THE INTRA-URBAN MOBILITY OF THE ELDERLY

A STUDY OF A SUBURBAN SILVER THREADS CENTRE, VICTORIA, B. C.

by

KENNETH ALAN JONES

B. A., Chico State College, 1970

A THESIS SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department

of

Geography

ACCEPTED

FACULTY OF GRADUATE STUDIES

[redacted]

DEAN

DATE 29 April 1975

We accept this thesis as conforming

to the required standard

[redacted]

UNIVERSITY OF VICTORIA

April, 1975

Supervisor: Dr. J. D. Porteous [redacted]

ABSTRACT

Contact is the principal consideration of an urban existence. In planning for human needs in the city, the urban planner must consider groups of people with regard to contact. One clearly recognizable group is the urban elderly, who exhibit a great reliance upon non-automobile means of transportation. Contact and adequate transportation are important to the elderly, for morale level and activity level are related.

Victoria CMA is a retirement centre; the proportion of its population aged over 65 is more than twice the national average. Its transportation system is CBD-oriented; many people in the expanding suburban areas are, therefore, expected to experience transportation difficulties. As previous studies, such as those of Carp, have shown, the suburban elderly should also experience the same difficulties, and non-drivers should be less satisfied and less mobile than automobile drivers. In order to investigate the problems involved, members of the Saanich Silver Threads Centre were interviewed and their responses noted.

Members of the Silver Threads Centre displayed a large mobility profile; even non-drivers averaged at least one trip from home daily. Correlation coefficients indicate that the most significant factors correlating with trip frequency and satisfaction are mobility factors;

socioeconomic and sensory acuity variables ranked second and third in importance. Trips by automobile correlated positively, and significantly, with both trip frequency and satisfaction, whereas negative correlates were found with bus and foot mode variables. Those who drive do so for the vast majority of their trips, make more trips than those without automobiles, and are very satisfied with transportation. Those who do not drive rely primarily upon walking, with the remainder of their trips either in a friend's car or with the bus system; they, too, state that they are satisfied, although the level of satisfaction is lower. Although the results were statistically reliable, overall correlation figures were low and great confidence should not be placed in them.

The study is regarded primarily as an exploratory investigation. Before any sound conclusion can be drawn, further investigation is required.

Committee Members: Dr. P. Murphy P. E. Murphy

Dr. C. Jones [redacted]

ACKNOWLEDGEMENT

The author wishes to thank those whose assistance was essential to the completion of the thesis. Foremost are the members of the Silver Threads Centre and their directors, Francis Mahon, Pauline Barker, and Catherine Horne. In addition, the committee members, and in particular Dr. Porteous, were most helpful, and their help especially appreciated. Many others assisted, directly or indirectly, and their help is also appreciated; in particular the author wishes to thank Cliff Bancroft for research assistance, and Chuck Nelson for help in preparation of figures. The author especially wishes to express his gratitude to his wife, Etienne, for proofreading the final draft, and for her encouragement throughout the duration of the programme.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CATS	Chicago Area Transportation Study
CBD	Central Business District
CMA	Census Metropolitan Area
CRPB	Capital Regional Planning Board
DATS	Detroit Area Transportation Study
PJTS	Penn-Jersey Transportation Study
SSTS	Saanich Silver Threads Study

INTRODUCTION

This thesis comprises an investigation of the intra-urban mobility of a sample of persons aged 65 and over who are members of a suburban senior centre in Victoria, British Columbia. Prior to a detailed examination of the case study it is necessary to place it in the general contexts of intra-urban transportation planning and the needs of the elderly in the modern city.

This necessitates an initial examination of the activity patterns and needs of the urban dweller and the role of the planner in attempting to meet these needs. Human needs may be generalized on several levels; one level is by shared group characteristics. The elderly, examined within the context of their peculiar physical and socioeconomic characteristics, represent a clearly recognizable group with certain common needs. If they are to be able to enjoy the benefits of an urban existance, their special needs must be met. In particular, because of the special circumstances of extreme role loss experienced by elderly persons, their intra-urban transportation patterns and requirements differ markedly from those of the non-elderly.

Only after the situation of the elderly is reviewed in relation to both the aging process and urban transportation patterns in general (Chapters I - III) is the specific case of the transportation of the suburban senior centre elderly considered (Chapters IV - VI).

CHAPTER I

PLANNING FOR HUMAN ACTIVITY IN THE CITY

One often visualizes the city as the "built-up environment"--an assemblage of concrete, glass, and steel--but one might also view the city as a nodal point of human activity. Any urban study must consider both of these elements--the physical and the social--as essential parts of the whole, for the city is a complex of such elements interrelated in a "social process operating in space" (Webber, 1964, p. 89). It is most important to realize that an interdependent relationship between physical and social systems is implied. Perhaps emphasis should be placed upon the social aspects of urban systems rather than the physical; it is in response to such social aspects that physical systems are designed, and ultimately all the physical aspects of the city are (or should be) developed to meet the needs and demands of the city occupants. This is especially true of transportation systems which must attempt to satisfy their users' mobility needs.

By viewing the city in terms of both physical and social activity systems, it is understood that the activity systems of the whole urban sphere are composites of those individual activity systems common to the city's occupants. These activity systems (whether of the whole urban area or its individual component parts) exhibit a regular pattern in their distribution throughout the urban sphere. It is this "patterned distribution" that, according to Chapin and Hightower (1966, p. 9), can be analyzed in term of sequence, time, and space dimensions. The social as

well as physical activities of the city are therefore seen to possess a systematic order. This order may be structured in several ways: by the design of the physical system which accommodates it, e.g., the case of the transportation system used by commuters; or by other social and cultural factors, such as the isolation of certain ethnic minorities within one neighbourhood. It is the "human activity system" (i.e., the pattern of human movement) which is the primary consideration of the urban planner today, for it is in relation to human use that he must design the physical systems of the city. The planner must seek to develop a transportation route to serve its users best (satisfy more user needs), rather than to coincide with the existing structure of the city or reflect the most "economic" land use policy (as interpreted by some members of the community). It is often possible for the second consideration to coexist with the first, but it must never be allowed to precede it.

The problems faced by those in charge of planning the city today have placed urban affairs and urban development in a prominent position among the issues of our time. Interest in urban affairs has increased with interest in environmental quality matters in recent years; urban affairs may be considered one of the larger segments of "environmental quality" interests. The list of problems which the modern city must deal with is endless, and many of them, such as city finances, overcrowded housing conditions, pollution in its many forms, and crime, have reached crisis proportions. Because the professional planner is charged with the task of planning for improvements in urban environment (although he is not, by any means, solely responsible for policy and

planning implementation), he may be looked to by the populace for a "solution." If no solution seems forthcoming the planner may be blamed. Although many of our greatest problems are simply not solvable within the present framework, the planner is often blamed for not finding a solution.

The traditional planner tended to view the city almost entirely in terms of its physical components, and was therefore concerned with the optimal design of physical systems. As Erber observed, "the practice of planning was confined almost entirely to the physical environment" (1970, p. xiii). City problems were viewed as land use problems: "the prototypical urban problem is a metropolitan (and usually a land-use) problem" (Popenoe, 1971, p. 156). An even more strongly worded account is rendered by Gans (1969, p. 363):

> . . . the profession sees mainly the natural and man-made physical artifacts of the city. It aims to arrange and rearrange these artifacts to create an orderly--often even static--efficient and attractive community. . . . . the planner ignores almost entirely the people who live in that community, and without whom there would be no buildings or land uses. He does not plan for them as individuals or as members of groups . . . . For the planner, people are little more than artifacts.

Even though the traditional emphasis has been on the design of physical systems, this does not necessarily indicate that planners have lacked interest in social matters. Many planners felt that an improvement in the physical environment would automatically improve the social environment, thereby bringing about desired changes (Webber, 1964, p. 85). This Gans terms a "facility centered theory of social change." According to this theory, poor people, when provided with "properly designed facilities," will give up their existing life styles and adopt middle

class life styles (1969, p. 365). Although this essentially deterministic viewpoint is rather easily refuted and is certainly simplistic in its outlook, it does demonstrate an interest in the social sphere on the part of physically oriented planners, an outlook which is significant to an advocate of increased social input in the planning process.

Although the "physical planner-social reformer" ideal may be of interest as an affirmation of the importance of the social element to otherwise "physical" planning, there is much evidence that it is invalid. For example, a plausible cause attributed to the drug epidemic of post-war Harlem is the physical decay and overcrowded conditions of the neighbourhoods of the black people. However, in cases where these people were removed from their neighbourhoods by urban renewal projects, the basic life style remained unchanged. As Seligman reports in reference to city migrants:

> . . . The trouble . . . is that they simply don't know how to live in cities. Their standards of sanitation are wretchedly low; they are largely ignorant of the routines involved in building maintenance; their ignorance and poverty (and the racial hostility they encounter) lead them to overcrowd any quarters they find. In brief, they create slums wherever they go. (1958, p. 95)

One could hardly expect new physical surroundings alone to alter this life style.

Jacobs' observations that the same social problems can be found in even the "best" neighbourhoods (1966, p. 36), also tends to refute the deterministic view of the "planner-reformer" that good physical design will result in amelioration of social problems. This indicates that the physical sphere has only a limited impact upon its

social counterpart. Jacobs certainly has little respect for the traditional land use oriented planner when she states: "In city after city, precisely the wrong areas, in the light of planning theory, are decaying" (1961, p. 6). Thus, to design for both physical and social needs, the planner can rely on neither the traditional land use approach nor the "planner-reformer" ideal of social changes occurring through improvements of the physical structure. The planner must increasingly examine the social system apart from its spatial and locational aspects, and be aware of the sociological, political and economic considerations of the urban environment. This viewpoint is reflected by Young and Wilmott, who found kinship and friendship ties continued despite the disruptive effects of moving to a newly created community:

> . . . community spirit does not have to be fostered, it is already there. If the authorities regard that spirit as a social asset worth preserving, they will not uproot more people, but build the new houses around the social groups to which they already belong. (1957, pp. 198-199)

The recent input of the social sciences into the planning process may help bring the human and physical systems together in terms of design analysis, and place emphasis upon human activity in the city rather than upon physical system layout.

Partially due to considerations discussed above, the planner has received much criticism and his role in the urban environment has been questioned. Jacobs, one of the most outspoken critics of traditional planning, feels the "pseudoscience of city rebuilding and planning" is far removed from reality (1961, p. 6). Other critics have not attacked the theories of city planning, so much as questioned its traditional emphasis on land use. Fagin feels that social, economic,

and physical considerations should receive equal attention (1970, p. 125). Wheaton and Wheaton (1970, p. 154) have chosen to question the planner's social responsibility, for they find the major concern of the planner "has always been with the property of those who were better off in society rather than property . . . of those who were less well-off." According to Gans (1969, p. 368), the planner has been planning for a limited group of people composed of his professional peers, the upper middle professional classes, his political supporters, and the businessmen and civic leaders of the planning commission. His plans, therefore, "emphasized a growing downtown retail area and many neighbourhood shopping areas, and they often overzoned for future business districts. The planner's ideal city was good for business and for property ownership." The very act of planning for superhighways and high-rise office buildings--although not the sole interests of planners--tends to leave certain societal elements out of the planning process altogether. The process of "planning by elite bodies" (Porteous, 1971, p. 157) leaves the public sector completely out of the planning process, except as inheritors of its products or as indirect contributors through traditional channels, such as petitions.

Some critics, perhaps realizing the public's position, have called for increased social action on the part of planners who, they feel, have not been fully aware of the people's needs. Einsweiler sees the necessity to "perceive the needs of others" as the consideration most significantly absent from planning (1970, p. 189). Gans calls for "Interviews, observations and planning <u>with</u> people rather than just <u>for</u> them" (1969, p. 375). Stoloff wants a more radical course on the part

of planners, who, he feels, must become "advocates and activists" by seeking out the public directly to learn their problems (1970, p. 297). These critics, in calling for a reversal of "planning by elite bodies" and the substitution of a planning process which will have adequate provision for a public input, are also calling for a change from physical to human orientation in city planning.

Criticisms such as these have placed the traditional role of the planner in an insecure position; the planner may no longer rely upon land use oriented studies and proposals and the provision of "optimal physical design" without direct consideration of the public need. Such critics feel the planner must now take greater consideration of social consequences and plan with greater regard toward human activity in the city in order to "help communities evaluate social services . . . and work to develop strategies to solve community problems . . ." (Stoloff, 1970, p. 298).

If the planner is to design his plans in relation to human activity in the city, his degree of success is primarily dependent upon his understanding of the activities of people in the city. This is consistent with the concept of the city as a "social process operating in space," whereby "social process" is understood to be the summation of all human activity systems. It is the planner's task to study the people of the city and their activities. "In order to change the world we have first to understand it" (Harvey, 1974, p. 23)

In viewing the city as a "nodal point," a structure in which different activity systems converge to facilitate the exchange of information, goods, and services is implied. Given such a convergence,

it logically follows that contact must be the most important consideration. Alexander speaks of the city as "a mechanism for sustaining human contact" (1967). Contact is dependent "on overcoming the physical distance between two points" (Michelson, 1970, p. 48), and its success in providing for the exchange of information, goods, and services is dependent upon the degree of accessibility it affords those within its range. Webber (1964, p. 85) sees this factor of accessibility as the "unique commodity" of the urban system; Michelson (1970, p. 48) stresses accessibility of the contact point and transportation to it as the most important considerations of the city. In transactions where non face-to-face communication (e.g., telephone) is insufficient, transportation is the most important aspect of accessibility. In such a case, if a person cannot physically transport himself to a point, this point is not accessible, regardless of what amenities it may possess.

The contact points of the city are not equally accessible to all its citizens. Pahl sees two types of inhibiting factors faced by the city resident: spatial constraints of access to urban resources and facilities (measured in terms of distance, time, and cost); and social constraints related to the bureaucratic power structure (1970, p. 215). These two constraints may occur simultaneously, as in the case of urban transit facilities which transport people to scarce urban resources or facilities (a factor of distance, time, and cost), and which may also reflect the bureaucratic power structure in terms of priority given to the degree of transit service within certain areas of the urban region.

If the planner is to design for optimal use of the physical systems by all the city's residents, he must determine what people do

in the city, how they use the present physical facilities, and how existing systems might be improved to serve them better. In order to do this, the planner may confront several different methods of viewing human activity within the city. Some researchers tend to emphasize human activity at the micro-scale, while others seek to generalize at a broader scale. Parr (1970) visualizes human activity in terms of "territory" and "personal orbit," the orbit (or home range) being the broad space through which a person "roams," while the territory is a claimed space and defended as such by the individual. It is these personal orbits which meet at the contact points afforded by an urban existence, and planners must therefore endeavour to design physical systems in terms of such socio-spatial units.

Personal orbits may also be generalized in terms of group memberships, as such memberships give rise to characteristic activity systems. Axelrod found that most people display some formal group membership, and informal group membership is almost universal (1957, p. 722). Strauss also sees this group as a strong determinant of social behaviour. He feels "the various kinds of urban perspectives held by the residents of a city are constructed from spatial representations resulting from membership in particular social worlds" (1961, p. 67). Therefore, since group memberships have a significant effect upon the patterned behaviour of the individual and his use of urban systems, the planner must consider the group membership patterns of those for whom he is planning.

Other activity-generating levels have been considered by sociologists examining urban social behaviour. It may be that the

neighbourhood is a better indicator of sociological similarity and presents a truer representation of activity-generation than group membership. Timms (1971, p. 5) used the "natural area concept" in delimiting certain areas of the city region and applied factor analysis in an attempt to find certain dominant characteristics which would serve to delimit such areas. The many variables studied combined into significant factors of neighbourhood differentiation, which were social rank, family status, ethnicity, and urbanism-mobility (Timms, 1971, p. 250). Beshers also views urban human activity in terms of a community that is a "social and territorial entity," and has used factor analysis to achieve residential groupings within the city (1962, p. 14). According to this outlook, an upper middle class neighbourhood would make different demands on a city's transportation system than a lower class neighbourhood, since each would make different use of the city.

Another approach to the study of human activity systems in the city is concerned with activities stemming from the individual household. According to Chapin and Hightower (1966, p. 13), to study urban activity systems from this viewpoint is to "view urban life in terms of a flow of activities emanating from each and every household." They were able to establish a system in terms of recurring sequence, rhythm, and spatial distribution, this being consistent with their definition of activity systems as "the behavioral predisposition to 'patterned distribution in sequency, time, and space'" (1966, p. 9). Accordingly, the planner must look at human activity systems as they arise in individual households, since each household generates its own activities. It would also be possible to achieve some neighbourhood generalization

of households by using significant factors as guides to delimitation, as was done by Beshers and Timms.

The various models discussed (above) offer new approaches to the study of the generation of activity systems within the city; they may be conceived of as models of determinants of consumer demand for physical systems in the city. The planner, in the past, has been able to determine demand for physical systems through such techniques as origin and destination surveys, personal interviews, the establishment of time budgets and other techniques often used in relation to transportation studies. The Chicago Area Transportation Study, for example, delimited six types of land use on the basis of trip generation, using primarily origin and destination surveys (Chicago Area Transportation Study, 1959, p. 526). That such studies have been carried out in relation to transportation is most appropriate, for (as noted) transportation and accessibility are major aspects of urban contact.

Although transportation services may be provided for all residents of the city, there is generally a lack of equality in the degree of accessibility; this is a function of the factors outlined by Pahl. In today's automobile-oriented transportation system, those who drive their own automobiles or otherwise provide their own transportation are not hindered greatly by inadequacies due to household locations within the city region; commuting time may be uncomfortably long, but it is at least possible to reach the goal. Those who must rely upon the provision of public transportation, however, are strongly affected by the structure of the physical system. This is most serious for those who are either physically unable to drive (i.e., those who are too young,

too old, or physically handicapped) or unable to afford adequate transportation means (i.e., the urban poor, including a large percentage of the elderly and such disadvantaged groups as ethnic minorities).

