock I showered and shaved and got dressed. Then I took about a half hour to eat breakfast. While I was eating I talked with my wife and my visiting granddaughter. I read THE PROVINCE and listened to the radio until just after the 9:00 o'clock news. Then my granddaughter and I walked out into the rain to a nearby grocery store to buy a few odds and ends."

At that point I might ask where the store was located, and how long it took you to walk there, to do your shopping, and to walk back to your house. Now, please take a moment to recall the activities you did yesterday. [PAUSE] So, how did you begin the day yesterday?

[RECORD THE TIME BUDGET ON THE SEPARATE FORMS. LABEL EACH FORM WITH THE RESPONDENT NUMBER, AND PROMPT FOR MORE DETAILS AS NECESSARY. THEN PROCEED THROUGH THE HOUSING HISTORY FORM, THE CURRENT DWELLING FORM AND THE GENERAL INFORMATION FORM, IN THAT ORDER.]

TIME BUDGET FORM

RESPONDENT |___|___|___| DIARY   MONTH   DATE   DIARY
NUMBER: |___|___|___| DATE: |___|___|___|___| DAY CODE: |___|

a: And then, what did you do next?   b: When did this start?

c: When did this end?   d: Where were you? OR Were you still ... ?

[OMIT QUESTIONS e AND f FOR SEX, SLEEP AND OTHER PERSONAL CARE ACTIVITIES.]

e: Who was with you? OR Were you still with ... ?

f: Were you doing anything else at the same time (like reading, talking, watching TV, listening to the radio or eating)?

START TIME	END TIME	LOCATION	COMPANION
|___|___|___|	|___|___|___|		|___|

UTM EASTING: |___|___|___|___|	UTM NORTHING: |___|___|___|___|___|	COMPANION CODING: |___|___|___|___|

                                                              REL GEN SEX NUM

FEDERAL ELECTORAL DISTRICT |___|___|___| .|___|___|___| ENUMERATION AREA |___|___|___| |___|___|___| TRANSIT CODE: |___| |___|

ACTIVITY 1	INT'L. CODE	PERCEPTUAL-FUNCTIONAL CODING
	|___|___|___|	|___|___|___|___|___|

                                           SOC/IN MOT TEN IND/OU WRK/LE

ACTIVITY 2	INT'L. CODE	PERCEPTUAL-FUNCTIONAL CODING
	|___|___|___|	|___|___|___|___|___|

                                           SOC/IN MOT TEN IND/OU WRK/LE

ACTIVITY 3	INT'L. CODE	PERCEPTUAL-FUNCTIONAL CODING
	|___|___|___|	|___|___|___|___|___|

                                           SOC/IN MOT TEN IND/OU WRK/LE

[AFTER COMPLETING A 24-HOUR DIARY, CHECK FOR GAPS AND UNMENTIONED EVENTS LIKE TRAVELLING AND MEAL PREPARATION/CLEAN-UP, AND THEN ASK:]
g: Thinking back over the whole day, yesterday, which activity did you find most satisfying? _____

SATISFACTION CODING: |____|____|____|

h: How typical would you say yesterday was compared to the previous four
_____ days [NAME DIARY DAY OF WEEK]?
    1=very typical   3=not very typical   TYPICALITY | |
    2=fairly typical   4=not at all typical   CODING: |____|

i:[IF THE TRANSIT STRIKE WAS STILL UNDERWAY ON THE DIARY DATE, ADD:]
During 1984 before the transit strike, about how many return trips did you
make each month by public transit?]| | | [IF MORE How did the transit
                                    |____|____| THAN 1:]
strike affect your day yesterday?_____

TRANSIT STRIKE CODING: |____|____|____|

j: Now I'd like to go back over the your time diary with you and ask you how
you felt about each of the activities you have mentioned. That is, I would
like to know, for EACH activity, whether you saw it as LEISURE, as WORK or as
a MIXTURE of LEISURE AND WORK, or whether it was NEITHER LEISURE NOR WORK. So,
if we take the first activity which you mentioned, [NAME ACTIVITY], how did
you feel about that activity?

[IF THE ACTIVITY WAS DEFINED AS A MIXTURE OF WORK AND LEISURE, ASK:]
k: Would you say it was about EQUALLY WORK and LEISURE, or MORE LEISURE-LIKE
or MORE WORK-LIKE? [RECORD EACH ANSWER IN THE APPROPRIATE PERCEPTUAL-FUNCTION-
AL WRK-LE BOX.]

l: Are you LIMITED by WHERE you live or by the TYPE of your HOUSING in any
activities which you would like to pursue? [Y/N] | |
                                                  |____|

[IF SO:] How are you limited? _____

HOUSING/ACTIVITY | | | |
LIMITATION CODE: |____|____|____|

TIME BUDGET CODING SCHEME

DIARY DAY CODING

1 Sunday   2 Monday   3 Tuesday   4 Wednesday   5 Thursday   6 Friday   7 Saturday

TIME CODING

Clock Time	4:00 a.m.	5:00 a.m.	6:00 a.m.	7:00 a.m.	8:00 a.m.	9:00 a.m.
Coded Time	0400	0500	0600	0700	0800	0900

Clock Time	10:00 a.m.	11:00 a.m.	12:00 noon	1:00 p.m.	2:00 p.m.	3:00 p.m.
Coded Time	1000	1100	1200	1300	1400	1500

Clock Time	4:00 p.m.	5:00 p.m.	6:00 p.m.	7:00 p.m.	8:00 p.m.	9:00 p.m.
Coded Time	1600	1700	1800	1900	2000	2100

Clock Time	10:00 p.m.	11:00 p.m.	12:00 midnight	1:00 a.m.	2:00 a.m.	3:00 a.m.
Coded Time	2200	2300	2400	2500	2600	2700

COMPANION CODING

Companion Relationship to Respondent [REL]

F Friend   W Wife   S Stranger   R Relative (including in-law, guardian, step-relationships)   X miXed relationships   N No companion recorded   Z no data

Companion Generation [GEN]
N No companion recorded   O Older generation than respondent   S Same generation as respondent   X miXed generations   Y Younger generation than respondent   Z no data

Companion Sex [SEX]
F Female   M Male   N No companion recorded   X miXed sexes   Z no data

Companion Number [NUM]

This variable is simply the number of other people who shared the same activity with the respondent. -9 no data

TRANSIT CODE

A Automobile   B Bicycle   N No significant change of location   P Pedestrian   T Public Transportation   W Waiting   O Other Transportation Means   Z no data

INTERNATIONAL CODING [INT'L. CODE]

[See Table C1, pp. 200-211 in Brian L. Kinsley and Terry O'Donnell, **Marking Time: Methodology Report of the Canadian Time Use Pilot Study—1981,** Volume 1 of **Explorations in Time Use,** Ottawa: 1983, Government of Canada Department of Communications and Employment and Immigration Canada.]

The following are additions to the coding scheme in Kinsley and O'Donnell:

432 light beverages or snacks
492 waiting, queuing (personal care)
692 waiting, queuing (organizational)
992 waiting, queuing (media & passive leisure)
999 no activity recorded

PERCEPTUAL-FUNCTIONAL CODING

Mode of Social Intercourse [SOC/IN]

IP Interactive and ComPetitive
IO Interactive and Co-Operative
IS IntroSpective
RC ReCeptive
ZZ no data

Muscular Motility [MOT]
(These are ascending ordinal measures of motility.)

1 required minimal exercise of muscles
2 required moderate exercise of muscles
3 required vigorous exercise of muscles
-9 no data

Social Tenure of Space Required [TEN]
(These are descending ordinal measures of privacy.)