Recent studies have examined the impact of the provision of public transportation facilities (or the lack thereof) upon the urban poor. The McCone Commission, which investigated the causes of the riots in the Watts district of Los Angeles, found that one of the chief causative factors was the lack of adequate public transportation facilities. This lack of adequate public transportation increased the frustration of residents to whom job sites were almost entirely inaccessible, as urban job sites are customarily not located within minority lower-class ghettos (Ornati, 1969, p. viii). The poor of New York City also experience great transportational difficulties. Ornati found this especially true in the journey to work and in the search for work, since the downtown orientation of the public transportation system contrasted with the decentralization trend of industrial employment (1969, p. 69).

Ornati's New York study is one example of the response of human activity to a physical subsystem of the city. In this case, the response to a downtown-oriented transportation system by a job seeker living in the inner city was continued unemployment. Planning measures may be able to correct this undesirable situation by either designing a transportation system which would reach out to dispersed job sites at the outer reaches of the urban sphere, by reducing the decentralization of urban employers, or by inducing the decentralization of the poor. If the planner is to insure equal access of all to available transportation

means, he must determine what type of transportation system the user needs, and how the present system could best be restructured to meet those needs. This necessitates the examination of social needs apart from, as well as in conjunction with, their physical components, and requires the formulation of these needs.

CHAPTER II

THE ELDERLY IN AN URBAN CONTEXT

As a group, the elderly of our cities greatly resemble the urban poor in terms of their transportation usage patterns. Indeed, the elderly are generally considered a sector of the urban poor (this will be examined in greater detail later), although their condition is somewhat different from that described by Ornati. Like the urban poor, the elderly are generally forced to rely upon mass transportation facilities; although they are not usually involved in the journey to work, they are nevertheless vitally concerned with their ability to get about in the city, for they, too, are interested in maximizing urban contact.

For purposes of establishing a definitional framework for the present study, the elderly will be considered as all persons of age 65 or over. Obviously, a wide spectrum of differentiation exists within such a large grouping, for not all elderly retire at the same age, not all possess the same state of mental and physical health, not all are members of the same social class, nor do they all have the same transportation needs. It is, however, necessary to establish some form of base line for the study, and it is felt that a certain identity or group consciousness exists among persons of age 65 or over. This is the type of identity recognized by Arnold Rose in his statement that elderly people develop an "aging group consciousness" (Rose, 1965, p. 64). The growth of the size of the over 65 sector of the population has brought with it examples of this type of group consciousness in the form of

senior centres, "Sun City" type housing developments, and exhibitions of "senior power." For the present, it is not necessary to demonstrate that such a group consciousness pervades the entire elderly community, but rather to point out that there is justification for the study of such a large group of urban transportation system users categorized as "elderly."

Given the status of the elderly as a group of urban system users, it would be appropriate to determine some of the sociological characteristics of the members of this group. Considerable conflict and disagreement exists among gerontologists and sociologists about the life styles of the elderly and their role in society, but the general indication is that, with advancing age, they exhibit a decreasing sphere of activities and an attendant loss of roles.

Role is defined by Rose as "a set of related behaviors, patterned by the meanings and values characteristic of a culture, by which man is able to adjust himself to a given group in a society" (Rose, 1965, p. 193). Havighurst's definition of role as a "pattern of behavior . . . taught by a social group" presents a similar outlook (Havighurst, 1960, p. 300).

People belong to many groups and, therefore, exhibit many different roles. These roles may also change in accordance with stages in the life cycle. With regard to the elderly, change appears to be characterized by a loss of roles which have been held throughout the earlier, more active life. As Rose states: "There tends to be a movement from head of household to dependent, from lack of awareness of psychological dependency to poignant awareness, from rise in prestige to

decline, from having a meaningful life role to having to search for a new role, and from being an active person to being a partial invalid" (Rose, 1965, p. 193).

The elderly's loss of roles has been much analyzed by those in the field. According to Burgess, the loss of occupational identity and a functional role in society is most important, bringing the elderly retired person into a position where he is "imprisoned in a roleless role" (Burgess, 1960, pp. 20-21). To Miller, the establishment of hobbies and leisure activities is not equivalent to meaningful and productive employment: "A career of leisure is characteristic of the socially immature (children) or the socially superannuated. For the aging individual, it can only serve to add to social loss . . ." (Miller, 1965, p. 84).

Pastalan has developed a "loss continuum of the elderly" in which he establishes four distinct stages, each corresponding to a certain loss level. At age 50-65 the children leave the home; age 65-75 is characterized by loss of occupational roles, loss of income, and death of spouse and/or friends; age 75-85 brings the increased loss of sensory acuity and health and a generally diminished independence; finally, at age 85-100, there comes a serious loss of sensory acuity, health, and independence (Pastalan, 1970, p. 98).

Rosow also found that increasing age brings with it a corresponding loss of roles, which, in turn, indicates a "contraction" of the social world of the elderly (Rosow, 1967, p. 196). He sees this role loss "especially in vital areas as marital status, employment, health, and income" (Rosow, 1967, p. 13). Further, "the character of these

losses makes them virtually irreversible. Hence, older people's integration into society on the basis of their role functions inevitably declines and deprives them of the participation inherent in these" (Rosow, 1967, p. 19). It would also appear--as a further testimony to the significance of this role loss--that the elderly themselves view "old age" as a time associated with increasing role loss, and tend to view themselves as "old" when such role loss occurs in their own lives (Rosow, 1967, p. 274).

Not all gerontologists present such a negative picture. A disagreement arises between those who tend to view the elderly as "dropping out" of society through loss of roles (Pastalan, Rosow, Miller, et al.) and those who tend to view the aging process as a more gradual development, and no more abrupt a change than the attainment of "middle age," for example. This latter outlook is found in the disengagement theory of Cumming and Henry. According to their theory, ". . . aging is an inevitable mutual withdrawal or disengagement, resulting in decreased interaction between the aging person and others in the social systems he belongs to" (Cumming and Henry, 1961, p. 14). Although this also portrays a situation of withdrawal, the latter is seen as gradual, planned for, and beneficial to both individual and society.

Rose, however, portrays the elderly not as losing roles, but as changing roles. The elderly adopt new roles within the "subculture" of the aged as they advance from one life stage to the next (Boyd and Oakes, 1969, p. 3). They do not, therefore, "disengage" from society so much as they "re-engage" in their own subculture; old roles are dropped, but new ones are taken on. This is the core of the re-engagement

theory of Rose and Tates. Such views are in sharp disagreement with Burgess' outlook of the elderly as being "imprisoned in a role-less role."

Some have argued that, although the elderly may have had traditional roles (de Beauvoir, 1973), these are now being lost in our modern industrial society. Palmore, for example, points to some changes which have had a great impact on the elderly. To a large extent, power is no longer in the hands of the old, but is being taken over by younger elements. The aged are no longer the "transmitters" of culture, as this function is now handled by the media. The extended family, a source of traditional roles for the aged, has been largely replaced by the nuclear family, in which the elderly play a very small role. Fewer jobs are available for the aged, as they cannot compete with younger workers on the open market. And, in a society in which status is derived from property, the elderly are often found in a position of relative poverty (Palmore, 1969, pp. 39-40).

The role of the family in the social integration of the elderly is one which has been of great importance. To Smith, the role of the elderly is one which is less meaningful in the kinship group today (Smith, 1965, p. 148). Burgess notes: "Older people, before the industrial revolution, experienced their main satisfaction in life through their membership in the extended family. They found in it security, response, and recognition. In their role of advice-giving and assistance to their adult children, they performed a vital function" (Burgess, 1960, p. 271). This condition, Burgess feels, has changed in today's society, thus placing a greater emphasis upon other

non-familial relationships: "Family and kinship relations more and more take second place to associations with persons selected on the basis of occupational and avocational interests and similarity of ideas and values. Family and kinship ties still exist, but they are no longer central and vital" (Burgess, 1960, p. 271).

Wilensky also notes this trend toward a less cohesive family and decreased familial roles for the elderly. He cites specifically the decline of the extended family, the loss of children and spouse, and the lack of "more than casual" secondary friendships as significant factors inhibiting the "successful personal adjustment" of the elderly (Wilensky, 1961, p. 236). The elderly person, who greatly needs primary group contact and support because of his extreme role loss, finds he does not have adequate family ties. Although he might seek secondary groups, these cannot replace the function of primary group ties. As Wilensky observes: "Successful personal adjustment among the aged is more a matter of primary group support" (Wilensky, 1961, p. 214). This does not imply that secondary group ties are not important, for an active secondary group life is effective as a source of social integration (Wilensky, 1961, p. 237).

Friendships form an important part of the elderly's social world. Rosow finds that the greater importance which is attached to friendships and primary-group activities over formal group activities is increased as the social world contracts (Rosow, 1967, pp. 20-21). Rosow also finds, however, that the elderly have fewer friends than the young, and it also appears that their friendships tend to be shallower (Rosow, 1967, p. 26). Although friendship circles are normally composed

of people of "similar positions, life styles, and beliefs" (Rosow, 1967, p. 27), social class differences diminish with increasing role loss and declining state of health (Rosow, 1967, p. 29).

Gerontological research indicates that social interaction is particularly essential to the well-being of the elderly. As Rosow states, ". . . most investigators consistently report that life satisfaction and psychological well-being in the later years are positively associated with high social interaction rather than withdrawal" (Rosow, 1967, p. 26). As important as this social interaction is, however, there are forces in operation which tend to reduce its level among the elderly. The major factor is role loss, which tends to lead to role ambiguity (Rosow, 1967, p. 30), for the "greater the change, the greater the risk of personal demoralization and alienation from society" (Rosow, 1967, p. 9). Rose finds that changes relating to roles, activity level, and degree of dependence bring about a condition whereby "opportunities for developing negative self-conceptions multiply, and mild depressions or neuroses are more likely to result" (Rose, 1965, p. 193). As a result of changes regarding activity level, dependency, and other factors of social integration, we find that the elderly are withdrawing into a world of ever-decreasing social interaction.

The level of participation of older people in formal organizations is generally low, as they belong to fewer organizations. Examples of membership levels of senior centres include New York City's 1.3% of the total population aged 65 and over, Syracuse's 5%, and a "record high" for an East London borough at 12% (Rosow, 1967, p. 20). As Blenker notes, "despite the rash of publicity and claims made for the

Golden Age Clubs, Senior Centers and similar programs, only 2% of the aged avail themselves of them, and one receives the impression that those who do are less in need of organized activity and attention than those who do not attend . . ." (Blenker, 1961, p. 419). This low level of participation in such programs could be a function of social class; the degree of success in adapting to retirement increases proportionately with the level of social class. Lower class persons tend to need the most help in adapting to the retirement situation, but are least likely to get it; the middle classes look forward to retirement the most, and want help the most, while the upper classes adapt best to retirement (Simpson, 1969, p. 162).

In planning for the behaviour of the elderly with regard to such formal group activities, one cannot expect any significant change from patterns of participation previously established (i.e., aging per se does not change the level of participation). As Rosow reports, aging results in no different "set of beliefs" (Rosow, 1967, p. 10). Simpson finds "old people do not change their basic patterns of living after they retire. Their interests, activities, associations, and relationships were formed during earlier years of their life. The setting in which these patterns are activated may change, but not the patterns themselves" (Simpson, 1969, p. 161). And Wilensky observed, ". . . successful personal adjustment in old age is a continuation of 'success' earlier established" (Wilensky, 1961, p. 236). Participation in such organizations does not decline with age, but is dependent upon the level of activity established before retirement (Rose and Peterson, 1965, p. 48).

In addition to the social and sociological aspects of aging traditionally examined in gerontology, certain environmental aspects must also be considered. The spatial components of the behaviour of the elderly, including their intra-urban mobility, are related to three major factors. First is the above-mentioned sociological condition of the elderly, on which will depend where they will want to go within the urban sphere, and to what extent they will want to be mobile. Secondly, physiological and psychological aspects of the elderly must be considered, i.e., how well they are able to cope with their physical environment. Finally, one must determine to what extent existing physical systems (e.g., transportation facilities) meet the sociological and environmental needs of the elderly.

For the second consideration, a good reference point is the concept of home range (Chapter I). Gelwicks defines this as "a series of linkages and settings traversed and occupied by the individual in his normal activities" (Gelwicks, 1970, p. 149). Any individual (or group) will exhibit a certain environmental milieu of "linkages and settings." Home range is defined by physical barriers, the perception of the individual, and his own peculiar needs and capacities (Gelwicks, 1970, p. 150).

According to Lawton's environmental docility hypothesis, "the greater the degree of competence of the organism, the less the proportion of variance in behaviour due to the environment" (Lawton, 1970, p. 40). With reference to the elderly, they are more sensitive to changes in their environment because they have experienced "some kind of reduction in competence" (Lawton, 1970, p. 40). Therefore, just as

the aging individual experiences a loss of social roles accompanied by a shrinking social sphere, he also experiences an attendant loss within the physical sphere due to the reduction in competence, bringing about increased environmentally-induced variance in behaviour. Social roles often have spatial components, and, although new roles might indicate new spatial activities (e.g., the journey to the senior centre), the overall loss of roles, together with the loss of environmental competence, would tend to place limits in the physical sphere of the elderly person.

In addition to the declining health and loss of roles of the elderly, the characteristic poverty of the urban elderly also places constraints upon their environmental competence. In the United States, for example, the median income of those 65 and over is less than one-half that of those under 65 (Kreps, 1969, p. 146). In Victoria, local newspapers cited cases of elderly people living on sub-poverty pensions (Melnyk, 1972, p. 45). The financial situation of the elderly restricts their ability to get about in the city, a situation which closely resembles that mentioned earlier in reference to Ornati's study of the poor of New York City.

All of the above characteristics have a profound impact upon the transportation habits of the elderly within our cities. Many of the elderly rely upon public transportation systems which may not always suit their needs. The elderly are a special group whose needs--just as those of the commuter--must be assessed if they are to be offered adequate public transportation provision by today's planners. If Lomas is correct in stating that the citizens of the urban sphere should be able to "manipulate" their environment, rather than be "dominated" by it

(Lomas, 1966, p. 31), then it must be the concern of the planner to render the urban environment less "domineering" to those who are less able to cope with it.

CHAPTER III

THE ELDERLY AND INTRAURBAN TRANSPORTATION

An Overview

Because of factors noted in the previous chapter, the elderly, as a group, are forced to rely upon public transportation far more than their younger counterparts. Less than half the elderly in North America own and operate their own automobiles (Atchley, 1972, p. 269), which indicates that over half walk or rely upon either public transportation or friends' private cars. Despite this great need on the part of the elderly for public transportation, we find that "transportation systems largely ignore the needs of older people" (Atchley, 1972, p. 275).

One of the greatest problems of the elderly is the automobile orientation of the North American city, particularly as it has evolved after World War II. Most obvious of all the automobile-induced changes is the decline in the provision of public transit that is evident in virtually all North American cities. Persons who are without automobile transportation find themselves severely handicapped by the city's structure and transportation services. The automobile has had a profound effect upon city structure and "lies behind virtually every recent change in the physical form of the city" (Simmons, 1969, p. 155).

The former pattern of high density housing around typically radial streetcar lines (Smerk, 1968, p. 5) has changed to one of expanded suburbs or even specialized multiple nuclei (Ullman, 1962, p. 216) or

"compartmentalized cities" (Scott and Brewer, 1971, p. 126) requiring automobile access. People without automobiles are left in a very uncertain position, for the number of old neighbourhood centres and corner stores of many cities is being reduced, while regional shopping centres are developed to replace them. As an illustration of Ullman's multiple-nuclei theory, a speaker at the Workshop on Transportation and the Aging (1970) offered this view of the "new" city:

> There was a time . . . when there used to be a neighborhood which would have in it a physician, a grocery store, a church, a recreational lodge and so forth. We now tend to have a new ecology where things tend to be grouped. There will be a shopping center on one edge of the community; there will be a medical center at another point in the community; and you have this specialization of functions located in specific areas . . . This is obviously . . . geared to individuals who live in one section and can drive to the shopping center and drive to the medical center and so forth. It obviously . . . poses problems for the aged. (Kent, 1970, p. 118)

Neither are the elderly served adequately by the public transportation systems remaining. The elderly reside farther from transportation facilities (Pahl, 1970, p. 241). Cross-town transportation in a system which is usually CBD-oriented is difficult, and the prospect of changing buses two or three times causes much more anxiety for the elderly than for younger riders. The elderly poor experience these greater transportational difficulties more than the non-poor, presumably because of greater reliance on public transportation (National Council on Aging, 1970, p. 7).

The elderly face several specific problems. There is a physical problem as many elderly people, due to their decreased sensory acuity (Revis, 1971, p. 6), simply are not able to "walk, climb, stand, see,

hear, and open doors" adequately (Andryshak, 1971, p. 35). There is an economic problem because of the low income of the elderly as a group (Atchley, 1972, p. 269), fully one-half of which "live in poverty or 'near' poverty" (Andryshak, 1971, p. 35). Moreover, a service problem is present; from the standpoint of the retired elderly, public transportation service is "poor" (Atchley, 1972, p. 269). Most transportation systems serve journeys to work, to shop, and to school; they are not developed in response to "the patterns of the elderly" (Andryshak, 1971, p. 35).

The importance of transportation to the elderly has been well recognized. In the United States, the National Council on Aging identified transportation as a major problem because all other contact depended upon it (Revis, 1971, p. 7). In a Vancouver study, three times more elderly respondents stated that stores and buses were important services for them than those who listed health care facilities, churches, parks, libraries, or other categories (Michelson, 1970, p. 108). According to a White House news release from the Conference on Aging, at the 6000 forums conducted across the United States, transportation problems were the third most frequently noted (after health and money), and many rated transportation as the greatest problem (Scott and Brewer, 1971, p. 119). For the elderly, one of the greatest personal needs is activity, and activity is dependent upon transportation (Revis, 1971, p. 8).

This need for activity is illustrated in Kutner's Five Hundred study, in which the elderly sample indicated the activities they "fairly regularly" engaged in. It was found that 60% of the aged 65+ sample had a low activity level, while 40% had a high activity level (Kutner,

et al., 1956, p. 105). When comparing activity level against morale level, those of a high activity level tended to have a high morale. Specifically, of those with a high activity level, 46% reported high morale, 28% medium, and 26% low morale. Of those with a low activity rating, 31% reported high morale, 31% medium and 38% low morale (Kutner, et al., 1956, p. 106). Other factors positively correlated with high morale were social status and health (Kutner, et al., 1956, pp. 115-116), while age was negatively correlated with morale (Kutner, et al., 1956, p. 110).

Golant, perhaps in realization of this activity level-morale correlation, characterizes as "captive" those who must rely upon public transportation (Golant, 1972, p. 122), and the term "under 'house arrest'" has been used by others (Scott and Brewer, 1971, p. 123). Golant found that all income groups suffer a decline in daily person-trips with increase in age (Golant, 1972, p. 138), and that a "multiplier effect" tends to be present in those who have inadequate transportation, leaving them in "a 'syndrome of deprivation'" (Golant, 1972, p. 128). Kent has characterized this syndrome thus: "You get low income; you get poor health; you get an absence of transportation facilities, and the net result of this is something that is very different than any one of these things individually" (Kent, 1970, p. 118).

Some insight has been gained in the social profile of those who tend to use the bus system frequently. Both age (after 50) and poverty are positively correlated with bus usage (Golant, 1972, pp. 137-138). Those who rely on public transportation tend to make fewer trips and are more dissatisfied with their transportation arrangements (Carp,

1970a, p. 178). In this connection, the studies of Frances Carp require detailed discussion. Carp's conclusions support the views cited earlier: ". . . the majority of retired people tend to be 'marooned' in their own houses, and an even larger proportion of them cannot come and go freely to do what they want during the years of their retirement . . . For people who cannot drive, transportation problems may severely limit all aspects of life during the retirement leisure years" (Carp, 1971, p. 184). This conclusion was reached after examination of the intraurban mobility and transportation of both automobile and non-automobile users among the elderly.

Fewer than 50% of those over 65 drive, as compared to 90% of those under 65 (Carp, 1971, p. 182). Carp examined several factors to determine the characteristics of those who drive, and how well driving meets their transportation needs. These included: financial status; car ownership; health; ethnicity of neighbourhood; sex; and location of residence. These combined to form a theoretical profile of the "typical" elderly driver:

> The 'typical' retired person who drove, then, was an Anglo-American man who lived in a nice house in the suburbs with his wife. He had a relatively good income and rated his health favorable. His education was better than average, and during working years he had held a job at a relatively high level. In retirement, he drove practically everywhere he went and was satisfied with his transportation. (Carp, 1971, p. 186)

This kind of person had a high level of mobility and satisfaction with mode of transportation, but comprised only 15% of the retirement community (Carp, 1971, p. 183). Many of those who drove were restricted in terms of time of day, speed, and/or range.

Carp also developed a similar profile of the "typical" retired non-driver:

> The people most unlikely to be drivers were residents of Afro-American or Mexican-American neighborhoods who had low incomes, substandard housing, and negative opinions of their own health. They had less than average education and had worked at low-level jobs. These people were not well satisfied with their means of transportation, which was most likely to be their feet, but they were more mobile than people who lived farther out. (Carp, 1971, p. 183)

As might be expected, those who drove tended to be satisfied with their mobility outside the home, whereas those who did not drive rated this "unfavorable" (Carp, 1971, p. 182).

In examining usage of public transportation facilities, Carp found location of residence to be an important factor. Frequency of usage diminished with increase in distance from the CBD. Ethnic-majority neighbourhoods had bus stops within one block of the residence in 99% of the cases, as compared to 70% in Mexican-American and 50% in Afro-American neighbourhoods (Carp, 1971, p. 183). Generally, frequency of bus usage was inversely related to level of satisfaction among those who used the bus. Automobile drivers who never used the bus tended to rate bus service "very favorable" (Carp, 1971, p. 183). Carp concluded:

> . . . as it exists, public transit does not meet well the needs of the older person who does not drive. Unless transportation is devised to support mobility during retirement, this increasing segment in the life history of many persons will be one of loneliness and inactivity rather than one of self-fulfillment and social contribution. (Carp, 1971, p. 191)

In an earlier study, Carp sought to investigate certain variables which she felt might be related to the frequency of mobility of the retired and their level of satisfaction. This study examined 18

variables in five categories: characteristics of the neighbourhood; location of residence; characteristics of person; household composition and family situation; and the transportation mode used. The study was based upon a sample of the retired population of San Antonio, Texas, and involved elements of the minority-ethnic community as well as the majority. The results presented are a correlation of the 18 "person-situation" variables vs. frequency of trips and vs. trip satisfaction, as shown in Table I.

TABLE I

PERSON-SITUATION VARIABLES VS. TRIP VARIABLES

Variables	Rank of Person-Situation Variables vs. Trip Frequency	Trip Satisfaction	Sum of Ranks
Health	1	1	2
Location (dist. CBD)	2	3	5
Ethnicity (neighbourhood)	3	7	10
Income	4	6	10
Has Car	5	2	7
Age	6	14	20
Housing (quality)	7	10	17
Household Composition	8	8	16
Job Level (socio-econ.)	9	4	13
Other Kin (lives w/)	10	12	22
Time at Address	11	13	24
Sex	12	5	17
Children (in area)	13	11	24
Exdriver	14	16	30
Other Driver	15	9	24
Distance to Bus	16	18	34
Age of Neighbours	17	17	34
Marital Status	18	15	33

(Based on Carp, 1970a, pp. 174-175).

By analyzing these correlates of satisfaction and frequency of trips, Carp was able to determine several important trip-influencing variables. Health was most important, as people who tended to favourably rate their own health also tended to be more satisfied with their personal mobility. Location was a second important variable (measured in terms of distance from the centre of the city); Carp found that "centrality of residence was associated with high frequency of going out and satisfaction in regard to transportation, while peripherality was associated with infrequency of going out and dissatisfaction with transportation (Carp, 1970a, p. 175). Automobile ownership was also important, as those with automobiles tended to go out more often and be more satisfied. Further: "Being without a car was common but not much of a handicap in the downtown area; the really housebound and dissatisfied people were those in the suburbs who did not have automobiles" (Carp, 1970a, p. 175). Carp also ascertained obstacles to mobility; not surprisingly, money came second only to health. Consequently, socio-economic factors are considered as a fourth important category, and, once again, those with higher income levels tended to go out more and be more satisfied. A fifth major category was that of neighbourhood ethnicity, as residents in minority-ethnic neighbourhoods went out less and were more dissatisfied with their transportation than those of majority-ethnic neighbourhoods. In conclusion, Carp found "retirement may constitute a special problem in regard to free time" for those elderly of low health, of low socio-economic status, who live in ethnic-minority neighbourhoods, and who do not own automobiles (Carp, 1970a, p. 179).

The Situation in Victoria

In the context of this general examination of transportation, mobility, and the elderly, the situation in Victoria is revealed by several previous studies; most of this work was conducted in relation to the bus system, the only public transit mode in the CMA. At first view, it appears that the elderly in Victoria are pleased with the bus service provided. In the Retirement study conducted by the Capital Region Planning Board (CRPB), the sample of retired, aged 65 or over, was asked to list likes and dislikes of the neighbourhood of residence; only 7% listed "close to bus" as a "like" and a mere 4% listed "too far from bus/poor service" as a "dislike" (CRPB, 1969, pp. 108-109). In both cases, bus-related factors were very low on the list of public services noted by respondents; it would thus appear that bus transportation is not a significant factor in the neighbourhood "likes" and "dislikes" of the retired elderly of Victoria.

Further, when asked to rate bus transit among a list of public services, 59% of the sample stated "satisfied; no comment; do not use; or not interested." Since this question was asked of all sampled aged 65+ retired persons, one would assume (after Carp) that it included most of the automobile drivers, a segment which typically includes about half of the elderly. Of the dissatisfied, 16% listed "need more frequent service," 13% "need lower fares or passes," while 13% had "other" comments. The CRPB study was therefore able to state: "There is a high degree of satisfaction with the present level of most public services. However, the retired age 65+ do desire some changes or improvements in the bus transit system . . ." (CRPB, 1969, p. 150).

It is also possible to determine who uses the bus service among the retired elderly of Victoria. According to the CRPB study, 54% of the retired "rarely or never" use the bus (CRPB, 1969, p. 142). The study revealed the predictable (and consistent with Carp) results that the better off, both physically and socioeconomically, drive. This is also true of the younger retired (CRPB, 1969, p. 151). The level of bus usage is "relatively uniform" regardless of the trip purpose; recreational trips dip a little below the 21% level due to the frequency of recreational walks by this age group, while around 30% of shopping trips are by bus (CRPB, 1969, p. 151). Bus usage tends to be either infrequent or often, which indicates transit use "by a hard core of riders for most of their trips for whatever purpose (providing that trip cannot be carried out on foot)" (CRPB, 1969, p. 151). The study also revealed that those who drive make more trips than those who do not; 45% of the aged 65+ sample use the bus, but they make only 21% of the trips (CRPB, 1969, p. 151), while 41% own automobiles and make 55% of the total trips (CRPB, 1969, p. 155). This indicates a strong relationship between automobile ownership and mobility.

The elderly retired, as a group, also have an economic impact on the bus system. Of the 173,000 weekly bus fares, 35,000 are from this segment (CRPB, 1969, p. 152). This is 20% of the total, but since it is concentrated in non-peak hours, it becomes even more consequential. Although approximately one-third of the trips are pass trips, the additional non-peak hour patronage of the elderly "helps to keep the system at least partially viable in off-peak hours" (CRPB, 1969, p. 152). The study concluded that, rather than view the elderly segment as an

additional cost to the system, it should be viewed as a segment which significantly supports the bus system; "the service would be poorer than it is now if the retired patrons were not as numerous" (CRPB, 1969, p. 152).

The Capital Region study concluded that the retirement community was relatively well off and satisfied. "Income level, degree of satisfaction with the residence district, mobility, absence of major complaints, general satisfaction with services, as examples, point to a retired group which is generally at ease, and is free and able to follow its desires in a climate and environment of which it takes full advantage" (CRPB, 1969, p. 247).

Some of the statements of the CRPB study were examined in a pilot study for this thesis conducted in the spring of 1971. The study sought to identify the off-peak hour user of the bus transit system in Victoria by interviewing 200 of those users during three different weekday afternoons. They were interviewed at three major downtown bus stops which also serve as transfer points; the time of interview varied from noon to 4:00 p.m. The interviewers noted the general age (young, middle, old) of the transit user, and inquired how frequently they used the bus, if they had to transfer to meet their destination, how long their trip was, if they had access to an automobile, if they were satisfied with the bus system, and, if not satisfied, what reasons they had for their dissatisfaction.

The user profile was typical of urban transit users; 60% were female, and only 10% had access to an automobile. Fully 36% of the sample were in the "elderly" bracket (quite substantially more than the

Capital Region's 20%, and bearing out its conclusion that the significance of the retirement community was greater in non-peak hour usage), and 40% of the interviewees expressed dissatisfaction with the bus system. The latter figure contrasts sharply with the results of the Capital Region (29%), which, it may be remembered, covered all retired persons, including automobile drivers. This reflects Carp's statement that the greater the level of bus usage, and therefore of experience of the system, the lower the satisfaction rating. The reasons for dissatisfaction were ascertained via an open-ended question, and the most frequent responses were "infrequent service" (48% of the dissatisfied), and "reduced service" on Sundays, holidays, and evenings (33%). The only other reasons stated were "poor connections" (11%), and "too expensive" (7%). It might be added that, although the study included all age groups, the elderly tended to be more dissatisfied with the quality of service, especially that on Sundays, evenings, and holidays (Jones, 1971). Despite the apparent "general satisfaction with services" (CRPB, 1969, p. 247) on the part of the elderly, there is thus some indication that the elderly of Victoria may not be without their transit-related problems.

In relation to these problems, the Capital Region study did recommend increased service "in the form of small, cheaper buses" (CRPB, 1969, p. 150). Moreover, the 1965 Capital Region Transportation Study recommended cutting back service in low-density areas in order to increase it in high-density areas, and adopt a "series of east-west arterials which could be utilized for transit" (Traffic Research Corporation, 1965, final page of "Condensed Report").

A further recommendation dealing with the initiation of an east-west arterial has come from the Silver Threads Service of Victoria. This study cited the growth of the outlying regions as a factor requiring a restructuring of the bus transit system. "The existing pattern of bus routes is now obsolete in that the population growth and density of the Saanich area is being overloaded. The existing routes which funnel into the downtown area of the City of Victoria do not meet the need for cross-town service" (Silver Threads, 1970, p. 1). This observation reflects a statement at the interdisciplinary Workshop on Transportation and the Aging (Washington): "We live with basically historical hangovers in the design of transportation networks, most of which are arterially oriented, that is, oriented to a single center, and it is almost impossible to find a transit system that provides anything like adequate peripheral or lateral movement" (Bruck, 1970, p. 124). The major reason for proposing this new route was that many of the elderly members of the Saanich and Esquimalt Silver Threads Centres found great difficulties in getting across town (Mahon, 1972). The report further recommended that the bus pass privilege be extended to all elderly citizens, even if they did not receive a pension supplement, and that the hours of the pass be extended from 9:00 a.m. to 4:00 p.m., and from 6:00 p.m. onwards in the evenings. The brief echoed the policy recommendations of academic research workers: ". . . it would seem impractical for local and senior levels of government to financially sponsor senior citizens' day centres without providing the necessary transportation to enable senior citizens to use these facilities . . . we must provide these people with subsidies

that will enable them to continue to be vital members of society" (Silver Threads, 1970, p. 2).

CHAPTER IV

A TRANSPORTATION AND MOBILITY STUDY OF THE MEMBERS OF THE SAANICH SILVER THREADS CENTRE

Rationale

Underlying this study is the belief that, in order to make the urban environment viable and meaningful for its occupants, the amenities of the city must be accessible to all its citizens. The most important element of this accessibility is transportation, and the provision of public transportation is particularly important to the elderly. The elderly display a much greater reliance upon public transportation than most groups within the population; if they are to enjoy the amenities of an urban existence, this form of transportation must meet their needs. In order to plan a transportation system for optimum utilization by a group such as the urban elderly, it is necessary to ascertain their needs and desires. It is the purpose of this study to ascertain that need: to determine the extent of utilization of the public transit system by a sample of the urban elderly; to determine the degree of satisfaction and overall mobility of the sample; to determine what characteristics tend to describe the mobile elderly person; and to determine what, if any, changes could be made to improve the transportation system from the standpoint of the elderly.

Objectives

The objectives of this thesis are primarily exploratory and descriptive in nature, although a certain explanatory function may also be met. It is intended to produce information in several major areas. First, the study seeks to derive a social, spatial, and mobility profile of the respondents. Secondly, it seeks to develop mobility comparisons of drivers and non-drivers. Thirdly, the discovery of significant variables regarding mobility and satisfaction in the intra-urban transportation of the sample is sought. A final area of interest lies in ascertaining the problems affecting the mobility of the elderly sample, if any.

In relation to the above, the study will examine certain hypotheses:

1. Mode of transportation is the major variable affecting mobility.
2. Mode of transportation is the major variable affecting satisfaction in transportation.
3. Elderly drivers will be more mobile than elderly non-drivers.
4. Elderly drivers will be more satisfied in their ability to get about than will elderly non-drivers.
5. Elderly people who use the public transit system will be greatly restricted in their intra-urban mobility.

The hypotheses follow closely the work of others (Chapter III), notably Carp; their degree of validity in this study will add to, or detract from, the validity of those prior studies. A final correlation matrix, involving mode of transportation with particular reference to trip frequency and satisfaction, will be used to test the hypotheses.

Setting: Victoria as a Retirement Centre

Metropolitan Victoria is located on the southern portion of the Saanich Peninsula, which lies at the extreme south-east of Vancouver Island, British Columbia. Of special interest to this study are the region's municipalities of Victoria, Oak Bay, Esquimalt, and Saanich. At a higher level of government is the Capital Regional District, which has maintained primarily a regional planning and administrative function to date (i.e., it is not a "metro" government). The overall population growth trend demonstrates that the rate of Victoria's growth is declining, while that of Saanich is continuing at rapid pace. Victoria, Esquimalt, and Oak Bay are largely built up, with limited undeveloped land available; to Saanich has fallen the bulk of the typical post-war suburban outgrowth from the central city (Table II). Saanich, legally a corporation, remains descriptively a suburb, with essentially no recognizable core, whereas the other three municipalities have well developed CBDs.

TABLE II

POPULATION GROWTH TRENDS

Municipality	Population ('000) 1951	1971	1981 (est.)
Metropolitan Victoria	113.9	195.8	245.0
City of Victoria	51.3	61.7	65.6
Saanich	28.5	65.0	103.1
Esquimalt	10.1	12.9	16.3
Oak Bay	12.0	18.4	22.0

Source: Department of Community Development, 1969, p. iii; Statistics Canada, 1973.

Perhaps the best feeling for the physical setting of the Victoria area can be gained through the realization that it is an important centre for retirement and tourism. Many elements appeal to both: the large city park; the pleasant physical environment; the agreeable climate; the cultural and recreational offerings; and the reputed "English atmosphere." On a given day, a stroll through Beacon Hill Park will give ample evidence to the region's status as a retirement centre, for Victoria's elderly are "outside, are actively doing things . . . and are therefore visible" (CRPB, 1969, p. 251). It is a safe conclusion that "the area's favourable climate and natural amenities will sustain its popularity as a retirement centre" (Department of Community Development, 1969, p. 7).

The population structure of Victoria, especially in comparison with the remainder of British Columbia and Canada, reflects its retirement centre status. Metropolitan Victoria's population structure has almost twice the aged 65+ segment as does Canada (15.1% as compared to 7.7%), and it is also substantially more elderly than British Columbia as a whole (Statistics Canada, 1973). Population pyramids (Figure I) confirm this elderly bias.