1 private space   **2** group space   **3** public space   **-9** no data

Indoors-Outdoors [IND/OU]

IA Indoors Away from the dwelling, including inside an Automobile
IB In dwelling Bedroom
ID In dwelling Dining room or dining area attached to the living room
IE In dwelling dEn
IF In dwelling Family room, music room or library
IG In dwelling Garage or carport
IH In dwelling Hobby room

IK In dwelling Kitchen
IL In dwelling Living room or front room
IN In dwelling greeNhouse
IP In dwelling glassed Porch or solarium
IR In dwelling Rumpus or Recreation room
IS In dwelling Shop or workbench area
IT In dwelling dineTte or eating nook attached to the kitchen
IU In dwelling Utility or laundry room or area
IV In dwelling teleVision room
IW In dwelling seWing room
IX Inside the dwelling, with room or area unspecified
IO In Other dwelling rooms or areas—

> Bathrooms, halls and closets, which were not routinely sur-
> veyed, would be included under this category if used for some
> special purpose: such as a bathroom used as a darkroom, a hall
> which includes a telephone, or a closet which functions as a
> hobby area.

OA Outdoors Away from the dwelling
OD Outdoors associated with the Dwelling, otherwise unspecified
OP On dwelling Patio, sundeck, balcony or gazebo
OY Outdoors in the yard or garden associated with the dwelling
BA Both indoors and outdoors Away from the dwelling
BD Both indoors and outdoors associated with the Dwelling
ZZ no data

Work-Leisure [WRK/LE]:

LE LEisure
MX a roughly equal MiXture of work and leisure
ML a Mixture but more like Leisure
MW a Mixture but more like Work
NE NEither work nor leisure
WO WOrk
ZZ no data

SATISFACTION CODING

The three-digit International Coding Scheme (above) is used to identify the
activity which was most satisfying to the respondent. The following are addi-
tions to the coding scheme in Kinsley and O'Donnell:

998 all activities were equally satisfying
999 no activities were satisfying

TYPICALITY CODING

1 very typical
2 fairly typical

3 not very typical
4 not at all typical
-9 no data

TRANSIT STRIKE CODING

TRANSIT TRIPS PER MONTH

This is simply the respondent's estimate of the average number of return transit trips which he took per month in 1984 before the transit strike.
-8 The transit strike was over by the diary day.
-9 no data

TRANSIT STRIKE EFFECT

The first letter codes the kind of effect:
D made it Difficult for me to...
E Enabled me to...
F Forced me to...
P Prevented me from...
N No effect on my day
Z no data

The two numeric digits constitute the International Code which denotes the affected activity, but with only two-digit resolution.
00 no data or not applicable

LOCATION OR HOUSING TYPE ACTIVITY LIMITATION CODING

LIMITATION
N No
Y Yes
Z no data

ACTIVITY LIMITATION

The first letter identifies the source of the activity limitation:
C A City location gives poor access to the desired activities.
S A Suburban location gives poor access to the desired activities.
T The desired activities are limited by the respondent's housing Type.
N There is no limitation of desired activities because of the respondent's location or housing type.
Z no data

The two numeric digits constitute the International Code which denotes the major activity which is limited, but with only two-digit resolution.
00 no data or not applicable

A P P E N D I X   D
HOUSING HISTORY FORM AND CODING SCHEME

RESPONDENT |‾|‾|‾|‾|
NUMBER: |_|_|_|_|

Now I'd like to ask you a few things about your housing and travelling to work in the past.

a) First of all, during what period of time [ELICIT YEAR RANGE] did your own household have the largest number of members? How many people were in your household during that period?

YEAR 1   YEAR 2   HOUSEHOLD NUMBER 1 & 2

YEAR |1| | | | | |1| | | | | | | | |
RANGE: |_|_|_|_| TO |_|_|_|_| |_|_|_|

[IF HOUSEHOLD NUMBER IS 01, GO TO m).]----------->----------------

b) Where did you live in the year _____ / [NAME YEAR 2] when your household last had its largest number of members?

CITY |‾‾‾‾‾‾‾‾| PROVINCE |‾|‾| COUNTRY |‾‾‾‾|
2:   |_____| 2: |_|_| 2: |____|

c) [UNLESS THE ANSWER IS OBVIOUS] Was your dwelling in a [CT] city, [SB] a suburb, [IT] an isolated town, or [CN] in the country in _____ [NAME YEAR 2]? [CODE 'UN' IF THE SETTLEMENT TYPE IS UNKNOWN.]

SETTLEMENT CODE 2: |‾|‾|‾|
                    |_|_|_|

d) Was your dwelling an apartment, a single house, a mobile home, or what? [IF THE RESPONSE IS 'AN APARTMENT', ASK:] Did the apartment building have 5 or more stories?

DWELLING 2 |‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾| STRUCTURE |‾|‾|
STRUCTURE: |_____| 2 CODE: |_|_|

e) Were you employed during most of _____ [NAME YEAR 2]? [IF NOT, GO TO f).]------->------------>------------
[IF SO] About how far did you normally travel to work?
How did you normally travel to work?

|‾‾‾‾‾‾‾‾| |‾|‾|‾| |‾‾‾‾‾‾‾‾‾‾‾| |‾|‾|
|_____| |_|_|_| |_____| |_|_|
 DISTANCE 2   km 2   TRANSIT MODE 2   TRANSIT
                                      CODE 2

f) Have you ever had any dependent children----<------

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living in your household?

Y/N: |___| [IF NO, GO TO m)]---->------

g) [IF YES] Do you have any dependent children now
living in your household? [IF YES] How many?

Y/N: |___| HOUSEHOLD |___|___|---->--------->---
     [IF NO.]   CHILDREN
         ↓

h) During what year did the last of the dependent
children in your household begin living elsewhere?

YEAR 3: | 1 | 9 |___|___| + 1 = YEAR 4: | 1 | 9 |___|___|

i) Where were you living 12 months after the last
of the dependent children in your household began living
elsewhere?

CITY |_____| PROVINCE |___|___| COUNTRY |_____|
4:   |_____| 4: |___|___| 4: |_____|

j) [UNLESS THE ANSWER IS OBVIOUS] Was your dwelling
in a [CT] city, [SB] a suburb, [IT] an isolated town, or
[CN] in the country in _____ [NAME DWELLING YEAR 4]?
[CODE 'UN' IF THE SETTLEMENT TYPE IS UNKNOWN.]

SETTLEMENT CODE 4: |___|___|

k) Was your dwelling an apartment, a single house,
a mobile home, or what? [IF THE RESPONSE IS 'AN APARTMENT',
ASK:] Did the apartment building have 5 or more stories?

DWELLING 4 |_____| STRUCTURE |___|
STRUCTURE: |_____| 4 CODE: |___|

l) Were you employed during most of _____ [NAME
YEAR 4]? [IF NOT, GO TO r).]-------->-------------------->------------
[IF SO] About how far did you normally travel to work? How
did you normally travel to work?

|_____| |___|___| |_____| |___|
|_____| |___|___| |_____| |___|
  DISTANCE 4   km 4   TRANSIT MODE 4   TRANSIT
                                                        CODE 4

m) **In what year did you retire?** <----------<----------<--

YEAR 5: | 1 | 9 | | | +1 = YEAR 6: | 1 | 9 | | |

[IF THE RESPONDENT SAYS THAT HE IS NOT RETIRED, EXPLAIN THAT SOME PEOPLE WHO ARE NOT COMPLETELY RETIRED CAN STILL BE A PART OF THE STUDY. SKIP AHEAD TO THE GENERAL INFORMATION FORM AND ASK QUESTIONS m AND n. IF HIS PRINCIPAL SOURCE OF INCOME CAME DIRECTLY FROM EMPLOYMENT **AND** HE AVERAGED MORE THAN 9 HOURS OF WORK FOR ALL OF THE WEEKS SO FAR IN 1984, TERMINATE THE INTERVIEW AND MARK THE CONTACT FORM WITH RESULT CODE 32.]

n) **Were you living in your current dwelling 12 months after you re-**
tired? [IF SO, GO TO r).]---------->------------->------------->------
'CURRENT DWELLING' SECTION.] [IF NOT:] **Where were you living**
then?

CITY | _____ | PROVINCE | | | COUNTRY | _____ |
6:   | _____ | 6: | | | 6: | _____ |

o) [IF COUNTRY 6 IS CANADA] **What was the address of**
that dwelling?

| | | | | | | | | | | | |
UTM EASTING 6   UTM NORTHING 6

| | | | | | | | | | | | . | | |
FED 6   EA 6   CENSUS TRACT 6

[RECORD THE STREET ADDRESS AS 'DWELLING 6 ADDRESS' ON THE CONFIDENTIAL CONTACT FORM.]

p) [UNLESS THE ANSWER IS OBVIOUS] **Was your dwelling**
in a [CT] city, [SB] a suburb, [IT] an isolated town, or
[CN] in the country in _____ [NAME DWELLING YEAR 6]?
[CODE 'UN' IF THE SETTLEMENT TYPE IS UNKNOWN.]

SETTLEMENT CODE 6: | | |

q) Was your dwelling an apartment, a single house, a mobile home, or what? [IF THE RESPONSE IS 'AN APARTMENT', ASK:] Did the apartment building have 5 or more stories?

DWELLING 6 | _____ | STRUCTURE | ____ |
STRUCTURE: | _____ | 6 CODE: | ____ |

r) Where were you living just before you moved into your present dwelling?

CITY | _____ | PROVINCE | __ | __ | COUNTRY | _____ |
7:   | _____ | 7: | __ | __ | 7: | _____ |

s) [IF COUNTRY 7 IS CANADA] What was the address of that dwelling?

| _ | _ | _ | _ | | _ | _ | _ | _ | _ |
UTM EASTING 7   UTM NORTHING 7

| _ | _ | _ | | _ | _ | _ | | _ | _ | _ . _ | _ |
   FED 7   EA 7   CENSUS TRACT 7

[RECORD THE STREET ADDRESS AS 'DWELLING 7 ADDRESS' ON THE CONFIDENTIAL CONTACT FORM.]

t) [UNLESS THE ANSWER IS OBVIOUS] Was your dwelling in a [CT] city, [SB] a suburb, [IT] an isolated town, or [CN] in the country just before you moved to your present dwelling? [CODE 'UN' IF THE SETTLEMENT TYPE IS UNKNOWN.]

SETTLEMENT CODE 7: | __ | __ |

u) Was your dwelling an apartment, a single house, a mobile home, or what? [IF THE RESPONSE IS 'AN APARTMENT', ASK:] Did the apartment building have 5 or more stories?

DWELLING 7 | _____ | STRUCTURE | ____ |
STRUCTURE: | _____ | 7 CODE: | ____ |

CODING SCHEME FOR HOUSING HISTORY FORM

RECNUM NUM=CURREC(HOUSHIST) USING "ddd"

RESPNUMB NUM USING "ddd"

YEAR1 NUM USING "ddd"
   -9 no data

YEAR2 NUM USING "ddd"
   -9 no data

HSHLDNUM NUM USING "dd"
   -9 no data

CITY2, CITY4, CITY6, CITY7 NUM USING "dd ddd" (Census Subdivision Code)
   -4 if outside of British Columbia
   -9 no data

PROVINC2, PROVINC4, PROVINC6, PROVINC7 STR 2 USING "aa"
   AB Alberta
   BC British Columbia
   MB Manitoba
   NF Newfoundland
   NT Northwest Territories
   NS Nova Scotia
   ON Ontario
   PQ Quebec
   SK Saskatchewan
   FL Florida
   WA Washington State
   ZZ no data

COUNTRY2, COUNTRY4, COUNTRY6, COUNTRY7 STR 2 USING "aa"
   CN Canada
   GR Germany (FRG & GDR)
   PH Philippines
   PK Pakistan
   US United States
   ZZ no data

SETTLEM2, SETTLEM4, SETTLEM6, SETTLEM7 STR 2 USING "aa"
   CT city
   CN country
   IT isolated town
   SB suburb
   ZZ no data

DWLSTRC2, DWLSTRC4, DWLSTRC6, DWLSTRC7 STR 1 USING "a"
   A Apartment with 5 stories or more

      M Mobile or other movable dwelling
      O Other multiple dwelling
      S Single detached
      Z no data

KM2, KM4 NUM USING "dd.d km"
      -9 no data

TRANSIT2, TRANSIT4 STR 1 USING "a"
      A Automobile or truck
      B Bicycle
      O Other means of transportation
      T Transit system
      W Walking
      X taXi
      Z no data

DEPEVER STR 1 USING "a"
      Y Yes
      N No
      Z no data

DEPNOW STR 1 USING "a"
      Y Yes
      N No
      Z no data

HSCHILDR NUM USING "dd"
      -9 no data

YEAR3 NUM USING "dd"
      -9 no data

YEAR4 NUM=HOUSHIST.YEAR3+1
      -8 no data

YEAR5 NUM USING "dd"
      -9 no data

YEAR6 NUM=HOUSHIST.YEAR5+1
      -8 no data

EAST6, EAST7 NUM USING "dddd"
      -9 no data

NORTH6, NORTH7 NUM USING "ddddd"
      -9 no data

FED6, FED7 NUM USING "ddd"
      -9 no data

EA6, EA7 NUM USING "ddd"
          −9 no data

CT6, CT7 NUM USING "ddd.dd"
          −9 no data
NOTE LOGIC
          TRUE if there are any notes or comments on this respondent
                    in HSENOTES
          FALSE if there are no notes or comments on this respondent
                    in HSENOTES

CURRENT DWELLING FORM

RESPONDENT |___|___|___|
NUMBER:

Now I'd like to ask about your present housing situation.
a) In what year did you move into your present dwelling?

DWELLING 8 YEAR: |_1_|___|___|___|

b) Is your current address _____? [REFER TO ADDRESS ON CONTACT SHEET.]

DWELLING 8 |___|
ADDRESS MATCH: |___|
              YES or NO

[IF NO, ASK FOR HIS CURRENT ADDRESS AND RECORD IT ON THE CONTACT SHEET. IF IT IS OUTSIDE OF BURNABY, NEW WESTMINSTER, SURREY WITH A 'V4A' FORWARD SORTATION AREA, WEST VANCOUVER WITH A 'V7V' FORWARD SORTATION AREA, OR WHITE ROCK, TERMINATE THE INTERVIEW AND MARK THE CONTACT SHEET WITH RESULT CODE 35. **IF YES**, GO TO c).]

|___|___|___|___| |___|___|___|___|___|
    DWELLING 8   DWELLING 8
    UTM EASTING   UTM NORTHING

|___|___|___| |___|___|___| |___|___|___.|___|___|
   DWELLING 8   DWELLING 8   DWELLING 8
      FED   EA   CENSUS TRACT

c) Is your dwelling an apartment, a single house, a mobile home, or what? [IF THE RESPONSE IS 'AN APARTMENT', ASK:] Did the apartment building have 5 or more stories?