The elderly segment, even though largely composed of retired individuals, is not without its economic impact upon the region. In comparing incomes of Victoria and British Columbia (Table III), certain characteristic differences emerge. The three categories of "pensions and superannuation," "interest," and "dividends" account for a larger proportion of the total income in Victoria (16.7% as compared to 7.8%). These three could be considered as largely retirement-related incomes,

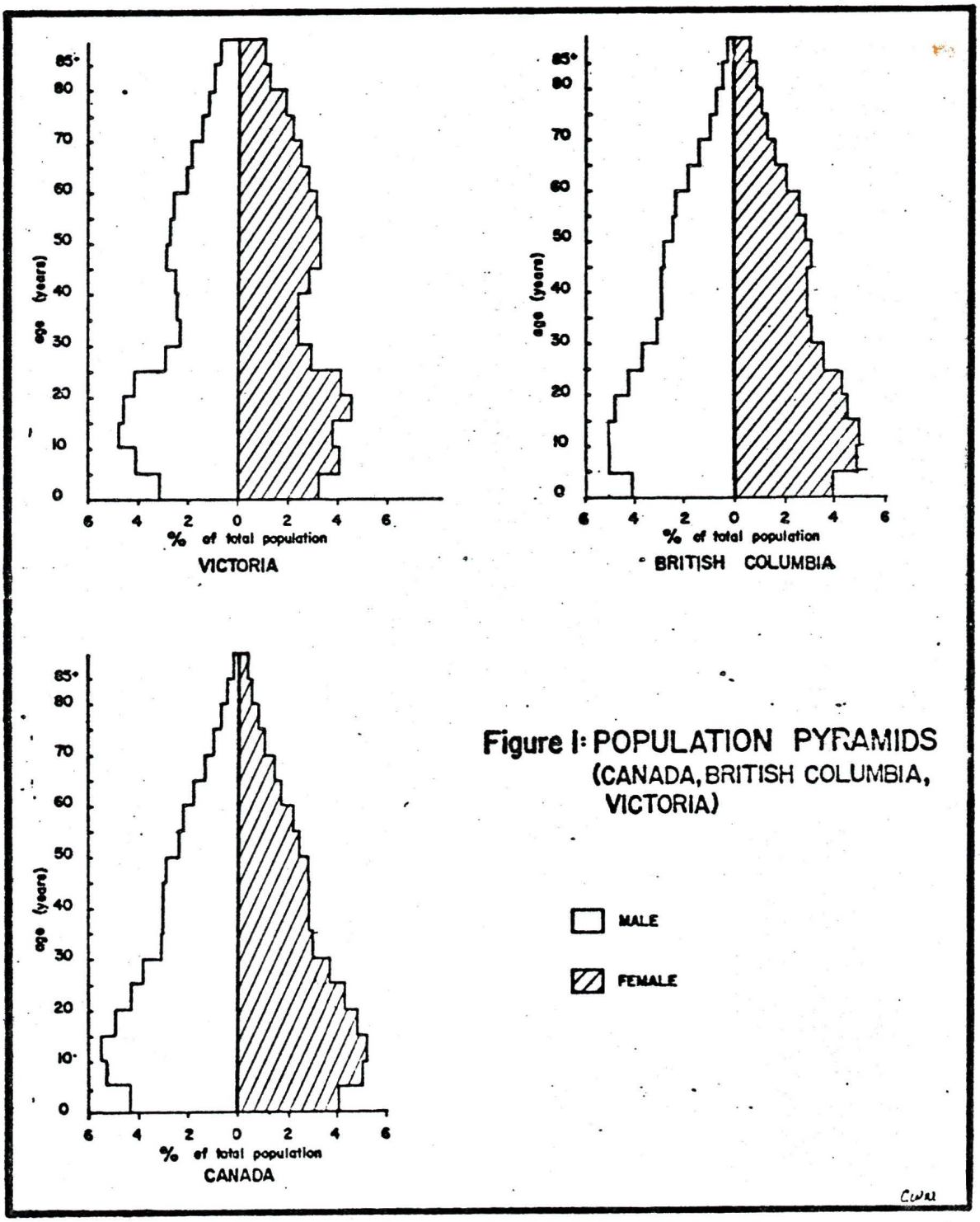


Figure I: POPULATION PYRAMIDS (CANADA, BRITISH COLUMBIA, VICTORIA)

and, along with the lower level for "wages and salaries," demonstrate the economic presence of the elderly.

TABLE III

INCOME BY SOURCES AS PERCENT OF TOTAL

Income Source	British Columbia	Metropolitan Victoria
Wages and salaries	84.3%	75.2%
Pensions and superannuation	2.5	6.4
Interest (bond, bank, mortgage)	3.0	5.9
Dividends (Canadian and foreign)	2.3	4.4
Business income	3.5	3.7
Professional income	2.4	2.6
Other income	2.0	1.8

Source: Department of Community Development, 1969, p. 8; based upon Department of National Revenue and Dominion Bureau of Statistics data.

Another indicator of the economic status of Victoria's elderly can be found by comparison of personal income tax returns. In order to do this, the Capital Region Planning Board equated the occupational classifications of "Investor," "Property Owner," and "Pensioner" with "de facto retirement" (CRPB, 1969, p. 173). The Capital Region study, using personal income tax returns of those aged 55+, derived mean annual retirement incomes of $4,134 for Victoria and $4,062 for Canada; this compares with a mean income of $4,611 for all income tax returns from Victoria. This information demonstrates that the retired of Victoria are somewhat better off than the retired of Canada as a whole, and that, although the income of retired people is lower than the general income

level, it is not greatly so.

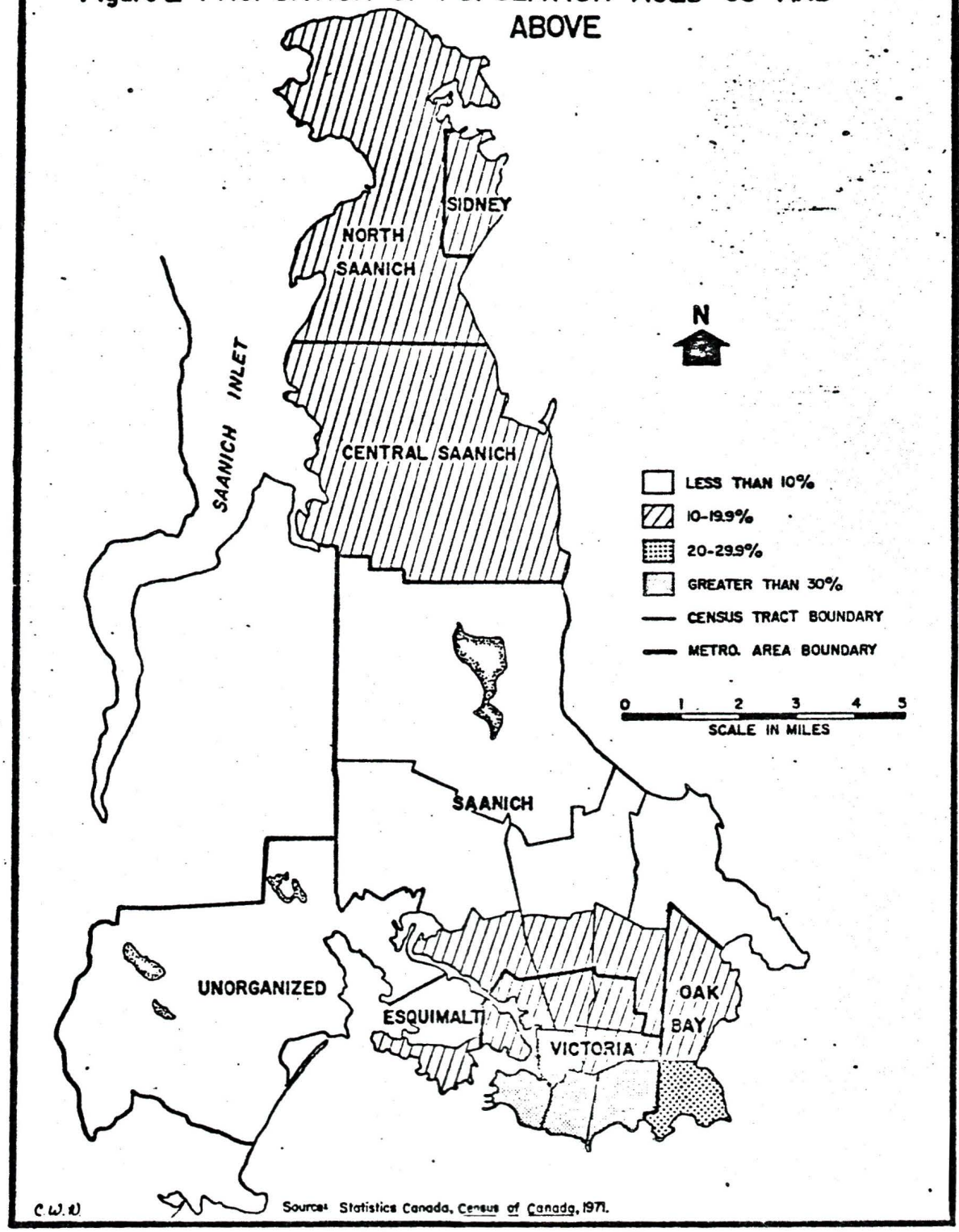
Setting: Saanich and the Silver Threads Centre

Saanich is the fastest growing municipality in the Victoria CMA and has the greatest potential for sustained growth. With no clearly recognizable CBD, it has several large shopping centres, and its arterials are laced with typical "strip" commercial enterprises (food franchises, service stations, etc.); its housing is predominately single family residences. It is clearly an automobile-oriented area.

Though somewhat larger in total population, Saanich does not have as large a population of elderly residents as does the City of Victoria (Table IV). Neither is the concentration of elderly, proportionate to total population, as great in the Saanich census tracts as it is elsewhere (Figure 2). It does, however, have an appreciable number of elderly persons (approximately 10% of the total population), and attempts have been made to provide services for these persons through the Saanich Silver Threads Centre, which is affiliated with similar centres in Victoria and Esquimalt. Oak Bay maintains a separate centre.

The outstanding demographic characteristic of Saanich is its low density. Due to this relative low density, and the city's status as an outlying suburban district, one would expect the citizens of this area to have greater transportation problems than those of Victoria, particularly if they do not own automobiles. Further, the bus system of 1972 exhibited a typically downtown orientation, with all lines centered on the Victoria CBD, and no east-west arterial routes (Figure 3). In terms of transportation and the elderly, one would expect greater

Figure 2: PROPORTION OF POPULATION AGED 65 AND ABOVE



Source: Statistics Canada, Census of Canada, 1971.

TABLE IV

TOTAL POPULATION AGED 65+ BY MUNICIPALITY

Municipality	Males	Females	Total
Victoria	5,445	8,675	14,120
Esquimalt	540	750	1,290
Oak Bay	1,575	2,335	3,910
Saanich	3,040	3,575	6,615
Central Saanich	275	245	520
North Saanich and Sidney	715	785	1,500
Total	11,590	16,365	27,955

Source: Statistics Canada, 1973.

problems in Saanich than Victoria for several reasons: the elderly population is spread out over a larger area, thus requiring the traversing of greater distances to contact points; there is no CBD in Saanich, which requires travel to either the Victoria CBD or a regional shopping centre for many urban functions; the existing bus system (1972) reflected the radial downtown orientation as it was instituted in the immediate post-war years, rendering cross-town travel difficult by public carrier; there were no east-west arterials in the bus system, further emphasizing the radial, downtown orientation of the system, and compelling trips to downtown Victoria for the purpose of transfer to a bus bound for another peripheral area. If an elderly person who lives in the suburbs is able to drive, many of these problems will not be present; according to Carp, the suburban elderly who do not drive are the most disadvantaged with respect to transportation.

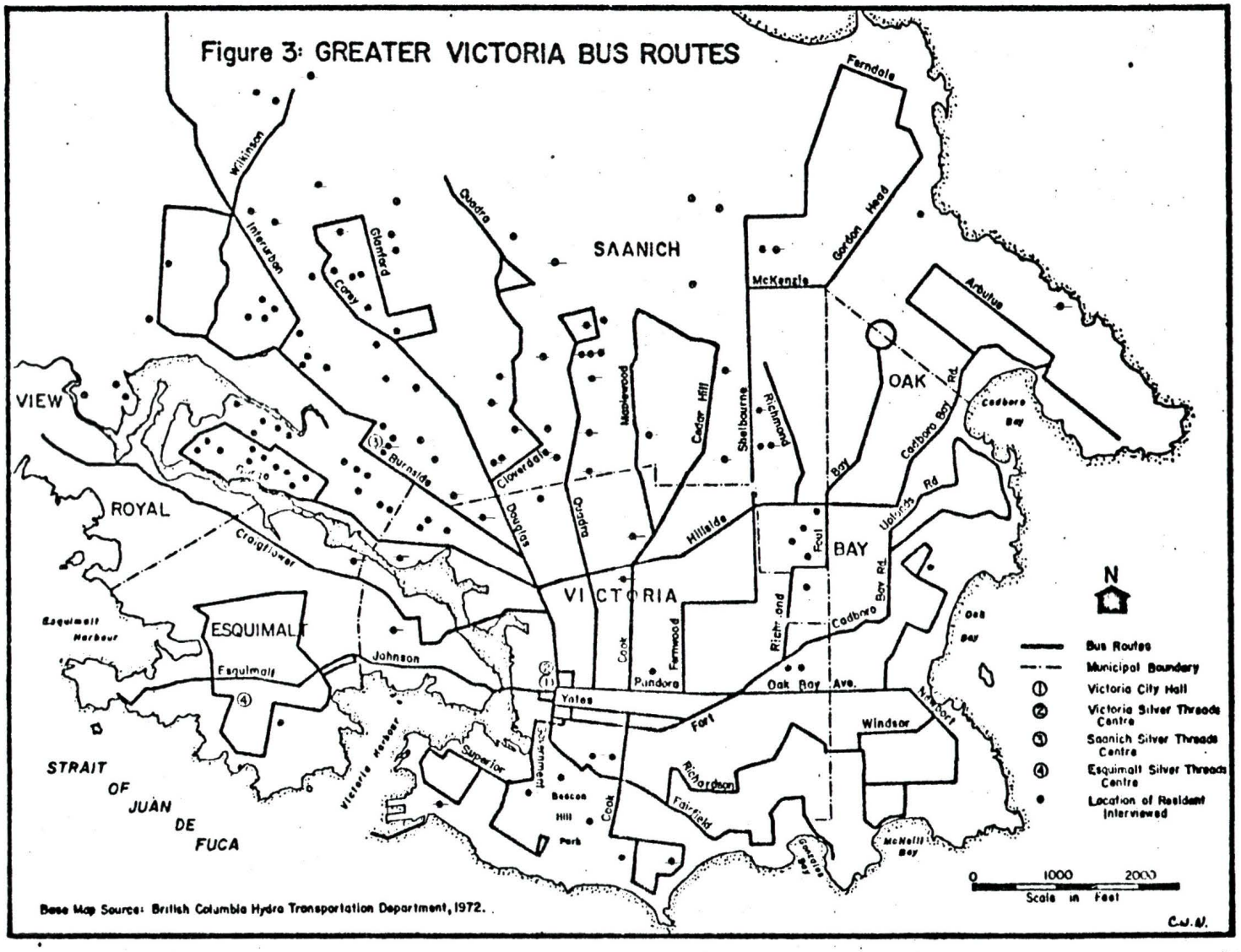


Figure 3: GREATER VICTORIA BUS ROUTES
SAANICH
VICTORIA
ESQUIMALT
OAK BAY
VIEW ROYAL
Wilkinson
Interurban
Glanford
Carey
Quadra
Ferndale
Gordon Head
McKenzie
Arbutus
Cedboro Bay Rd.
Cedboro Bay
Uplands Rd
Burnside
Clovardale
Douglas
Blanshard
Maplewood
Cedar Hill
Shelbourne
Richmond
Hillside
Foul Bay
Craigflower
Esquimalt Harbour
Esquimalt
Johnson
Yates
Cook
Fernwood
Pandora
Oak Bay Ave.
Fort
Windsor
Newport
Richardson
Fairfield
Superior
Government
Victoria Harbour
Beacon Hill Park
McNeill Bay
STRAIT OF JUAN DE FUCA
N
Bus Routes
Municipal Boundary
Victoria City Hall
Victoria Silver Threads Centre
Saanich Silver Threads Centre
Esquimalt Silver Threads Centre
Location of Resident Interviewed
0 1000 2000
Scale in Feet
Base Map Source: British Columbia Hydro Transportation Department, 1972.
C.J.U.

The Saanich population selected for this study was the membership of the Saanich Silver Threads Centre, the sampling frame being the membership list of that Centre. The reason for the selection of such a senior centre will be discussed, but first it is necessary to examine the nature of senior centres in a more general sense, along with their impact upon and importance to the aged.

It may be recalled (Chapter II) that, as a general rule, very few of the elderly avail themselves of senior centres (Rosow, Blenker); that the level of participation in such organizations tends to be related to socio-economic status, with the lower classes participating the least (Simpson); and that, after retirement, there is no tendency to engage in any more or different organizations than those which were engaged in prior to retirement, inasmuch as a person's life style is developed as part of a continuing process during earlier years (Rosow, Simpson, Wilensky).

The level of participation in senior centres in Metropolitan Victoria is, by most standards, high: 17% of the sample from the Capital Regional Planning Board's study reported membership in such an organization, this being the third largest membership category reported, following church (22%) and fraternal orders or lodges (19%) (CRPB, 1969, p. 253). The CRPB also found ". . . active participants in voluntary organizations are usually those with relatively high socio-economic status . . ." (CRPB, 1969, p. 252). This is consistent with Warburton's study of social participation in Victoria, in which respondents' level of "happiness" was positively related with socio-economic status and high level of social participation (Warburton, 1967, p. 242). It was

also determined that higher social activity is associated more with females and younger-aged respondents (CRPB, 1969, p. 260). The degree of social group involvement was also indicated; 10% of the respondents belonged to three or more organizations, 17% to two, and 27% to one, which also indicates that 46% of the sample did not belong to any formal organizations (CRPB, 1969, p. 260).