DWELLING 8 |_____| STRUCTURE |___|
STRUCTURE: |_____| 8 CODE: |___|

d) Do you [R] rent or [O] own your present dwelling? [IF THE RESPONDENT MENTIONS SOME OTHER TENURE ARRANGEMENT, WRITE THE DESCRIPTION AND LEAVE THE CODING BLANK.]

TENURE |_____| TENURE |___|
DESCRIPTION: |_____| CODE: |___|

e) Would you please take me on an imaginary tour of your dwelling? I'd

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like you to tell me what it looks like in general, and then I'd like you to tell me about the different rooms and tell me how you generally use them.

GENERAL DESCRIPTION: _____

POST HOC GENERAL DESCRIPTION CODE: |___|___|___|

ROOM 1 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 1 FUNCTIONAL CODE: |___|___|___|

ROOM 2 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 2 FUNCTIONAL CODE: |___|___|___|

ROOM 3 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 3 FUNCTIONAL CODE: |___|___|___|

ROOM 4 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 4 FUNCTIONAL CODE: |___|___|___|

ROOM 5 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 5 FUNCTIONAL CODE: |___|___|___|

ROOM 6 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 6 FUNCTIONAL CODE: |___|___|___|

ROOM 7 FUNCTIONAL STRUCTURE: _____

POST HOC ROOM 7 FUNCTIONAL CODE: |___|___|___|

ROOM 8 FUNCTIONAL STRUCTURE: _____

_____

POST HOC ROOM 8 FUNCTIONAL CODE: |___|___|___|

ROOM 9 FUNCTIONAL STRUCTURE: _____

_____

POST HOC ROOM 9 FUNCTIONAL CODE: |___|___|___|

ROOM 10 FUNCTIONAL STRUCTURE: _____

_____

POST HOC ROOM 10 FUNCTIONAL CODE: |___|___|___|

      f) **What are two advantages of having your dwelling in its particular location?**

LOCATION ADVANTAGE 1
    DESCRIPTION: _____

LOCATION ADVANTAGE 2
    DESCRIPTION: _____

POST HOC LOCATION ADVANTAGE 1 CODING: |___|___|___|	POST HOC LOCATION ADVANTAGE 2 CODING: |___|___|___|

      g) **What are two disadvantages of having your dwelling in its particular location?**

LOCATION DISADVANTAGE 1
    DESCRIPTION: _____

LOCATION DISADVANTAGE 2
    DESCRIPTION: _____

POST HOC LOCATION DISADVANTAGE 1 CODING: |___|___|___|	POST HOC LOCATION DISADVANTAGE 2 CODING: |___|___|___|

    h) **What are two advantages of your dwelling itself, without regard to**

its location?

DWELLING ADVANTAGE 1
    DESCRIPTION: _____

_____

DWELLING ADVANTAGE 2
    DESCRIPTION: _____

_____

POST HOC   POST HOC
DWELLING   DWELLING
ADVANTAGE 1 | | | | | ADVANTAGE 2 | | | | |
   CODING: |_|_|_|_| CODING: |_|_|_|_|
        i) What are two disadvantages of your dwelling itself, without regard
to its location?
DWELLING DISADVANTAGE 1
    DESCRIPTION: _____

_____

DWELLING DISADVANTAGE 2
    DESCRIPTION: _____

_____

POST HOC   POST HOC
DWELLING   DWELLING
DISADVANTAGE 1 | | | | | DISADVANTAGE 2 | | | | |
   CODING: |_|_|_|_| CODING: |_|_|_|_|
        j) What were the two most important reasons why you moved from your
last dwelling to your present one?

MOVING REASON 1
    DESCRIPTION: _____

_____

MOVING REASON 2
    DESCRIPTION: _____

_____

POST HOC   POST HOC
MOVING REASON 1 | | | | | MOVING REASON 2 | | | | |
   CODING |_|_|_|_| CODING |_|_|_|_|

CODING SCHEME FOR CURRENT DWELLING FORM (CURDWELL.ITB)

RECNUM NUM=CURREC(CURDWELL) USING "ddd"

RESPNUMB NUM USING "ddd"

YEARS NUM USING "ddd"
       -9 no data

ADDMATCH STR 1 USING "a"
       Y Yes
       N No
       Z no data

POSTCODE STR 7 USING "ada dad"
       Z9Z 9Z9 no data

UTMEAST NUM USING "dddd"
       -9 no data

UTMNORTH NUM USING "ddddd"
       -9 no data

FED NUM USING "ddd"
       -9 no data

EA NUM USING "ddd"
       -9 no data

CT NUM USING "ddd.dd"
       -9 no data

STRUCTUR STR 1 USING "a"
       A Apartment with 5 stories or more
       M Mobile or other movable dwelling
       O Other multiple dwelling
       S Single detached
       Z no data

TENURE STR 1 USING "a"
       O Owner-occupied
       R Rented or leased
       C Co-operative ownership
       Z no data

GENDESCR STR 2 USING "aa"
   Only the first two emphases are coded. Both characters are coded with combinations of the following, in the order in which they were mentioned.
       A emphasis on Aesthetic qualities
       F emphasis on Functional qualities

     G emphasis on the Garden or yard
     N emphasis on the dwelling iNterior
     S emphasis on the building Structure, dimensions, etc.
     X emphasis on the building eXterior
     O Other emphases, specified in CURNOTES.NOTES
     Z no data

ROOM1 through **ROOM10** and **MOREROOM.EXTRROOM** STR 3 USING "aaa"
  The first digit denotes the room or area in the dwelling as follows:
     A Ancillary building detached from the dwelling
     B Bedroom .
     C Carport
     D Dining room or dining area attached to the living room
     E dEn
     F Family room, music room or library
     G Garage
     H Hobby room
     K Kitchen
     L Living room or front room
     P Patio, sundeck, balcony or gazebo
     R Rumpus or Recreation room
     S Shop or workbench area
     T dineTte or eating nook attached to the kitchen
     U Utility or laundry room or area
     V teleVision room
     W seWing room
     X greenhouse or solarium
     O Other rooms or areas, specified in CURNOTES.NOTES
         [Bathrooms, halls and closets, which were not routinely sur-
         veyed, would be included under this category if used for some
         special purpose: such as a bathroom used as a darkroom, a hall
         which includes a telephone, or a closet which functions as a
         hobby area.]
     Z no data
  Up to two functions of each room or area are coded by the second and third
characters. Both characters are coded with combinations of the following, in
the order in which they were mentioned:
     A listening to the radio or other Audio media
     B Bookkeeping and other writing activity
     D Dining with guests or eating other special meals
     E routine Eating
     F entertaining Friends or visiting relatives
     G storaGe
     H Hobby, active musical or artistic activity
     I Idle or seldom used
     M household Maintenance activity
     N functions which are Normal to the room or area, such as
         sleeping in a bedroom or preparing food in the kitchen
     P enjoying the firePlace
     R Relaxing or Reading

S Sleeping, including daytime napping
T talking on the Telephone
V watching teleVision
U providing gUests with sleeping accommodation
X eXercising
O Other functions, specified in CURNOTES.NOTES
Z no data

MORROOMS LOGIC

TRUE if the respondent mentioned more than 10 rooms or
areas--In this event, each extra room is recorded as a sepa-
rate record in MOREROOM.ITB, with the variable,
MOREROOM.EXTRROOM, coded in the same fashion as CURDWELL.ROOM1
through CURDWELL.ROOM10.

FALSE if the respondent mentioned 10 or fewer rooms or
areas

LOCADV1 and **LOCADV2** STR 2 USING "aa"
Only the first four advantages mentioned are coded, with two characters each
in LOCADV1 and LOCADV2. The four characters are coded with combinations of the
following, in the order in which they were mentioned:

B Beautiful or otherwise positive neighbourhood
C good Climate--If a comparison is made, it is specified
      in CURNOTES.NOTES.
F good access to Family
M good access to Medical facilities
N No advantages
P Pleasant neighbours
Q Quiet street
R good access to Recreational facilities or amenities
S good access to Shopping
T good access to the Transit system
V good View
U Unspecified general advantages
W good access to the respondent's house of Worship
O Other advantage: specified in CURNOTES.NOTES
Z no data

LOCDIS1 and **LOCDIS2** STR 2 USING "aa"
Only the first four disadvantages mentioned are coded, with two characters
each in LOCDIS1 and LOCDIS2. The four characters are coded with combinations
of the following, in the order in which they were mentioned:

C unfavourable Climate
F difficult access to Family
G uspecified General disadvantages
M difficult access to Medical facilities
N No disadvantages
R difficult access to Recreational facilities or amenities
S difficult access to Shopping
T difficult access to Transit

    U Unpleasant neighbours
    W difficult access to respondent's house of Worship
    X noisy street
    O Other disadvantage: specified in CURNOTES.NOTES
    Z no data

DWLADV1 and **DWLADV2** STR 2 USING "aa"

Only the first four advantages mentioned are coded, with two characters each in DWLADV1 and DWLADV2. The four characters are coded with combinations of the following, in the order in which they were mentioned:

    A Aesthetically-pleasing aspects
    B Bright or well-illuminated interior
    C Convenient or Comfortable interior design—If examples
          were mentioned, they are specified in
          CURNOTES.NOTES.
    D good Drainage
    F good household Facilities
    G good Garden or yard
    H well-Heated and/or well-insulated
    I Inexpensive
    L appropriately Large size of dwelling and/or
          garden
    M low Maintenance problems for the respondent
    N No advantages
    P good Privacy
    R dwelling designed and/or built by the Respondent
    S appropriately Small size of dwelling and/or garden
    U Unspecified general advantages
    X good security and/or safety
    Y plentY of room—If activities were mentioned, they are
          specified in CURNOTES.NOTES.
    O Other advantages, specified in CURNOTES.NOTES.
    Z no data

DWLDIS1 and **DWLDIS2** STR 2 USING "aa"

Only the first four disadvantages mentioned are coded, with two characters each in DWLDIS1 and DWLDIS2. The four characters are coded with combinations of the following, in the order in which they were mentioned:
    D interior Design problems other than stairs
    E Expensive
    G lack of or inadequate Garden
    M Maintenance problems
    N No disadvantages
    P lack of adequate Privacy
    S Stairs difficult to manage
    U Unspecified general disadvantages
    X security or safety problems
    O Other disadvantages, specified in CURNOTES.NOTES.
    Z no data

MOVEREA1 STR 2 USING "aa"

These are the 'push' reasons for the residential move. This variable is used to code two reasons that the respondent moved **from** the former dwelling. Both characters are coded with combinations of the following, in the order in which they were mentioned:

       D stairs Difficult to manage because of disability or
           infirmity of respondent or other household member—Whether the
           problem was with the respondent or not is clarified in the
           variables GENERAL.DWLHLTH and GENERAL.DHLTHCD.

       E too Expensive

       F Forced out by eminent domain, major land-use change or
           eviction by landlord

       G dissatisfaction with General living conditions

       I not enough Interior space

       J Job transfer

       M too much effort needed for Maintenance

       P neighbourhood and/or Privacy problems

       S dissatisfaction with Structural type

       T dissatisfaction with Tenure

       X security or safety problems

       Y dwelling too old

       O Other reasons, specified in CURNOTES.NOTES.

       Z no data

MOVEREA2 STR 2 USING "aa"

These are the 'pull' factors for the residential move. Two reasons for the move **to** the current dwelling are coded in this variable, in the order in which they were mentioned.

       A Anticipating retirement

       B dwelling designed and/or Built by respondent

       C good Climate

       D good Drainage

       E good Environment or situation for raising children
           or for caring for another dependent

       F good access to Family

       G good Garden or yard

       H good access to sHopping

       I good Investment opportunity

       J closer to Job

       L appropriately Large size of dwelling and/or
           garden

       N returned to former Neighbourhood or region

       P good Privacy

       Q Quiet neighbourhood

       R good access to Recreational facilities or
           amenities

       S appropriately Small size of dwelling and/or
           garden

       T dwelling owned by a relative

       V good View

W journey to Work problem no longer present
X employment opportunity
Y less expensive
O Other reasons, specified in CURNOTES.NOTES.
Z no data

NOTE LOGIC

> **TRUE** if there are any comments or notes which cannot
> otherwise be accommodated by the coding scheme within
> CURDWELL, these will be relegated to the separate file,
> CURNOTES, in the CURNOTES.NOTES field
>
> **FALSE** if the coding of this record in CURDWELL requires no
> supplementary comments or notes

A P P E N D I X   F

GENERAL INFORMATION FORM AND CODING SCHEME

RESPONDENT |___|___|___|
NUMBER: |___|___|___|

Now I need to ask some general questions about you and your household. As with the other information which you have provided, your answers will be used only for statistical purposes and will not be attributed to you.

a) So first, where were your born?

BIRTH |_____| BIRTH |___|___| BIRTH |_____|
CITY: |_____| PROVINCE: |___|___| COUNTRY: |_____|

b) In what year was that?   BIRTH |_1_|___|___|___|___|
                            YEAR: |___|___|___|___|___|

c) What is the language you first learned in childhood and still understand?

                                              MOTHER
MOTHER |_____| TONGUE |___|___|___|
TONGUE: |_____| CODE: |___|___|___|

d) [THIS QUESTION SHOULD BE ASKED ONLY IF THE INFORMATION HAS NOT BEEN UMAMBIGUOUSLY ELICITED EARLIER IN THE INTERVIEW, BUT CODE IT NOW.] Who are the other members of your household and how are they related to you? [IF THE GEN-ERATION AND SEX CODES ARE NOT OBVIOUS, ASK:] Is that person about your same generation or part of a generation which is older or younger than yours? [IF THE RESPONDENT NEEDS SOME CLARIFICATION ABOUT GENERATIONS, THEN A DIFFERENCE OF TWENTY YEARS OR MORE CAN BE USED TO DISTINGUISH GENERATIONS. IRRESPECTIVE OF AGE DIFFERENCES, HOWEVER, SUCH PEOPLE AS WIVES, SIBLINGS, PARENTS, CHILD-REN, IN-LAWS AND STEP-RELATIVES SHOULD BE CODED WITH THE GENERATION NORMAL TO THEIR STATUS.] Is that person a male or a female? [IF THE RESPONDENT LIVES ALONE, WRITE 'LIVES ALONE' FOR MEMBER 1 AND 'N N N' FOR THE MEMBER 1 CODE.]