From this information, some hypotheses can be drawn relative to the Saanich study sample. Obviously, all those interviewed belonged to at least one organization (Silver Threads), and were, therefore, representative of the active half of the elderly as identified by the CRPB study. Due to this higher level of social activity, the Saanich Silver Threads sample might be expected to be of a higher-than-average socio-economic status; they would also tend to attain a higher level of "happiness," and be more satisfied with their life situation. There should also be more females and younger persons among such a sample than among the total population of the elderly. The Saanich sample is thus expected to be representative of only a segment of the CRPB study's sample, being, on the average, more active, more suburban, and, most probably, of a higher socio-economic level and more satisfied with their life situation.

The Saanich Silver Threads Centre itself, at the time of the survey, had approximately 300 members. It offered a full range of activities, including hot lunches, recreation programs, and special events. In addition, special trips were also organized for the members, and classes were held in crafts and other fields. On any given occasion, the centre appeared busy and its members were most certainly "active."

The structure itself was a relatively new building, and seemed to meet most of the needs of its members. Accessibility to the centre was not, however, without its problems; many members, according to the centre director, could not attend functions because of transportation problems. It was partly in response to this situation that the present study was launched.

Methodology

In order to carry out this research, it was first necessary to establish a population from which interviewees could be drawn. This population was composed of the membership of the Saanich Silver Threads Centre. A membership list is an "excellent sampling frame," provided its usage meets two criteria: it must be complete and free of omissions, and sampling from the list must be random (Babbie, 1973, p. 89). To ensure this, the researcher first conferred with the centre's director in order to bring the list up to date; total membership in (January) 1972 was 300. Secondly, a random process was used in order to select subjects from the list. A sufficient number of subjects was arbitrarily judged to be 200. Not all of this number could be used in the analysis. Forty-two surveys were invalid due to errors, incomplete socio-economic or trip data, lack of understanding of the questionnaire, or failure to meet the study's criteria (i.e., respondent was under age 65, house-bound, or no longer a member of Silver Threads). In addition, thirty-five refused the interview, giving such reasons as "too busy," "not interested," or simply an evasive answer such as "I've got no problems," or "I don't go to the centre very much." A final sample size of 123

returns remained.

Before conducting the survey, a pilot study, using the proposed questionnaire, was conducted at the Esquimalt Silver Threads Centre. This brought several problems to light, and the interviewing procedure was changed, as necessary, to correct them. Respondents were too involved in other activities at the centre to give adequate time to the questionnaire. Many were not able to fill the form out themselves, or did not understand its procedure. Few volunteered to complete the questionnaire. Some prejudicial conversations were heard, in that those completing the interview were urged to either hurry up, or, in one case, "put down all the things that are wrong, so we'll get a better bus system." Therefore, it was decided that the questionnaire should be shortened to its final form (Appendix), should be read directly by the interviewer, and should be conducted in the home, free from external distractions.

The questionnaire, as finally used, was administered directly by the interviewer; all respondents were interviewed by the same person. This technique helped ensure consistency and reduce interviewer-related variance. In a few instances, when the respondent was unable or unwilling to allow the interviewer to conduct the survey in person, the questionnaire was left with the respondent and the interviewer returned for it at a later date. In all but two of these cases, however, it was found that the survey had not been properly filled out, and many surveys so conducted were "lost." Therefore, the best technique remained the in-person interview with the respondent. The elderly people were not as familiar with questionnaires, academic research, surveys, and

the like as younger people, and often failed to understand precisely what was required. Also, due to the nature of the questionnaire, it presented a formidable appearance (being seven pages long); when respondents were presented with this survey to complete themselves, they tended to react negatively toward the sheer bulk of the questionnaire, as experience with the pilot study demonstrated. An interview typically required about one hour.

The questionnaire was largely based upon the type of material studied by Carp. It was composed of three distinct areas of interest: personal data; spatial-neighbourhood data; and transportation-trip data. It was hoped that, although this was a large amount of information to gather, it would give an accurate picture of the nature of the sample interviewed. It was further intended that eleven of the variables be employed in a correlation matrix.

In developing the questionnaire, no concrete formula could be found for ordering the questions; in retrospect, the best advice seems to be that randomizing is "futile," and that the researcher must do what he deems best (Babbie, 1973, p. 198). This was, essentially, the course taken (Appendix).

The questionnaire, in its final form, sought information on two levels. The first level sought general descriptive data, while a second level derived eleven variables which would be used in the correlation matrix phase of the study, and which related to the five hypotheses (page 40). The questionnaire first delimited drivers from non-drivers, in order to enable later comparisons in their mobility. Several questions were asked concerning the bus service: how frequently it was used;

complaints or problems encountered; how often it was necessary to transfer; how frequently the bus served the respondent's home; how often the bus was taken; if the respondent had a bus pass; and how far the respondent's residence was from a bus stop. In addition, since this survey was conducted after a total system bus strike, the respondent was asked if he had been inconvenienced during this strike period. Two open-ended questions followed: how the person was inconvenienced; and what alternate forms of transportation were used, if any. Although the interim period was approximately one year, it was felt that any real inconvenience would still be recalled.

In addition to the bus-related questions, some were asked in regard to transportation in general. The respondent was asked: how satisfied he was, in general, with his transportation arrangements; if he would like to get out more often than he did; if there were places which he would like to visit, but was unable to, due to transportation difficulties (an attempt to find a latent demand); and to list the advantages and disadvantages of his usual form of transportation.

After the completion of this section of the questionnaire, several questions were asked relative to specific trips by trip purpose (shopping, visiting friends, etc.). A five point scale was provided for the respondent to indicate his level of satisfaction with the transportation arrangements for each specific trip category. When totaled for each respondent, this provided a counter-check with the respondent's earlier statement regarding satisfaction. It also provided, as a non-directional mobility profile, an index of activity in terms of number of trips made and mode of transit used.

The final section of the questionnaire elicited personal data. This included such variables as age, sex, marital and household living status, and work status. In order to determine social rank, the respondent was asked the head of household's chief occupation and level of education attained. Income was grouped in $100 per month increments, and was to include income received from all sources. Length of residence at the present address and in Victoria was ascertained. Finally, two additional grouped response questions were given; the perceived percentage of people aged 65 and over in the neighbourhood; and the respondent's evaluation of his own overall health. As stated previously, most of the variables were considered "general" and were included for the purpose of developing a profile of the sample. Many, such as that of neighbourhood agedness, were used by Carp and found insignificant.

Carp's most important variables were chosen for the correlation phase of the study; these were health, income, social status, and distance from CBD. In addition, age was chosen due to the nature of the sample. Because of the study's hypotheses, the remaining variables dealt with mode of transportation, satisfaction in transportation, and trip frequency. These variables are categorized as either social/socio-economic (health, income, social status, age), spatial (distance from CBD), mobility- (satisfaction, frequency) or trip-related (mode of transportation) in nature.

Age was chosen, since the declining sensory acuity of older persons would affect their ability to get about and their degree of satisfaction. It is possible that, in absolute terms, age is not a useful variable, as all persons age at different rates; there is,

however, no satisfactory substitute for chronological age as a measure of "agedness." Income was chosen because people of higher income should have more transportation options available to them; also, it was of second importance in Carp's study (Carp, 1970a, p. 175). Social status is related to income; in this study it was derived by use of Hollingshead's index (1965), which combines education and occupation of head of household to achieve a social class rank. Carp used surrogates such as "quality of housing" and "income" to derive an indicator of socio-economic status, which she found ranked fourth in importance. Health, which was the final socio-economic variable chosen, ranked first in Carp's study (Carp, 1970a, p. 175). Obviously, healthy people should be able to get around better and be more satisfied than those who are less well. A self-ranking index was used to measure this variable; it was felt that one's self-perception of health was a better indicator than surrogate measures of health, such as number of trips to the doctor in the past year.

Distance of residence from Victoria City Hall, a surrogate for degree of "suburbanness," was chosen as the only spatial variable. Carp found that distance ranked second in accounting for trip frequency and third in accounting for satisfaction; in the typical downtown-oriented bus system (of which Victoria is a good example), proximity to the city centre usually brings about better transit service due to converging bus lines, density of major arterials, and so forth. Distance from the CBD was measured by coding the residence of the respondent according to a zonal system in which zones were delimited as a series of one-half mile concentric circles with the centre being City Hall in Victoria.

The remaining variables chosen for the correlation analysis were related to mobility and intra-urban trips in order to determine what bearing mode of travel might have on trip frequency and satisfaction. The trip mode statistic was derived as the percentage of trips the respondent took as auto driver, auto passenger, public bus rider, or pedestrian. The two modes of automobile transportation were broken down because it was felt that using one's own automobile would be more satisfying than being taken in another, as people often lose their sense of independence if they must rely upon others to provide for them. Finally, the two variables of satisfaction in transportation and frequency of trips were examined. It was hoped that, by examining correlations in reference to these two aspects of personal mobility, it might be possible to reduce the list to a few statistically significant correlates.

Several points require further discussion. A large number of questions relate to personal and socio-economic factors. These were found to be important by Carp; health, automobile ownership, and socio-economic status were isolated as important correlates of mobility in her studies. Also Golant found "considerable variation in trip activity levels" due, in large part, to socio-economic diversities in the sample (Golant, 1972, p. 174). Golant, moreover, found only "a very weak relationship" between the level of trip activity and locational variables (Golant, 1972, p. 184). He did, however, find a "much stronger relationship" between locational variables and public transportation trips (Golant, 1972, p. 184).

A second characteristic of the survey is the large number of

questions related to bus transportation. A host of questions may be asked in relation to the elderly as drivers; Carp's 1971 study was largely concerned with this. This thesis, however, is concerned with identifying the problems of bus system users rather than automobile users, and with contrasting the mobility of automobile users with non-automobile users.

Rather than ask the elderly respondents to maintain a record of a week's trips, or employ a similar technique, it was felt that the respondent would be more at ease recalling the "typical" trip in the "typical" week or month. This is a variation of the "indirect measurement" technique used to project to past or future periods of time, thereby eliminating seasonal fluctuations (Babbie, 1973, p. 137). This also eliminated the need for call-backs and extensive record keeping on the part of the respondents. It would be very difficult to find 123 of the centre's 300 members who would be willing and able to keep such extensive records; as it was, many of the people interviewed objected to, or became uneasy during, the one hour needed to complete the questionnaire. The alternative would have been to have the person recall which specific trips he took within the past week. This would have introduced a seasonal prejudice, left out some less frequently taken trips in some cases, or overweighted them in others. It was also felt that, if the person's responses (based upon recollected usual and established habits) could not be trusted, then the survey, in general, would not be valid, as other questions were asked which required similar skills of recall and generalization.

Most questions were structured to allow choice responses on a

1 - 5 scale. While more choice responses allow a greater range of variation (Babbie, 1973, p. 278), they would also exacerbate respondents' difficulties in completing the questionnaire.

Analysis involved two steps. First, in order to provide a profile of the sample, the means and distribution of scores were calculated. This was to provide, primarily, a method by which the sample's characteristics could be compared with those of other studies. As the study seeks to examine the relationship between mode of transportation, trip frequency, and trip satisfaction, as well as that between other variables, a correlation analysis was decided upon. Since the questionnaire data gathered were on the ordinal (ranked) scale, the Spearman rank order correlation coefficient was deemed appropriate (Haber and Runyon, 1969, pp. 108, 117).

The Spearman rank correlation coefficient was calculated according to the formula:

$$r_s = 1 - \frac{6 \leq D^2}{N\ (N^2 - N),}$$

where r_s = Spearman rank correlation coefficient, D^2 = squared difference in ranks, and N = sample size. This was calculated by using a University of Victoria "Statpak" program, which also calculated a t-ratio score, for a test of statistical significance, through a conversion formula:

$$t = \frac{N - 2}{1 - r_s^2}.$$

For this particular test, a significance level of $p = 0.05$ was chosen. The null hypothesis (H_0) is: There is no correlation between the variables, and any apparent correlation is due solely to chance.

CHAPTER V

ANALYSIS AND INTERPRETATION OF RESULTS

The first purpose of the study is to determine a descriptive profile of the sample and the population from which it was taken; this information is presented in Table V, as related by variables of social, neighbourhood/spatial, and transportation data. In the discussion which follows, comparisons have been made with the results of other studies. Finally, the study will turn to a discussion of those variables which were selected for the correlation phase.

Description of Sample

Social/Socioeconomic Profile

The first characteristic noted is that of age. As the survey was administered exclusively to persons over 65 years of age, the age profile was expectedly high, the mean age being 75. This distribution was more concentrated in the middle 71-80 group than that of the Census and the Capital Regional Planning Board's survey; the latter reported a distribution of 23% aged 65-69, 49.8% aged 70-79, and 27% aged 80+ years (CRPB, 1969, p. 14).

The Silver Threads sample displayed a greater than expected proportion of males. Census data indicate, in the Victoria CMA, 42% male and 58% female aged 65+ (Statistics Canada, 1973), whereas the present study found a much closer distribution of 48% and 52% respectively.

TABLE V

SUMMARY OF SURVEY PROFILE RESULTS

Variable	Class	Distribution
Age	50-60	0%
	61-70	17%
	71-80	59%
	81-90	22%
	91+	0%
Sex	Male	48%
	Female	52%
Marital Status	Single (never married)	4%
	Married	51%
	Divorced or separated	2%
	Widowed	43%
Living Situation	Alone	29%
	With spouse	48%
	With relatives	15%
	With friends	7%
Work Status	Retired	99%
	Part-time	1%
Health	Very poor	0%
	Poor	11%
	Average	39%
	Good	47%
	Very good	3%
Years Residence, Victoria	Less than 1 year	0%
	1-3 years	4%
	4-6 years	13%
	7-9 years	5%
	10+ years	79%

TABLE V (Continued)

Variable	Class	Distribution
Years Residence, This Address	Less than 1 year	2%
	1-3 years	30%
	4-6 years	15%
	7-9 years	0%
	10+ years	52%
Income, Per Month	$ 0-100	0%
	101-200	36%
	201-300	43%
	301-400	16%
	401-500	3%
	501-600	2%
	600+	0%
Social Status (Hollingshead)	Social Class I	0%
	Social Class II	8%
	Social Class III	11%
	Social Class IV	61%
	Social Class V	20%
Distance to CBD	Zone 1 ($\frac{1}{2}$ mi.)	2%
	Zone 2 (1 mi.)	2%
	Zone 3 ($1\frac{1}{2}$ mi.)	0%
	Zone 4 (2 mi.)	22%
	Zone 5 ($2\frac{1}{2}$ mi.)	56%
	Zone 6 (3 mi.)	7%
	Zone 7 ($3\frac{1}{2}$ mi.)	3%
	Zone 8 (4 mi.)	6%
	Zone 9 ($4\frac{1}{2}$ mi.)	0%
	Zone 10 (5 mi.)	2%
Distance to Bus Stop	1-3 minutes	48%
	4-6 minutes	35%

TABLE V (Continued)

Variable	Class	Distribution
Distance to Bus Stop	7-9 minutes	7%
	10+ minutes	9%
% of Neighbourhood 65+	None, or almost none	14%
	1 of 8	17%
	1 of 4	27%
	3 of 8	7%
	1 of 2 or more	35%
Frequency of Bus Usage	Seldom or never	46%
	1-2/week	20%
	3-4/week	23%
	5-6/week	2%
	7-8/week	2%
	9-10/week	8%
Frequency of Bus Transfer	Never	42%
	Rarely	23%
	Sometimes	25%
	Often	10%
	Very Often	0%
Frequency of Bus Service	20 minutes or less	36%
	30 minutes	44%
	40 minutes	5%
	50 minutes	0%
	60 minutes	15%
Opinion of Bus Service	Very poor	4%
	Poor	12%
	Average	39%
	Good	34%
	Very good	12%
Bus Pass Holder	Yes	25%
	No	75%

The marital status of the present study was almost identical to that of the CRPB study, which reported 7% single, 50% married, 42% widowed, and 1% divorced (CRPB, 1969, p. 16). Similarly, living situation conformed to the other study. In the CRPB study, 35.3% of the respondents lived alone, 42.5% lived with their spouse, and 21.3% with "other" (CRPB, 1969, p. 17). The major difference encountered was the "living with spouse" category; 48% of the Saanich sample, as compared to 42.5% of the CRPB sample, were so characterized. The difference in the "living with spouse" group would probably explain the higher proportion of males in the Saanich study. In both studies there was a discrepancy between those of "married" and "living with spouse" status; CRPB reported 50% married and 42.5% living with spouse, while the present study recorded 51% married and 48% living with spouse. The difference is a factor of survey terminology; married couples who live with friends or relatives are so categorized, rather than as "living with spouse," which is intended to mean "living with spouse only." The different results of the two studies might be explained in part by the seemingly older profile of the CRPB study; older married couples would be more likely to live with others (e.g., their children) due to an increasing loss of sensory acuity.

As the CRPB study did not ask a similar health-rating question, and Carp did not make her results known (except as a correlate of mobility), it is not possible to make a cross-comparison for this variable. The Saanich sample displayed a rather high health rating, inasmuch as 89% considered themselves to be of average or above average health. No respondents placed themselves in the "very poor" category. Two or

three people were interviewed who, as was disclosed during the course of the interview, were confined to their homes by health reasons. Although their questionnaires were not, therefore, used in the analysis, it is interesting to note that they, too, refrained from characterizing their health as "very poor." Doing so would, no doubt, have a bad psychological impact upon the elderly person, and would also be indicative of a negative self-image.

This study varied somewhat from the CRPB study (which was, by definition, of 100% retired persons) in that a little over 1% of the sample worked outside the home. All of those who worked for wages did so part-time, and this generally involved domestic-type duties, such as cleaning and child care. Several of the elderly sampled did voluntary work (especially at Silver Threads), but this was not recorded as "work."