MEMBER |_____| MEMBER 1 |___|___|___|
1:       |_____| CODE: |___|___|___|
                                             REL GEN SEX

MEMBER |_____| MEMBER 2 |___|___|___|
2:       |_____| CODE: |___|___|___|
                                             REL GEN SEX

MEMBER |_____| MEMBER 3 |___|___|___|
3:       |_____| CODE: |___|___|___|
                                             REL GEN SEX

MEMBER |_____| MEMBER 4 |___|___|___|
4:       |_____| CODE: |___|___|___|

REL GEN SEX

MEMBER | _____ | MEMBER 5 | ___ | ___ | ___ |
5:     | _____ | CODE: |___|___|___|
                                               REL GEN SEX

MEMBER | _____ | MEMBER 6 | ___ | ___ | ___ |
6:     | _____ | CODE: |___|___|___|
                                               REL GEN SEX

MEMBER | _____ | MEMBER 7 | ___ | ___ | ___ |
7:     | _____ | CODE: |___|___|___|
                                               REL GEN SEX

MEMBER | _____ | MEMBER 8 | ___ | ___ | ___ |
8:     | _____ | CODE: |___|___|___|
                                               REL GEN SEX

MEMBER | _____ | MEMBER 9 | ___ | ___ | ___ |
9:     | _____ | CODE: |___|___|___|
                                               REL GEN SEX

```
+-----------------------------------------------------------------+
|                       MEMBER CODING                             |
| Member Relationship to Respondent [REL]                         |
| F=Friend  W=Wife  S=Stranger  R=Relative (including in-law,     |
|  guardian,  step-relationships)  U=Unknown relationship  N=No   |
|  other members                                                  |
|                                                                 |
| Member Generation [GEN]                                         |
| A=Ascending generation  D=Descending generation  S=Same         |
|  generation as respondent   U=Unknown generation   N=No other   |
|  members                                                        |
|                                                                 |
| Member Sex [SEX]                                                |
| M=Male    F=Female    U=Unknown sex    N=No other members       |
+-----------------------------------------------------------------+
```

[ASK THE FOLLOWING QUESTION ONLY IF ITS ANSWER HAS NOT BEEN UNAMBIG-
UOUSLY ELICITED EARLIER IN THE INTERVIEW, BUT CODE IT NOW.]
                                          MARITAL
      e) What is your marital status?   STATUS | ___ |
                                          CODE: |___|

M=Married (including common law)   S=Single (never married)   W=Widowed
U=Unknown marital status   P=seParated   D=Divorced

      f) Was the choice of your present dwelling limited in any way because
of your health?

| ___ |
|___| g) [IF SO:] How was your choice limited? _____
 Y/N

POST HOC
DWELLING CHOICE
HEALTH LIMITATION
    CODE: | __ | __ | __ |

h) Are you limited in any daily activities because of your health?

| __ |
| __ | i) [IF SO:] How are your activities limited? _____
Y/N

POST HOC
DAILY ACTIVITIES
HEALTH LIMITATION
    CODE: | __ | __ | __ |

j) Considering all of your household income during the year 1983, which of the following statements best applies to you?

[1] I had to do without many things that I needed.
[2] I had the things that I needed, but none of the extras.
[3] I had the things that I needed, and a few of the extras.
[4] I had the things that I needed, and any extras I wanted.
[5] I had the things that I needed, and any extras I wanted, and I still had money left over to save or invest.

HOUSEHOLD INCOME | __ |
  ADEQUACY CODE: | __ |

k) Was your approximate total household income before taxes in 1983 $20 000 or more, or was it less than $20 000?

[IF LESS THAN $20 000:] Was   [IF MORE THAN $20 000:] Was
it $10 000 or more, or less   it $40 000 or more, or less
than $10 000?   than $40 000?

[IF LESS THAN $10 000:] Was   [IF LESS THAN $40 000:] Was
it $5 000 or more, or less   it $30 000? or more, or less
than $5 000?   than $30 000?

HOUSEHOLD | __ | | $0- $4 999 = 1 | $20 000-$29 999 = 4 |
  INCOME | __ | | $5 000- $9 999 = 2 | $30 000-$39 999 = 5 |
   CODE: | __ | | $10 000-$19 999 = 3 | $40 000+   = 6 |

1) Without getting into specific amounts, what are the four largest sources of your current personal income, starting with the largest? [CODE WITH RANK ORDER, WITH THE LARGEST SOURCE = 1.]

|___| Canada Pension Plan |___| Quebec Pension Plan

|___| Old Age Security |___| Guaranteed Income Supplement

|___| Other Pensions & Annuities |___| Investments

|___| GAIN |___| Other Government Sources

|___| Employment Income |___| Other Sources (specify) _____

m) [IF EMPLOYMENT INCOME IS MENTIONED, ASK:] So far in 1984 through last Saturday, during how many weeks have you worked for pay? On average, how many hours did you work for pay during each of those weeks?

|__|__| WEEKS |__|__| AVERAGE
                                         HOURS/WEEK

n) Just before your retired, in what industry or field were you working?

_____

What was your specific job? _____

INDUSTRY/FIELD |__|__|__|__|__| JOB |__|__|__|__|__|
        CODE: CODE:

o) How many grades or years of primary and secondary education have you completed? How many years have you studied at the university or other post-secondary level? [IF ANY MENTIONED:] What was the highest certificate, diploma or degree that you have earned?

                                POST-
PRIMARY/SECONDARY |__|__| SECONDARY |__|__| DEGREE |__|
    YEARS or GRADES: YEARS: CODE:

H=High school diploma   C=Certificate or other pre-baccalaureate degree
B=Bachelor   M=Master or other professional graduate degree
D=Doctor   O=Other (specify) _____ U=Unknown]

CODING SCHEME FOR GENERAL INFORMATION FORM (GENERAL.ITB)

RESPNUMB NUM USING "ddd"

BIRTHCTY NUM USING "dd ddd" (Census Subdivision Code)
      -4 if outside of British Columbia
      -9 no data

BIRTHPRV STR 2 USING "aa"
      AB Alberta
      BC British Columbia
      MB Manitoba
      NB New Brunswick
      NS Nova Scotia
      ON Ontario
      PE Prince Edward Island
      PQ Quebec
      SK Saskatchewan
      IL Illinois
      MI Michigan
      EN England
      NI Northern Ireland
      SC Scotland
      WA Wales
      ZZ no data

BIRTHCNT STR 2 USING "aa"
      CN Canada
      CZ Czechoslovakia
      DN Denmark
      IT Italy
      NO Norway
      UG Uganda
      UN Ukraine
      UK United Kingdom
      US United States
      ZZ no data

MOTHTONG STR 3 USING "aaa"
      CAN Cantonese
      DAN Danish
      ENG English
      FIN Finnish
      FRN French
      GER German
      GUJ Gujarati
      ITL Italian
      LET Letzeburgesch
      NOR Norwegian
      SLO Slovak
      UKR Ukrainian

MEM1REL AND **MEM2REL** STR 1 USING "a"
>   **F** Friend
>   **N** No other members
>   **R** Relative (including in-law, guardian and step-
>   relationships, and excluding wife)
>   **S** Stranger
>   **W** Wife
>   **Z** no data

MEM1GEN AND **MEM2GEN** STR 1 USING "a"
>   **N** No other members
>   **O** Older generation than the respondent
>   **S** Same generation as the respondent
>   **Y** Younger generation than the respondent
>   **Z** no data

MEM1SEX AND **MEM2SEX** SEX 1 USING "a"
>   **F** Female
>   **M** Male
>   **N** No other members
>   **Z** no data

MOREMEM LOGIC
>   **TRUE** if there are more than two household members besides
>   the respondent—In this case, the data on member number, rela-
>   tionship, generation and sex are recorded in MEMBERS.
>   **FALSE** if there are two household members or less besides
>   the respondent

MARITAL STR 1 USING "a"
>   **D** Divorced
>   **M** Married
>   **P** seParated
>   **S** Single (never married)
>   **W** Widowed
>   **Z** no data

DWLHLTH STR 1 USING "a"
>   **N** No
>   **Y** Yes
>   **Z** no data

DHLTHCD STR 4 USING "n aa"
>   The first digit indicates the degree of housing choice limitation:
>   **1** minor housing choice limitation
>   **2** moderate housing choice limitation
>   **3** severe housing choice limitation
>   **8** no housing limitation
>   **9** no data on degree of housing choice limitation
>   The second and third characters indicate up to two of the sorts of

limiting adjustments which the respondent's health required in choosing his present dwelling, as follows:

      F special Fixtures such as handrails

      H better Heating and/or insulation

      L Location closer to medical facilities

      M fewer Maintenance responsibilities

      N No housing limitation

      S elimination or lessening of Stairs

      O Other limiting adjustment, specified in CURRNOTES.NOTES

      Z no data

ACTHLTH STR 1 USING "a"

      N No

      Y Yes

      Z no data

AHLTHCD NUM USING "n nn"

The first digit indicates the degree of activity limitation:

      1 minor activity limitation

      2 moderate activity limitation

      3 severe activity limitation

      -8 no activity limitation

      -9 no data on degree of activity limitation

The second and third digits consist of the 2-digit international code (See Kinsley and O'Donnell 1983: 142-145.) which best describes the type of activity which the respondent is no longer able to pursue because of his health situation.

NEEDS NUM USING "dd"

      1 I had to do without many things that I needed.

      2 I had the things that I needed, but none of the extras.

      3 I had the things that I needed, and a few of the extras.

      4 I had the things that I needed, and any extras I wanted.

      5 I had the things that I needed, and any extras I wanted, and I still had money left over to save or invest.

      -9 no data

INCOME NUM USING "dd"

      1 $0-$4 999

      2 $5 000-$9 999

      3 $10 000-$19 999

      4 $20 000-$29 999

      5 $30 000-$39 999

      6 $40 000+

      -9 no data

CANPENS, OLDAGES, OTHPENS, EMPLOYM, QUEPENS, GIS, INVEST, OTHGVMT AND **OTHSOUR** NUM USING "dd"

These fields, denoting Canada Pension Plan, Old Age Security, Other Pensions & Annuitites, Employment Income, Quebec Pension Plan, Guaranteed Income Supplement, Investments, Other Government Sources and Other Sources, re-

spectively, are designated by ranks from 1 to 4, with 1 being the largest income source, 2 the second largest, and so forth. If OTHSOUR is ranked, it is specified in GENNOTES.NOTES.
        -9 no data

WEEKS NUM USING "dd"
        This variable gives the number of integer weeks during which the respondent was working for pay in 1984.
        -9 no data

HOURS NUM USING "dd"
        This variable gives the average number of integer hours during each week of 1984 in which the respondent worked for pay.
        -9 no data

INDUSTRY NUM USING "dddd"
        This variable gives the four-digit Standard Industrial Classification Code according to the December, 1980 Statistics Canada scheme which best describes the industry or field in which the respondent was working just before retirement.
        -9 no data

JOB NUM USING "dddd"
        This variable gives the four-digit Canadian Classification of Occupations according to the July, 1971 Department of Manpower and Immigration (now Employment and Immigration) scheme which best describes the specific job which the respondent did just before retirement.
        -9 no data

PRIMSEC NUM "dd"
        This variable gives the integer number of grades or years of primary and secondary education which the respondent has completed.
        -9 no data

POSTSEC NUM "dd"
        This variable gives the integer number of years or full-time equivalent years which the respondent has spent in university or other post-secondary formal education.
        -9 no data

DEGREE STR 1 USING "a"
        B Bachelor's degree
        C Certificate or other pre-baccalaureate degree
        D Doctor's degree
        H High school or matriculation diploma
        M Master's or other professional graduate degree
        O Other formal attainment, specified in GENNOTES.NOTES
        Z no data

NOTE LOGIC
        TRUE if there are any notes or comments for this respondent

                in GENNOTES
       FALSE if there are no notes or comments for this respondent
                in GENNOTES

RECNUM NUM=CURREC(GENERAL) USING "ddd"
       This variable yields the record number in the GENERAL.ITB file.

A P P E N D I X   G

PRIMARY ACTIVITY DURATION BY COMPLETE TAXONOMY

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
11	regular work	6	118.3	3	236.7
12	employed work at home	4	46.3	2	92.5
30	travel at work	1	15.0	1	15.0
90	travel to/from work	5	25.0	3	41.7
100	preparing food, table	97	24.4	52	45.5
101	preparing food for children	1	30.0	1	30.0
110	meal cleanup	39	14.9	27	21.6
120	routine indoor chores	27	76.2	24	85.8
130	routine outdoor chores	15	32.5	10	48.8
140	laundry/ironing/ folding	6	31.7	3	63.3
160	repairs – general	1	10.0	1	10.0
161	interior repairs	1	20.0	1	20.0
162	exterior repairs	6	44.2	4	66.3
163	car care/mainte- nance	7	79.3	7	79.3
164	home improvements	12	102.6	5	246.2
171	gardening	51	85.5	29	150.4
172	pet care	6	35.3	5	42.4
173	care of house plants	1	10.0	1	10.0
180	heat/water upkeep	1	10.0	1	10.0
191	other indoor housework	1	2.0	1	2.0
192	other outdoor housework	2	5.0	1	10.0
193	household paper- work, mail	5	48.0	3	80.0
200	baby care (under 5)	1	90.0	1	90.0
240	indoor child entertaining/ play	1	45.0	1	45.0
270	other child care	1	30.0	1	30.0
278	babysitting (un- paid)	1	60.0	1	60.0

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
280	conversation with, reprimands to children	1	2.0	1	2.0
300	shopping for everday needs	10	35.5	10	35.5
301	grocery shopping	27	24.7	23	29.0
302	all other shopping	11	15.3	10	16.8
310	durable goods shopping	9	31.0	8	34.9
320	personal care shopping	6	30.5	6	30.5
330	medical care for self shopping	3	3.0	2	4.5
340	administrative services	3	26.3	3	26.3
341	financial services	10	22.6	9	25.1
342	government services	1	5.0	1	5.0
350	repair services	1	15.0	1	15.0
351	auto services	8	18.3	7	20.9
352	clothes repair/ cleaning services	1	5.0	1	5.0
353	appliances repair services	2	14.0	2	14.0
354	household repair services	2	15.0	2	15.0
360	waiting, queuing while shopping	14	31.5	11	40.1
380	errands, not applicable goods or services	1	20.0	1	20.0
390	shopping-related travel	101	11.2	46	24.7
400	washing and dressing	166	24.8	86	48.0
410	medical care	1	15.0	1	15.0
411	medical care-self	6	25.5	4	38.3
420	helping adults	1	180.0	1	180.0
422	help to relatives outside of household	3	38.3	2	57.5

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
423	help to friends/ neighbours	3	121.7	3	121.7
424	help to others	1	10.0	1	10.0
430	meals at home	236	36.0	91	93.5
432*	light beverages or snacks	58	34.3	38	52.3
440	restaurant meals	2	37.5	2	37.5
450	night sleeping/in bed	181	253.4	91	504.0
460	day sleeping/in bed	2	52.5	2	52.5
470	naps or resting/ not in bed	19	76.1	18	80.3
480	private, other personal	2	35.0	2	35.0
485	drinking alcohol- ic beverages	14	33.6	12	39.2
490	personal care-re- lated travel	10	11.1	8	13.9
492*	personal care-re- lated waiting, queuing	7	40.7	6	47.5
498	help-related trav- el	46	16.9	16	48.6
630	volunteer work: helping activi- ties	8	77.3	4	154.5
642	other religious: social, meals	2	75.0	1	150.0
643	church group not helping: meeting	1	70.0	1	70.0
650	religious services	3	75.0	3	75.0
652	individual reli- gious practice	4	111.3	2	222.5
660	fraternal and social organiza- tions	3	53.3	3	53.3
680	other organiza- tional	1	15.0	1	15.0

* The codes designated with asterisks [*] were designated by the author for this study, and were not used for the 1981 Canadian Time Use Pilot Study (Kinsley and O'Donnell 1983).