The sample was exceptionally stable in terms of residence within the Victoria CMA; fully 79% had lived 10 or more years in the region, while only 4% had lived three or fewer years in Victoria CMA. Several people were interviewed who had moved into the area from elsewhere, but these were not recent migrants. A significant number who had moved to the Capital Region from the prairie provinces was noted, as well as a few immigrants from Great Britain. Generally, however, the vast majority had lived in Victoria prior to retirement. This picture of stability varies somewhat from that found by the CRPB study, which reported 71% of its sample having lived ten years or more in the Capital Region, and 10% two years or less (CRPB, 1969, p. 40). Speculation regarding the apparent stability of the Saanich sample provides several possible explanations. Firstly, a new in-migrant might naturally gravitate

toward the more recognizable City of Victoria. It has a higher number of elderly inhabitants, is closer to urban amenities such as shopping facilities and parks, and has a greater number of suites in apartment buildings and converted older houses available for rent. The outlying districts are primarily single-family dwelling units, and most new in-migrants would (most probably) rent prior to purchasing a home.

This speculation that an in-migrant would first settle in Victoria rather than Saanich might also be borne out by the comparison of "years of residence at this address," which indicated far less stability. In this case, only 52% of the respondents had lived ten or more years at the same address, while 32% had lived three years or less. This indicates a degree of household mobility of the elderly sample within the Victoria CMA. In addition to the housing location factors outlined above, this might also be due to a change in living situation brought about by loss of spouse, decreased income, or poor health.

Income and social status were the final variables discussed as part of the socio-economic profile. Although the CRPB study did not attempt to ascertain social status, it is possible to make a direct cross-comparison of annual income by converting the Saanich study's monthly income to an annual income statement (Table VI).

The most noticeable difference between the two samples is that the Saanich study respondents are concentrated in three categories only, whereas the CRPB study has a more even distribution, together with noticeably more respondents in the upper income levels. This could be a function of several factors. It was expected that a senior centre sample would not contain the lower socio-economic groups, thus

TABLE VI

ANNUAL INCOME: SAANICH AND CRPB SURVEY SAMPLES

Annual Income Range	Saanich Study	CRPB Study
Less than $1200	0%	3%
$1,200 - 2,399	36%	27%
2,400 - 3,599	43%	23%
3,600 - 4,799	16%	18%
4,800 - 5,999	3%	9%
6,000+	0%	16%

Source: CRPB, 1969, p. 59.

eliminating the extremely poor. At the same time, those who are especially well-to-do are also not likely to make use of such centres. Also, the lack of respondents in the extreme income categories could be a function of survey error. Perhaps, by asking monthly, rather than annual, income, the respondent made a less accurate response. Respondents possibly did not list (although specifically requested to do so) their income from all sources. Many were living on fixed-income pensions, and it is possible that other sources were not included, e.g., spouse's income, gifts, assistance from relatives, or indirect assistance of financial importance, such as rent-free housing whilst living with relatives.

The lower than expected income structure was reflected in the five social status levels, as derived from the Hollingshead index. The index is based upon type of occupation of the head of household, as well as the head's education. According to this classification, 81% of the

respondents were in the two lowermost classes. Again, the respondents were concentrated in three categories, and none were found in the uppermost class. This might be explained by the difficulty of applying such an index (which reflects today's social status) upon a people who are, in actuality, of another era. The greatest number of respondents had achieved only a grade eight education, and were therefore ranked low on the scale. In 1915, however, a grade eight education was of greater importance than it is today; very few people actually completed grade twelve or thirteen, and a university education was rare. The study also noted a disparity in occupations, in that no "upper level" occupations (physicians, graduate engineers, certified public accountants, etc.) were found; typical was the small farmer, bookkeeper, clerk, dockworker, or operating engineer. Perhaps, had this scale been based upon 1935 occupation standards, the respondents would have placed at a higher level.

Spatial/Neighbourhood Profile

Neighbourhood data revealed that 78% of the sample lived in zones four and five, i.e., a distance of two or two-and-a-half miles from Victoria City Hall (Figure 3). Very few lived close to City Hall (4%), a fact that is not surprising since the Saanich Silver Threads is designed to meet the needs of Saanich residents. That some people who attended Saanich Silver Threads actually lived in Victoria proper may be a function of the desire to belong to a smaller organization, or be with friends who attend Saanich Centre. This spatial distribution of the sample describes a population of residents who are sufficiently

removed from the city centre to encounter some of the expected distance-related breakdowns in transit service and efficiency. This is particularly true since 67% of the sample did not drive.

Despite the distance from the city centre, 83% of the sample found itself within a six minute walk from the closest bus stop; almost half were within a three minute walking distance. It is, therefore, anticipated that very few of the respondents will find distance to the bus stop a major negative factor in bus system usage.

Finally, although Saanich does have proportionately fewer older residents than Victoria, most of the survey respondents perceived themselves to be in areas of relative geriatric concentration; 69% felt they lived in neighbourhoods in which at least one-fourth of the residents were of "retirement age." Approximately one-third of the sample indicated they lived in an area of few older persons (i.e., less than one in eight).

Intra-Urban Transportation of the Sample

Bus System Usage

The bus system was not heavily used by more than half of the older people sampled; 46% used it "seldom or never." There was, however, a sizable group (43%) who used it on a regular basis, one to four times per week, and a small number who used it nine or more times per week. The CRPB study produced similar results; 54% of the sample "rarely or never" used the bus, but, of bus users, there was also a "hard core" who used it "for most of their trips for whatever purpose" (CRPB, 1969, pp. 142, 151).

Frequency of bus transfer was included as a possible indication of efficiency of bus service in the outlying areas. Approximately one-third of the respondents were in the "sometimes or often" group regarding transfers; this compares well with the downtown pilot study (Jones, 1971), which found that one-third of the passengers interviewed at the downtown bus stops were making transfers to get to outlying areas. However, as 55% indicated they "never" or "rarely" transferred, it would appear that transfers were not a great problem for most people.

Frequency of bus service to the home of the respondent was another variable considered in the transportation profile, the expectation being that people in outlying districts would be exposed to less frequent service. As service tends to be every twenty minutes throughout the core of the system, this was chosen as the "best" category; anyone serviced at less frequent intervals would be disadvantaged with regard to bus transit. If the two categories of twenty and thirty minute service were added together, only 20% of the sample would be left with less frequent service. Of these, the great majority were in outlying areas (more than three miles from the city centre), some of which were serviced only hourly. The advantage of residence location closer to the CBD is not that service on individual lines is more frequent, but that lines tend to converge and overlap, thus giving one a choice of bus service more frequent than twenty minutes (assuming a destination in the CBD).

In this study, 25% of the respondents held bus passes. The CRPB found that approximately one-third of the bus trips made by its sample were pass trips. Although a similar statistic was not calculated

for the Saanich study, the percentage of pass holders confirms the importance of the bus pass trip.

Each respondent's opinion of the bus service was solicited to determine his level of satisfaction. As only 16% found the service "poor" or "very poor," it would appear that most of those sampled were satisfied with the service. This conclusion is similar to that gained by the CRPB, which found "a high degree of satisfaction with the present level of most public services" (CRPB, 1969, p. 150).

This does not imply, however, that the elderly sampled have not encountered problems with the bus system; 56% responded affirmatively to the question, "Have you had any problems with the bus system?" The largest percentage of these problems (45%) were concerned with frequency of service; 20% of all problems listed dealt with evening service, 15% with Sunday and holiday service, and 10% with service to outlying areas. Physical problems encountered with the bus service made up the second largest problem area (19%); 14% of all problems were concerned with the bus stop itself (lack of protection, location of stop on hills, and distance from residence), while 5% were problems in getting on or off the bus. Pass hour restrictions were a third category of problems, accounting for 16% of the total. Fourth were problems in making connections and transfers (11%), followed by lesser areas of concern dealing with difficulty in understanding the system (5%) and high fares (3%).

In order to ascertain the overall importance of the bus system, the degree of inconvenience experienced during the 1971 bus strike was recorded. Of the sample, 40% replied they had been inconvenienced. Of those inconvenienced, approximately one-third indicated they "couldn't

get out," one-third that they "never went downtown," and 10% that they could not get to the doctor. In the opinion of the interviewer, many of those who stated that they were not inconvenienced actually were. Typical responses of many of these "non-inconvenienced" ones were, "The weather was no good anyway," or "I was able to walk or get a ride." It would appear that, to many of those interviewed, "inconvenienced" meant "shut in" rather than forced to seek alternatives, and they, therefore, did not categorize themselves as "inconvenienced."

Trip Data

The remaining information is based primarily upon specific trip data elicited by the questionnaire. In order to ascertain the relative importance of each form of transportation, the trip mode utilized on each specific trip was recorded, along with the related level of satisfaction. The total number of personal trips per week was tallied from this information, rendering a transit mode profile for all users (Table VII).

The driver variable indicates a bi-modal distribution among the sample; while a large segment of the sample (69%) made few or no trips by driving, most of those who drove did so for 81% of more of their total trips. The remaining were drivers who used their automobiles for 80% or fewer of their total trips. This might be explained by several factors: the use of car pools; influence of driving restrictions; and the large percentage of foot trips by those in close proximity to shopping facilities or other places of interest.

Only 2% of the sample utilized the automobile passenger mode of

TABLE VII

PERSONAL TRIPS BY MODE OF TRANSPORTATION AS PERCENTAGE OF TOTAL TRIPS

Mode of Transportation	% of Total Trips Used For	% of Respondents Using at Each Level
Automobile (Driver)	0 - 20%	69%
	21 - 40	0
	41 - 60	5
	61 - 80	6
	81 - 100	20
Automobile (Passenger)	0 - 20%	66%
	21 - 40	20
	41 - 60	8
	61 - 80	4
	81 - 100	2
Public Transit (Bus User)	0 - 20%	54%
	21 - 40	29
	41 - 60	5
	61 - 80	12
	81 - 100	0
Foot (Pedestrian)	0 - 20%	35%
	21 - 40	28
	41 - 60	12
	61 - 80	19
	81 - 100	6

transportation for 81% or more of their total trips. This transportation mode is not used for many of the sample's total trips; the data for all respondents indicated only 6% utilized this mode for three-fifths or more of their total personal trips. Respondents having automobiles share them with persons not having automobiles, for, while 67% of the sample made no trips as automobile drivers, only 41% made no trips as automobile passengers. Since few respondents used this mode, it appears that other forms of transportation are necessary for most personal trips.

A third form of transportation used was the public bus system. Most typically, and in agreement with the Capital Region study, 41% of the sample never used the bus and 54% used it "infrequently or never." Bus users made great use of other forms of transportation; 71% of the bus riders used the bus for two-fifths or fewer of their total trips, and none used the bus for over 80% of their total trips. This indicates that bus users either were not able to, or do not wish to, utilize the bus for most of their trips, but relied, to a great extent, upon walking or riding with others.

The final transit mode which was considered was walking. This transit mode displays the most even distribution and the smallest percentage of respondents (35%) in the 0 - 20% bracket. Relatively few relied upon this mode for over 80% of their trips, which indicates that this form of transportation, like use of the bus, requires complementarity with another mode of transportation. By eliminating those who indicated they made no trips by walking (21%), the modal class becomes the 21 - 40% level. The majority of those who walked did so for two-fifths or fewer of their total trips, and only 6% used this mode for 81% or more of their trips. Because of the observed complementarity of non-driving transportation modes, two general mode profiles are seen to emerge: driving, for those who have their own automobiles; and the combined mode of walking-riding for those who do not have their own automobiles. This is indicated by the large number of drivers (60%) who rely almost exclusively upon one mode of transportation, as compared to low concentrations in this high-usage bracket (81% or more of trips) for the other three transportation modes (3%, 0%, and 6%).

The percentage of trips made by all respondents of this survey population can also be ascertained. Of all trips made by all respondents, walking was the most popular mode (36% of all trips), followed by driving (27%), bus passenger (20%), and automobile passenger (17%). By combining both automobile classifications (44%), it is possible to compare directly with the CRPB study. According to the CRPB study, 55% of trips were made by automobile (CRPB, 1969, p. 155), and 21% by bus (CRPB, 1969, p. 142), leaving 24% for other transportation modes. In comparison, the Saanich sample appears to be less automobile oriented, makes approximately equal use of the bus, and makes far greater use of walking. This difference--fewer automobile trips and more foot trips--is accounted for by the reduced level of automobile availability; the CRPB study reported 41% of its sample were automobile owners (CRPB, 1969, p. 155), whereas in the present study, only 33% were drivers. This could, in turn, be related to differences in socio-economic status, as the Saanich sample included fewer people in the upper income levels.

Trip frequency (Table VIII) was calculated by adding the total number of trips each respondent made in the "typical" week. A relatively active sample is indicated, for only 1% of the respondents made two or fewer trips per week, while 57% of the sample left the house at least once per day, with a mean of 8.0 trips per week and a standard deviation of 3.6.

The Saanich survey indicated a positive degree of satisfaction (Table IX), as revealed by the response to the question, "How does transportation work out for you in general?" Fully 68% of the sample placed themselves in the "satisfied" and "very satisfied" groupings,

TABLE VIII

TRIP* FREQUENCY

Number of Trips per Week	Percentage of Respondents
Seldom or never	1%
1 - 2	0%
3 - 4	19%
5 - 6	22%
7 - 8	22%
9 -10	15%
11+	20%

*"Trip" is defined to include only those trips which emanate from the respondent's household.

TABLE IX

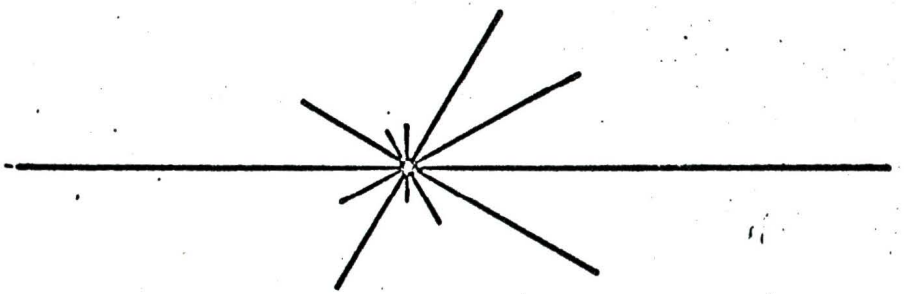
TRANSPORTATION SATISFACTION

Level of Satisfaction	Percentage of Respondents
Very Dissatisfied	0%
Dissatisfied	6%
Neutral, or no strong feeling	27%
Satisfied	58%
Very Satisfied	10%

while only 6% considered themselves "dissatisfied," and none "very dissatisfied."

Weekly trips by all respondents, according to trip purpose, have been derived from the specific trip data (Figure 4); this indicates

Figure 4: WEEKLY TRIPS OF ALL RESPONDENTS BY TRIP PURPOSE



Trip Purpose (by clock position):

1. Visiting (friends)
2. Visiting (relatives)
3. Shopping (day-to-day)
4. Shopping (other)
5. Medical
6. Library
7. Church
8. Organizations (other than Silver Threads)
9. Silver Threads
10. Recreation
11. Entertainment
12. Other

0 ½ 1
Trips per Week

C.U.P.

non-directional trip frequency by purpose, with "trip" again defined as all intra-urban trips emanating from the home. A more general trip profile, in terms of weekly trips from the residence, was derived by combining similar categories (Table X). This resulted in the categories of visiting (friends and relatives), shopping (everyday and less frequently needed items), organizations (Silver Threads and others), entertainment-recreation, services (medical and library), church, and other. Church was separated from "organizations" due to its more specialized function.

TABLE X

FREQUENCY BY TRIP PURPOSE

Trip Purpose	Trips per Week
Organizations	2.9
Shopping	2.5
Visiting	1.4
Entertainment/Recreation	.6
Church	.5
Services (Medical, Library)	.4
Other	.1

The elderly clearly have a different type of trip pattern than their younger counterparts. Table X illustrates that travel to organizations and meetings is the major category, followed by shopping and visiting. It is not possible to make a direct comparison with the Capital Region Planning Board's study, due to the difference in

presentation of data. Similarities are apparent, however, for the CRPB study found shopping to be "the most popular activity" as "31% of the Sample go on shopping trips at least once per week, and 54% do so two or more times" (CRPB, 1969, pp. 132-133). Recreation trips were second in frequency, followed closely by visiting; in both cases, only 30% of the sample did not make such trips (CRPB, 1969, pp. 132-133). Obviously, due to the nature of the sample population of the present study, its group meeting participation would be high; in contrast, the Capital Region study found "the church, club, or other group meeting category is the least significant of the activity groups (51% rarely or never participate)" (CRPB, 1969, pp. 132-133).

Not only is the type of trip taken by the elderly circumscribed, but the number of trips taken is also reduced. According to a study conducted by Wilbur Smith and Associates in four U.S. cities (Boston, Springfield, Philadelphia, and Milwaukee), the level of trip activity is inversely proportional to both income and age (Wilbur Smith, 1968, pp. 18-21). In Boston, for example, a person in the $5,000 - $6,000 income bracket, at the 40-49 age level, made just under four trips per day; a person in the same income bracket, but aged 70+, made just under three trips per day (Wilbur Smith, 1968, p. 20).

The generalized trip frequency data of Table X may be compared with classic transportation studies, such as the Chicago Area Transportation Study (CATS), the Detroit Area Transportation Study (DATS) and the Penn-Jersey Transportation Study (PJTS). Table XI illustrates this comparison, with the present study referred to as SSTS, or Saanich Silver Threads Study.

TABLE XI

PERCENTAGE OF TRIPS BY TRIP PURPOSE FOR ALL TRAVEL MODES ACCORDING TO TRANSPORTATION STUDY*

Trip Purpose	DATS	PJTS	CATS	SSTS
Work	43.4%	78.1%	36.2%	0%
Personal Business	9.5%	6.0%	18.2%	4.7%**
Social-Recreation	22.5%	3.7%	22.5%	58.3%
Eat Meal	3.2%	***	3.7%	***
Shopping	15.2%	3.2%	20.7%	29.7%
School	5.5%	8.3%	3.4%	0%
Other	***	.7%	6.0%	7.3%

* Trip home has been eliminated, where necessary, to enable comparison with SSTS data; figures are percentages of all other trips.