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
690	organization-related travel	8	14.0	6	18.7
692*	organization-related waiting, queuing	1	15.0	1	15.0
698	organizational helping-related travel	6	17.5	2	52.5
700	attending sports event	1	15.0	1	15.0
711	exhibitions, fairs	1	390.0	1	390.0
750	entertaining or visits with friends	2	42.5	1	85.0
755	restaurant meals: social	7	52.4	7	52.4
760	parties including meals	1	285.0	1	285.0
780	other gatherings	1	15.0	1	15.0
790	away-from-dwelling entertainment-related travel	9	19.8	7	25.4
792	away-from dwelling entertainment-related travel	1	30.0	1	30.0
802	tennis	1	130.0	1	130.0
803	golf	4	135.0	4	135.0
804	swimming	2	67.5	2	67.5
805	curling	1	80.0	1	80.0
806	bowling, lawn bowling	6	108.3	5	130.0
808	exercises	10	23.0	7	32.9
817	pleasure driving	2	50.0	1	100.0
820	walking, general	1	10.0	1	10.0
821	walking for pleasure	25	61.5	18	85.4
824	bicycling	4	9.3	4	9.3
825	motorcycling	2	5.0	1	10.0
830	hobbies	5	114.0	3	190.0
833	leisure equipment repair	6	60.0	5	72.0
834	working on a collection	1	38.0	1	38.0

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
835	carpentry, wood-work	8	121.3	6	161.7
844	feeding wild birds	2	12.5	1	25.0
850	artistic hobbies	1	60.0	1	60.0
864	dancing	1	120.0	1	120.0
870	games, cards, etc.	26	79.0	19	108.2
880	other active leisure	3	64.3	3	64.3
890	travel related to participant leisure activities	9	9.2	8	10.4
900	radio listening	21	44.2	15	61.9
904	radio play listening	1	45.0	1	45.0
905	radio news, local, unspecified	5	35.4	5	35.4
907	radio sports	1	180.0	1	180.0
908	radio interview/open-line	3	71.7	3	71.7
910	TV general, unspecified	108	114.9	64	194.0
912	TV musicals, variety, comedy, soaps	7	85.0	6	99.2
913	TV films, movies	4	151.3	4	151.3
914	TV detective, real life	1	70.0	1	70.0
915	TV news	26	51.2	24	55.4
916	TV science, instructional	3	56.7	3	56.7
917	TV sports	13	106.0	11	125.3
918	TV public affairs, documentary	8	106.3	6	141.7
919	TV games, quiz, talk shows	2	52.5	2	52.5
920	listening to recorded audio media	1	120.0	1	120.0
930	reading books (unspecified, general, other)	10	129.4	8	161.8
931	reading science, technical, nonfiction	4	51.3	4	51.3
933	reading mystery	2	97.5	1	195.0

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
937	reading other or unspecified novels	19	55.5	11	95.9
940	reading magazines	13	53.5	10	69.5
942	reading, not specified	21	89.7	16	117.7
950	reading newspaper	66	63.3	47	88.9
960	talking, general	1	195.0	1	195.0
961	telephone conversations	7	9.3	6	10.8
962	face-to-face conversations	35	54.1	28	67.6
963	household talks, conversations	27	53.3	22	65.5
970	letters, reading, writing	2	97.5	2	97.5
971	reading mail (not letters)	4	128.8	3	171.7
981	relaxing	12	65.0	9	86.7
982	thinking, planning, reflecting	2	45.0	2	45.0
983	doing nothing, 'just sat'	8	53.8	5	86.0
989	other passive leisure	6	34.2	6	34.2
990	passive leisure-related travel	143	16.4	57	41.3
992*	passive leisure-related waiting, queuing	2	20.0	1	40.0
999*	no activity recorded	12	48.3	12	48.3

A P P E N D I X   H

SECONDARY ACTIVITY DURATION BY COMPLETE TAXONOMY

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
100	preparing food, table	3	23.3	3	23.3
120	routine indoor chores	1	15.0	1	15.0
172	pet care	1	15.0	1	15.0
192	other outdoor housework	1	35.0	1	35.0
200	baby care (under 5)	1	360.0	1	360.0
280	conversation with, reprimands to children	1	15.0	1	15.0
302	all other shopping	1	45.0	1	45.0
411	medical care-self	1	25.0	1	25.0
430	meals at home	6	76.7	5	92.0
432*	light beverages or snacks	19	88.7	14	120.4
470	naps or resting/ not in bed	1	150.0	1	150.0
484	smoking	8	81.8	7	93.4
485	drinking alcoholic beverages	6	66.7	5	80.0
630	volunteer work: helping activities	1	20.0	1	20.0
660	fraternal and social organizations	1	105.0	1	105.0
817	pleasure driving	1	22.0	1	22.0
830	hobbies	1	165.0	1	165.0
836	recording tapes	1	60.0	1	60.0
870	games, cards, etc.	3	60.0	2	90.0
880	other active leisure	2	72.5	1	145.0
900	radio listening	95	30.0	31	92.1
901	radio classical music listening	1	15.0	1	15.0
905	radio news, local, unspecified	8	31.6	8	31.6
910	TV general, unspecified	33	65.8	23	94.3

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
912	TV musicals, variety, comedy, soaps	1	60.0	1	60.0
915	TV news	17	36.2	15	41.0
917	TV sports	2	60.0	2	60.0
918	TV public affairs, documentary	2	15.0	2	15.0
920	listening to recorded audio media	4	55.0	3	73.3
935	reading westerns	1	50.0	1	50.0
937	reading other or unspecified novels	5	60.8	5	60.8
940	reading magazines	4	50.5	4	50.5
941	reading pamphlets	1	15.0	1	15.0
950	reading newspaper	10	27.8	10	27.8
960	talking, general	4	68.8	3	91.7
962	face-to-face conversations	11	31.4	7	49.3
963	household talks, conversations	25	51.4	22	58.4
989	other passive leisure	1	150.0	1	150.0
990	passive leisure-related travel	1	20.0	1	20.0

* The codes designated with asterisks [*] were designated by the author for this study, and were not used for the 1981 Canadian Time Use Pilot Study (Kinsley and O'Donnell 1983).

TERTIARY ACTIVITY DURATION BY COMPLETE TAXONOMY

CODE	ACTIVITY	NUMBER OF EPISODES	MEAN EPISODE MINUTES	NUMBER OF PARTICIPANTS	MEAN PARTICIPANT MINUTES
100	preparing food, table	1	265.0	1	265.0
432*	light beverages or snacks	1	300.0	1	300.0
484	smoking	1	45.0	1	45.0
755	restaurant meals: social	1	130.0	1	130.0
900	radio listening	9	67.2	7	86.4
905	radio news, local, unspecified	1	30.0	1	30.0
910	TV general, un- specified	3	71.7	3	71.7
937	reading other or unspecified nov- els	1	20.0	1	20.0
940	reading magazines	1	30.0	1	30.0
950	reading newspaper	3	40.0	3	40.0
960	talking, general	2	95.0	2	95.0
961	telephone conver- sations	1	15.0	1	15.0
963	household talks, conversations	5	58.0	5	58.0
989	other passive leisure	1	40.0	1	40.0

* The codes designated with asterisks [*] were designated by the author for this study, and were not used for the **1981 Canadian Time Use Pilot Study** (Kinsley and O'Donnell 1983). The duration of five hours for 'light beverages or snacks' in this case is obviously too long. The respondent was unwilling to be more specific about the time breakdown of an episode of television watching, visiting with friends and snacking.

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