** May be low, as some trips are combined as shopping.

*** Not included as a category in this survey.

Source: DATS, cited in Meyer, et al., 1965, p. 90; PJTS, cited in Meyer, et al., 1965, p. 91; CATS, cited in Berry and Horton, 1970, p. 519.

In Table XI, CATS and DATS present fairly similar trip profiles. These contast greatly with PJTS, as this was concerned only with passengers of the subway/elevated system. These would be predominately commuters, as indicated by the high journey to work statistic. The comparison with the Silver Threads data gives strong and obvious documentation of the retirement status of the respondents. The loss of social roles (as noted in Chapter II) is clear, for social-recreation and shopping trips together account for 88% of the elderly's trips; further, shopping has a certain "social-recreation" function for the elderly, many of whom make daily shopping trips. Since shopping and

social-recreation trips are not generally made during the peak travel hours (7:00 - 9:00 a.m. and 4:00 - 6:00 p.m.), which are journey to work related, it is clear why one-third of the non-peak users of the bus system were elderly, as noted by the downtown pilot study.

Drivers vs. Non-Drivers

From the results of this general trip and profile data, one might conclude that the respondents as a whole appear to be active and satisfied with respect to their transportation. Before examining the correlation matrix, it is of value to re-examine pertinent profile data from the separate populations of automobile users and non-automobile users. This data (Table XII) may also be helpful in explaining and giving further meaning to the correlation data.

The drivers, as might be expected, were a younger group (only 7% aged 80+, as compared to 30% of the non-drivers), fewer were widowed (4% vs. 63%), and more were living with their spouse (89% vs. 28%). Driving, to this age group, is considered to be largely a male role; accordingly, 64% of the drivers were males, as compared to only 40% of the non-drivers. This characteristic was also noted by Carp (1971, p. 185). The drivers were more residentially stable than the non-drivers, both in years in Victoria CMA and at their present address; 92% of the drivers had lived in Victoria CMA for ten years or longer, as compared to 71% for the non-drivers. Income, too, displayed a marked difference in distribution; drivers recorded a significantly higher income profile, with only 12% in the under $200 per month income category, as compared with over half of the non-drivers in this income bracket. According to

TABLE XII

COMPARISON OF PROFILE RESULTS: DRIVERS VS. NON-DRIVERS

Characteristic	Drivers	Non-Drivers
Age	35% = 60-70 7% = 80+	12% = 60-70 30% = 80+
Sex	64% = male	40% = male
Marital Status	89% = married, living w/spouse 11% = alone	32% = married, living w/spouse 39% = alone
Years Residence (Victoria)	92% = 10+	71% = 10+
Income	12% = $100 - 200 58% = 201 - 300 19% = 301 - 400 11% = 401 - 500	51% = $100 - 200 37% = 201 - 300 12% = 301 - 400 0% = 401 - 500

the Hollingshead scale, both drivers and non-drivers displayed a similar distribution of social rank scores (mean scores of 3.9), and there was no marked health difference, according to the self-ranking scale employed. Those with automobiles tended to live slightly farther from the CBD--an average of 2.65 miles, as compared to 2.40 miles for the non-drivers.

From the data on transportation and trip variables, it is clear that drivers concentrated on usage of the private automobile, while non-drivers divided their usage among the three other available modes of transportation. Walking was the second most frequent form of transportation among the drivers, averaging 17% of all trips. Almost half

of the drivers, however, indicated that they made no walking trips. Of greater interest is the trip mode profile of the non-drivers. Walking was by far the most used means of transportation, with 44% of the trips taken by foot. Eighty-two percent of the non-drivers took at least one-fourth of their trips by foot. Bus and automobile passenger trips share the remainder, with no appreciable difference between them.

TABLE XIII

COMPARISON OF TRIP MODE USAGE: DRIVERS VS. NON-DRIVERS

Trip Mode	Drivers (means)	Non-Drivers (means)
Auto (driver)	70% of all trips	0% of all trips
Auto (passenger)	5% " " "	28% " " "
Bus	7% " " "	27% " " "
Foot	17% " " "	44% " " "

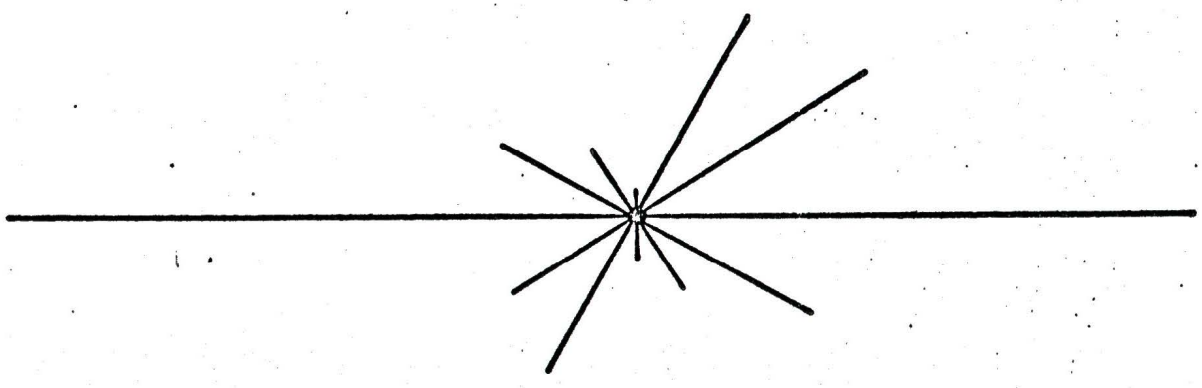
From the results of Carp's study (Chapter III), together with the above information, one could conclude that drivers will make more trips and be more satisfied with their transportation. This can be directly seen by comparison of the satisfaction and frequency means for the respective groups. Drivers make an average of 9.0 trips per week, while non-drivers make 7.2; drivers also appear to be more satisfied, although both group means register in the "satisfied" range of the 1 - 5 scale employed in the study. The mean class score for drivers was 4.0 ("satisfied"), and for non-drivers 3.6, with 3.0 being the "neutral" position. The far greater number of driver respondents in the "very

satisfied" class is indicative of the overall ability of the automobile to meet its owner's needs; 21% of the drivers rated themselves "very satisfied" with their transportation compared with only 4% of the non-drivers.

The questionnaire also sought to ascertain the extent of latent demand among separate populations of drivers and non-drivers. Although 16% of the total sample expressed a desire to "get out more often," there was a marked difference between these two modal classes. The non-drivers had a greater desire, for 18% of that group, as compared to 7% for the drivers, indicated this desire to "get out more often." In addition, although 20% of the non-drivers felt there were activities that were unattainable to them due to transportation difficulties, none of the drivers felt so restricted. It can, therefore, readily be seen that automobile drivers exhibit little latent demand, while non-drivers are restricted by their available mode of transportation and do display this demand. Typically, the non-driver expressed an inability to get out of the urban sphere to the outlying park and recreation areas. Only some of these areas are accessible by bus, and many respondents felt restricted by the operating hours of the bus system.

In order to assess the relative mobility of the non-driver, as contrasted to that of the automobile driver, the "mobility star" of Figure 4 has been disaggregated to form separate "stars" for drivers and non-drivers (Figures 5 and 6). This produces a mobility "star" that, in general, is substantially larger for the driver than for the non-driver. It will be observed, however, that the "other" trip category indicates a slightly higher trip level for the non-driver.

Figure 5: WEEKLY TRIPS OF DRIVERS BY TRIP PURPOSE

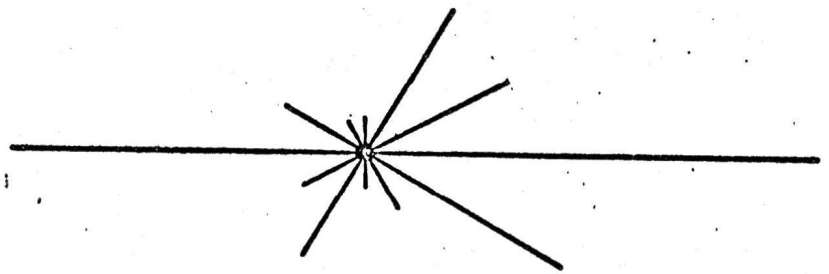


Trip Purpose (by clock position):
1. Visiting (friends)
2. Visiting (relatives)
3. Shopping (day-to-day)
4. Shopping (other)
5. Medical
6. Library
7. Church
8. Organizations (other than Silver Threads)
9. Silver Threads
10. Recreation
11. Entertainment
12. Other

0 ½ 1
Trips per Week

C.U.T.I.

Figure 6: WEEKLY TRIPS OF NON-DRIVERS BY TRIP PURPOSE



Trip Purpose (by clock position):

1. Visiting (friends)
2. Visiting (relatives)
3. Shopping (day-to-day)
4. Shopping (other)
5. Medical
6. Library
7. Church
8. Organizations (other than Silver Threads)
9. Silver Threads
10. Recreation
11. Entertainment
12. Other

0 ½ 1
Trips per Week

C.U.P.

Finally, the "other shopping" trip level is nearly equal; perhaps it is easier for the elderly non-driver to make a weekly shopping trip into Victoria CBD than it is to make a daily shopping trip to the local market.

A further comparison of these two modal groups has been gained by utilizing the condensed trip purpose data of Table XI (with "other" discarded), and calculating this for drivers and non-drivers (Figure 7). In all categories, the driver is more mobile (i.e., makes more trips) than the non-driver; in the category "organizations" he makes an average of one additional trip per week.

Correlation of Variables

The final phase of the study involved the analysis of the matrix (Table XIV) produced through the correlation of eleven variables chosen for their presumed significance (pages 55-57). As in Carp's study, the major area of concern is the correlation of significant variables to frequency and satisfaction in transportation. Before discussing these variables, it is of value to turn to the significant correlations produced among the other variables. Significance level is $p = 0.05$.

Age correlated significantly, and positively, with health and percentage of automobile passenger trips, although the correlation levels are rather low (0.229 and 0.289 respectively). Age, as has been discussed, is a difficult variable to measure; in this study, it would appear that older people perceive themselves to be in better health. Often, the respondent was heard to reply that he was in good health "for a person my age." Although chronological age is measurable objectively, health

TABLE XIV

FINAL CORRELATION MATRIX

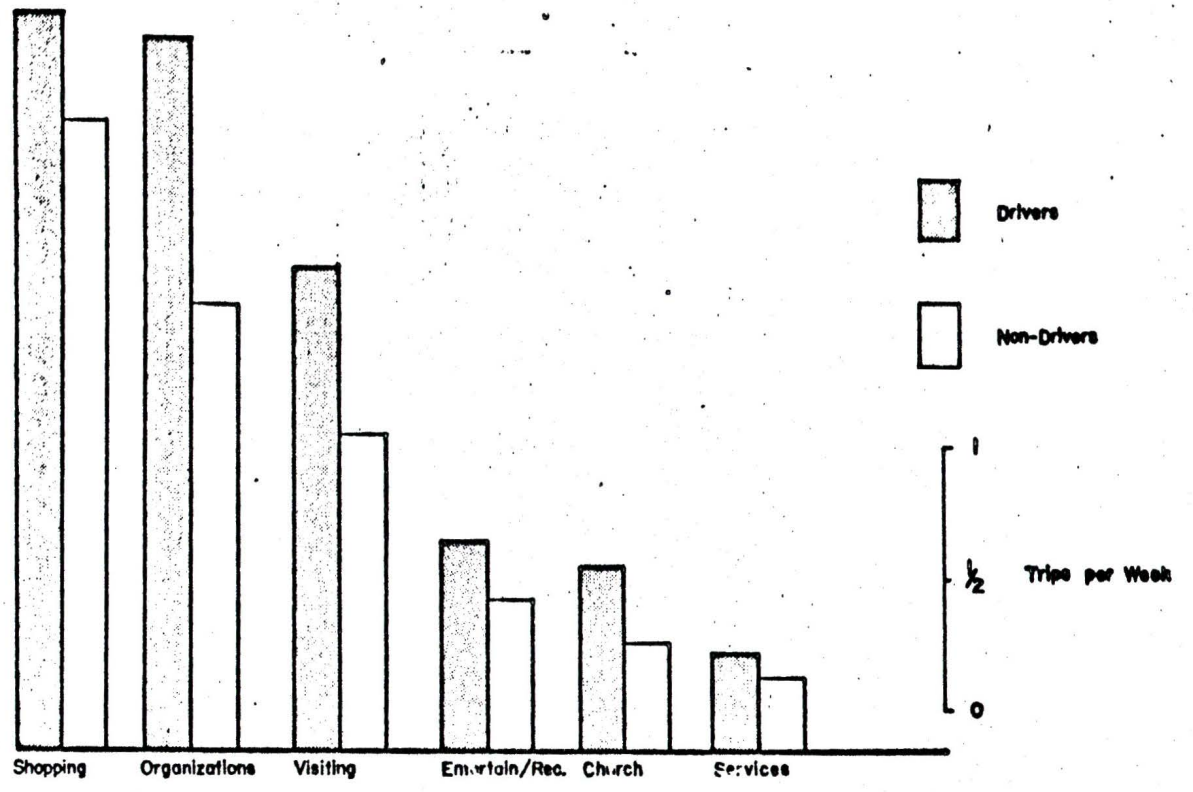
Spearman Rhos (Below Diagonal) and T-Ratios (Above Diagonal)

Variables	1	2	3	4	5	6	7	8	9	10	11
1 Age		1.38	-0.954	2.599	-1.105	-2.772	2.183	-1.079	-0.936	-0.099	3.33
2 Income	+0.124		-0.797	-0.028	2.856	3.344	1.841	5.180	-1.889	-7.585	0.341
3 Status	-0.086	-0.072		-2.916	-0.439	2.259	2.291	1.691	-0.509	-0.577	-2.182
4 Health	+0.229*	-0.002	-0.256*		-0.392	1.738	2.893	-0.177	0.877	0.910	-0.102
5 Distance	-0.100	+0.251*	-0.039	-0.035		-0.104	1.742	4.057	-3.131	-4.868	0.430
6 Frequency	-0.244*	+0.290*	+0.201*	+0.156	-0.009		3.335	4.185	-1.246	-3.734	-2.589
7 Satisfaction	+0.194*	+0.165	+0.203*	+0.254*	+0.156	+0.290*		5.039	-3.816	-2.781	-0.690
8 % Driver	-0.097	+0.426*	+0.152	-0.016	+0.346*	+0.355*	+0.416*		-9.743	-10.357	-5.877
9 % Bus	-0.084	-0.169	-0.046	+0.079	-0.273*	-0.112	-0.327*	-0.663		3.351	0.245
10 % Pedestrian	-0.009	-0.567*	-0.052	+0.082	-0.404*	-0.321*	-0.245*	-0.685*	+0.291*		-0.188
11 % Passenger	+0.289*	+0.031	-0.194*	-0.009	+0.039	-0.229*	-0.062	-0.471*	+0.022	-0.017	

* Significant correlation.

Critical value for p = 0.05 is 1.960.

Figure 7: WEEKLY TRIPS BY TRIP PURPOSE: DRIVERS VS. NON-DRIVERS



is not, and the correlation of these two variables is therefore reflective of the respondent's self analysis of his state of health. If another measure of health, such as number of trips to the doctor, had been used, the result might have been different. That older people tend to make more automobile passenger trips is not unusual; as people suffer from increasing loss of sensory acuity, due to agedness, they can no longer safely drive. They might, therefore, make more use of the automobile passenger mode.

Distance from CBD, percentage of trips by foot, and percentage of driver trips correlate significantly to income; the latter two are strong correlates (-0.567 and +0.426 respectively). Both Carp and the CRPB found that people of higher income were more likely to be drivers, which is borne out by these data; since automobile drivers make most of their trips by automobile, it also follows that they would make relatively fewer trips by foot. That higher income people tend to live farther from the CBD is expected; even though the correlation is not particularly high (0.251), it is consistent with commonly accepted views regarding the structure of the city.

Social status correlates significantly, and negatively, with health (-0.256) and percentage of trips as automobile passenger (-0.194). It is unexpected that health should correlate negatively with social status; this does not indicate, however, that higher status people are less healthy, but, rather, that their perceived state of health tends to be ranked lower. This could be due to several other influences, such as heightened state of awareness, greater degree of preoccupation with health, or any of a great many factors. It is not, however,

unexpected that people of higher status tend to make fewer automobile passenger trips, as they would be more likely to be drivers (a positive, but not significant, correlation). It is of further interest to note that, although social status was expected to reflect income, there is not a significant correlation between these two variables. This might be due to the difficulty in employing the Hollingshead scale, or the low income levels of the retired respondents.

Distance from CBD correlates significantly with income, as noted; in addition, it correlates with percentage of trips as driver (+0.346), bus user (-0.273), and pedestrian (-0.404). Due to the decreasing bus service at greater distances from the CBD, and the decreased density of commercial enterprises, it is not surprising that these two variables should correlate negatively. Further, with increased distance from the CBD, bus transportation is less reliable, and the distances which must be traversed are greater. It follows that those respondents who are farther from the CBD will make more automobile driver trips.

The variable "percentage of trips by bus" has been discussed in relation to trips as driver and distance from CBD. In addition, bus users tend to make more pedestrian trips (+0.291); this is illustrative of the complementarity of transportation modes discussed beforehand, and is consistent with findings of the CRPB study.

From these correlates some conclusions can be drawn relative to the separate populations of drivers and non-drivers. Drivers tend to have higher incomes and tend to live at a greater distance from the CBD. As this variable correlates negatively with the other transportation modes, and the correlates are among the strongest of the matrix (-0.663,

-0.685, and -0.471), this is a single mode transportation system. On the other hand, non-drivers tend to have lower incomes and live closer in; they tend to use more than one mode, as evidenced by the significant positive correlation between trips by bus and trips by foot. This is a confirmation of the previous discussion of drivers and non-drivers (pages 81-89).

Correlates of Frequency

Trip frequency correlates significantly with seven variables (Table XV). Although the correlation rho value itself is not particularly high (the highest being .355), the t test values do indicate statistical significance (Table XIV) at the .05 level. The two variables with the highest correlation with frequency are percentage of trips by automobile (driver) and percentage of trips by foot, a negative correlation. Since those who make more trips by foot tend not to have automobiles, one may conclude that non-drivers make fewer total trips.

TABLE XV

SIGNIFICANT* CORRELATES OF TRIP FREQUENCY

Variables	Correlation Coefficient (rho)
% of Trips (Driver)	+0.355
% of Trips (Pedestrian)	-0.321
Income	+0.290
Satisfaction in Transportation	+0.290
Age	-0.244
% of Trips (Automobile Passenger)	+0.229
Social Status	+0.201

* $p = 0.05$

The high ranking of income as a correlate gives credence to the view that higher income people have more transportation options; it also is in agreement with the findings of Wilbur Smith and Associates (pp. 75-76). Satisfaction in personal transportation arrangements is positively correlated with frequency, but the level of correlation is not high (+0.290); this relationship, although positive, is less than anticipated. Because of the greater loss of sensory acuity with increasing age, it is to be expected that age correlates negatively with trip frequency. A third trip-mode variable (automobile passenger) correlates significantly, and positively, with frequency, as does social status. It is presumed that social status correlates positively for a similar reason as income, although the two variables of income and social status themselves do not significantly intercorrelate. It would appear that people who have automobile availability, even if they do not drive, are likely to make more frequent trips than those who must rely upon walking or the bus. Although bus usage did not correlate significantly with trip frequency, it did correlate negatively (-0.112), and the absolute value of the difference between driver and bus user modes is .467.

It is possible to compare these results with those obtained by Carp (Table XVI), even though the variables are not exactly the same. The major difference is the lack of health and location of residence as significant variables in the Saanich study. Since driver trips and foot trips are negatively correlated (-0.685), the first two significant correlates to frequency of the Saanich study can be equated with Carp's "has car" variable, which ranked fifth. Ethnicity of neighbourhood was not used as a variable in the Saanich study due to the ethnic homogeneity

TABLE XVI

COMPARISON OF FREQUENCY CORRELATES

Rank of Correlate	Carp	Saanich Silver Threads
1	Health	% Trips (Driver)
2	Location	% Trips (Pedestrian) (-)
3	Ethnicity*	Income
4	Income	Satisfaction**
5	Has Car	Age (-)
6	Age (-)	% Trips (Auto Passenger)
7	Housing	Social Status

* Not included in Saanich study due to homogeneity of the sample.
** Included in Carp's study only as a dependent variable.
(-) Negative correlation.

of the sample, and, since satisfaction was used by Carp as a dependent variable only, it cannot be compared. Income and age each reported similar results; if "ethnicity" were removed from Carp's study (as a variable), they would each have the same rank. Carp's variable "housing quality" is a surrogate for social status, and is an approximation of the Hollingshead index as used in the Saanich study. The two studies, therefore, present similar correlation results, with the important difference that automobile ownership-related variables were of greater significance in the Saanich study, while health and location of residence ranked far greater in importance in the Carp study.

Correlates of Satisfaction

Seven variables correlated significantly ($p = .05$) with satisfaction. In this case, percentage of trips by automobile (driver) is

again the highest correlate, but with a higher rho level of +0.416 (Table XVII). Unlike its relationship with trip frequency, percentage of trips by bus is significantly correlated with satisfaction, and is here the second highest correlate. The absolute value of the difference in rho values of these two correlates is greatly increased from 0.467 to 0.743. This would indicate that drivers tend to be satisfied, whereas bus users tend to be dissatisfied. Frequency of trips registers a +0.290 correlation with trip satisfaction; this, as stated previously, was lower than expected. Health figured significantly in relation to satisfaction, although it did not do so in relation to frequency. It would seem logical that healthy persons would be more satisfied in their transportation, but, also, healthy persons should make more trips. Perhaps, if trips for non-medical purposes only had been calculated, this health variable would have correlated significantly with trip frequency as well. Percentage of trips as a pedestrian is correlated negatively with satisfaction, thus indicating that people who tend to walk more tend also to be less satisfied. Social status again was a positive correlate; since people of higher social status tend to make more trips, it follows that they would be more satisfied as well. Age is the final significant correlate, with a low correlation of +0.194. It would appear that older people tend to be more satisfied, and yet they tend to make fewer trips (-0.244). This seems incongruent, especially since satisfaction and frequency are positively correlated (+0.290). Perhaps older people have lower personal mobility standards; many older respondents, although they admitted that the bus system was not sufficient, did not rate it as "poor," because they realized that few people used it. They were able

to compare its efficiency and level of usage with pre-war levels, and did not expect an efficient system. This, as with health vs. frequency, is an objectively measured variable contrasted with a subjectively measured variable; it is difficult to speculate as to the reason behind the respondent's subjectively arrived at score.

TABLE XVII

SIGNIFICANT* CORRELATES OF TRIP SATISFACTION

Variable	Correlation Coefficient (rho)
% of Trips (Driver)	+0.416
% of Trips (Bus)	-0.327
Frequency of Trips	+0.290
Health	+0.254
% of Trips (Pedestrian)	-0.245
Social Status	+0.203
Age	+0.194

* $p = 0.05$

Investigation of the data again invites comparison with Carp's results (Table XVIII). As in the case of frequency, health is the first-ranking correlate of satisfaction in Carp's study. It did correlate significantly with satisfaction in the Saanich study, but ranked fourth, following three trip-related variables. The two trip mode variables of driver and bus user can be approximated to Carp's "has car" variable; they have high negative correlates (-0.663), indicating that those who drive do not tend to make bus trips. Location again figured strongly in Carp's study, but did not correlate significantly in the Saanich

TABLE XVIII

COMPARISON OF SATISFACTION CORRELATES

Rank of Correlate	Carp	Saanich Silver Threads
1	Health	% Trips (Driver)
2	Has Car	% Trips (Bus) (-)
3	Location	Frequency of Trips**
4	Job Level	Health
5	Sex*	% Trips (Pedestrian) (-)
6	Income	Social Status
7	Ethnicity	Age

* Not included in Saanich study.
** Included in Carp's study only as a dependent variable.
(-) Negative correlation.

study. This could be due to the dispersion of Carp's sample throughout the city, whereas the Saanich sample was composed primarily of suburban dwellers. Job level is another surrogate measure of social status, which again correlated significantly in the Saanich study. As "sex" was not included as a variable in the Saanich study, no direct comparison can be made. Income, which correlated significantly in Carp's study, did not do so in the Saanich sample. Carp's usage of income in conjunction with other variables (job level, housing quality) is a determinant of the overall classification of "socioeconomic level"; the variable "social status" serves the same function in the Saanich study. Ethnicity of neighbourhood cannot be compared, as this was not a variable in the Saanich study. Age did not appear among Carp's first seven variables; its appearance as a positive correlate in the Saanich correlation matrix, as discussed above, was unexpected.

Classification of Significant Variables

After presenting the correlates of trip frequency and satisfaction separately, it is possible to develop a list of those variables which appear to have the greatest bearing on these two aspects of mobility. Carp attempted to place "person-situation" variables in order of importance (unfortunately, without attaching the attendant correlation levels), and, in so doing, combined certain variables under broader classifications, e.g., "income" and "job level" under "socio-economic level." Thus, her research resulted in the following ordinal list of mobility correlates (in decreasing importance): health; location of residence (i.e., distance from CBD); automobile ownership; socio-economic status; and neighbourhood ethnicity (Carp, 1970a, pp. 174-175). In the present study, residence location was not found to be significant, and neighbourhood ethnicity was not considered. In attempting to develop a similar classification for the present study, a framework has been suggested and portrayed (Table XIX). Accordingly, mode of transportation is the most important variable classification, being composed of the variables bus user, pedestrian, automobile driver and passenger. The second classification is socio-economic level, composed of the variables income and social status. The final category is that of sensory acuity, composed of the variables health and age. This final class, obviously, has mixed and somewhat unexpected results, which are most probably due to the difficulty in quantitatively expressing "agedness" and "healthfulness."

TABLE XIX

CLASSIFICATION OF SIGNIFICANT VARIABLES RELATING TO FREQUENCY AND SATISFACTION

Classification	Variables	Frequency	Satisfaction
Mode of Transportation	Automobile Driver	+	+
	Automobile Passenger	+	*
	Bus Passenger	*	-
	Pedestrian	-	-
Socioeconomic Level	Income	+	*
	Social Status	+	+
Sensory Acuity	Health	*	+
	Age	-	+

* Not significant ($p = 0.05$) for this variable.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

In order to place conclusions in their proper context, this chapter first reviews some of the considerations discussed prior to the presentation of the field research. The type of activity which has been discussed is, and has long been, the subject of the urban planner's studies. If the planner is to provide adequate physical systems for our city residents, in this case with regard to urban transportation, he must determine the needs of the people. This is the essential ingredient in Gans' concept of "user-oriented" planning. The planner must venture forth into the community to determine what problems the people perceive, and what solutions they feel would help to alleviate those problems. This is, perhaps, best stated by Mumford: ". . . Unless human needs and human interactions and human responses are the first consideration, the city, in any valid human sense, cannot be said to exist, for, as Sophocles long ago said, 'The city is people'" (Mumford, 1970, p. 404).

The elderly, as a clearly recognizable segment of the population structure, have characteristic problems. As a group, they are typically poor. One-half of them do not have private automobiles. Many are confused by features which younger people cope with unnoticingly, such as steep hills and steps, or poorly given directions. They are at a life stage characterized by a "shrinking" social and physical sphere. In order to maintain their own personal health, they must maintain their urban contacts. Rather than being less important for the elderly, the

provision of transportation is, thus, more important. The need for social interaction and contact is great, and yet the elderly are experiencing a decreased environmental competence. In order to render the physical environment more supportive of the life styles of such people, the physical systems of the city must be accommodated to their needs.

The North American city, however, is automobile oriented; the neighbourhood centres of the pre-automobile era are disappearing, to be replaced by the regional centres of today. For a population grouping which relies to such a great extent upon public transportation, the current situation can be very frustrating. If one must rely upon an arterial-CBD oriented transportation system in an outward "exploding" metropolis, already difficult problems become compounded. In the case of the elderly, for whom activity level and morale level seem to be positively correlated, anything which reduces that activity level may have deleterious consequences.

Against this background, the present study has examined an elderly group in terms of its intra-urban mobility. The findings of the survey sample can be taken as representative only of the sampling frame, i.e., the members of the Saanich Silver Threads Centre. It is concluded that the members of the sample were mobile and had few problems in getting about in the city. The average figure of eight trips from home per week is felt to be indicative of a mobile population; it certainly does not indicate the behaviour pattern of a group of "shut ins." This contrasts favourably with the results of other surveys (Wilbur Smith, 1968, p. 18); in Springfield, the average trip rate for persons in the 60-69 age bracket and the $4,000 - $5,000 income group was about

1.8 trips per day, with "trip" defined to include all person trips, whether begun at home or elsewhere. The Saanich sample, which was of trips from home only, would therefore, using Smith's definition, yield a trip level of over 16 trips per week, or an average of over two trips per day.

In addition to describing level of trip frequency of the sample, a second objective was to determine how satisfied the elderly sample was in its ability to get about in the city. Generally, it is concluded, they are not dissatisfied. This is indicated by the high scale score levels, with 58% of the sample indicating a score of "4" on the 1 - 5 scale employed; 95% of the sample scored themselves either in the middle or on the positive side of the scale with regard to this variable.

The study also proposed several hypotheses (Chapter IV), most of which were derived from prior studies, such as those of Carp. These hypotheses were intended partially as a check on what have been regarded as acceptable statements about the mobility behaviour patterns of the elderly. If the population under study is representative of elderly people, as portrayed by other studies, it should be expected to confirm these hypotheses.

The first hypothesis suggested that mode of transportation is the major variable affecting trip frequency. It appears that this hypothesis stands. Certainly some of Carp's strongest correlates, such as location of residence and health status, have lost much of their importance in the Saanich study, while all of the modal variables figured significantly. Although automobile drivers made more trips than non-drivers, and non-automotive modes were negative correlates, it cannot entirely be asserted

that this is due to mode of transit alone. Automobile drivers were also younger, of higher income, and were more likely to be married and to maintain their own residence. One could discount some of the non-modal variables, as they did not strongly correlate with trip frequency. However, due to the nature of the analysis employed, it is not possible to state causal relationships. As maintained at the outset, the function of the paper is primarily exploratory and descriptive, rather than explanatory.

The second hypothesis was that mode of transportation would be the major variable affecting satisfaction in transportation. Table XIX demonstrates the strength of transportation-related variables in correlating with this variable. Among non-transportation variables, only health correlates at a reasonably high level. It would also appear that this hypothesis can be accepted, although the same reservations must be adopted as above. In this case, three of the four trip-mode variables correlated significantly with satisfaction. Although the non-modal variables of age, health, and social status are also significant correlates of satisfaction, their correlations place them, generally, in positions of lower ranking importance due to their rho values.

The third hypothesis stated that elderly drivers would be more mobile than elderly non-drivers. This has been convincingly demonstrated by weekly trip average of 9.0 and 7.2 respectively. It is not shown, however, that the non-drivers suffer appreciably thereby. Indeed, a trip level of 7.2 trips from home per week is not particularly low (compare with Wilbur Smith data, above). Perhaps the most revealing

characteristic of the non-driver is that he must rely upon foot trips to a great extent. With 44% of personal trips being foot trips, the amount of trips by public transit is rather insignificant, being about the same proportion of the total as trips taken in another's automobile. A reason for the seemingly high trip activity level among the non-drivers must be postulated. It has been stated that the structure of the North American city today does not lend itself well to the public transit system user; in comparison with larger cities, however, the Victoria CMA, though having its share of regional shopping centres, retains a large number of corner grocery stores and small neighbourhood centres. Such small stores are not major generators of vehicle traffic; they serve the needs of pedestrian members of the neighbourhood and help explain the high proportion of foot trips among those who do not drive. Perhaps, were the land use structure of the Victoria CMA radically different, the elderly non-drivers would suffer greatly in terms of their daily trip activity.

Fourthly, it was hypothesized that elderly drivers would be more satisfied in their ability to get about than would elderly non-drivers. With regard to the correlates of satisfaction, all of the non-driving modes were negatively correlated (although automobile passenger was not significantly so), while the driver mode was a significant positive correlate. In addition to this, 20% of the non-drivers felt restricted in their ability to get about in the city, while none of the drivers felt so restricted. However, when asked "How do transportation arrangements work out for you in general?" the responses of the drivers and non-drivers did not vary greatly. Non-drivers registered on the "satisfied" spectrum

of the five point scale employed, with a mean of 3.6, while drivers registered a mean of 4.0. This, however, was intended partially as a check on the data obtained from the questions relating to specific trips, and does not take precedence over it. Therefore, one could accept this hypothesis on the basis of data received.

The final hypothesis was that elderly people who use the public transit system would be greatly restricted in their intra-urban mobility. This has been partially discussed with regard to the third variable above. The results are somewhat mixed. Although the bus user variable does correlate negatively with frequency of trips, it does not do so significantly. It does correlate significantly and negatively with satisfaction; this might indicate that, although the bus user is not satisfied with this mode of transportation, it is adequate. However, as public transit meets the needs of only one-fourth of the trips of the non-driver, it appears that this mode is largely inadequate. Of those who do use the bus system, 36% make only one or two bus trips per week, 42% three or four bus trips, and 22% five or more trips per week. This is illustrative of the CRPB's "hard core" of riders, and it also demonstrates that, for most bus users, the bus is largely inadequate. This could be due to the proximity of neighbourhood centres within walking distance or other land use factors, and therefore not representative of a "great restriction." It is not possible, however, to accept this hypothesis, as based upon the information generated.

An elucidation of the nature of the mobile elderly person, as proposed by Carp, was also attempted. A similar profile emerged, although comparison with regard to distance from CBD and ethnic makeup

of neighborhood cannot be made here. However, it appears that more mobile persons (who are also more satisfied) tend to be drivers (of which 60% are males), tend to have higher incomes, and tend to be younger than their less mobile non-driving counterparts.

Recommendations

It was anticipated that some recommendations would emerge relative to the improvement of the public bus system of Victoria. In the interim since completion of the field study, improvements have been made to the system which incorporate some of these recommendations. Therefore, this list is based upon the 1972 bus system as it existed at the time of the survey. Problems were noted which, if corrected, would help eliminate several of the difficulties found by the elderly, and might produce a bus system that could provide transportation for a greater proportion of the total trips. Most elderly people, although they have seen public transportation decline in their lifetimes, were very understanding of the situation; neither were the elderly particularly outspoken regarding their objections to the bus system. When asked directly, however, they did bring several problems to light, which, together with their attendant suggestions for improvement, are listed in increasing order of complexity.

First, all buses should have numbers on both front and back, and be clearly marked as to routing and destination. Several people noted the frustration of watching a bus pull away and not being able to tell if it was the bus they wanted. If the buses could be equipped with lower steps, or otherwise made easier to get into and out of, it would help

many elderly people. The first step is very high, and in areas such as Saanich, where there is no curbing, elderly people experience boarding and alighting problems. Additional bus stops, not located at the top of a hill, could be helpful in some neighbourhoods; to the residents of Hampton House, this was a particular problem. Both benches and protection at bus stops are needed. Many Victoria bus stops have inadequate provision for benches, including the large downtown stops. For the elderly, waiting at a bus stop can be very tiring; the ability to sit and rest would help alleviate this problem. An additional aspect of this difficulty is the lack of protection from wind and rain. If some stops could be covered, this would help those who must stand in the rain waiting for their bus.

A common problem cited was the time restrictions of bus passes. As many Silver Threads classes begin at 10:00 a.m., there is little value in possessing a pass which cannot be used until that time; obviously, a person must take the bus prior to the appointment time. A 9:00 a.m. - 4:00 p.m. pass would, therefore, help the elderly, and at the same time not interfere with the peak hour operation of the system (7:00 - 9:00 a.m. and 4:00 - 6:00 p.m.). Further, many noted that bus service does not begin early enough on Sunday morning; if all runs began by 9:00 a.m., instead of 10:00 a.m., this would help those people in the outlying areas who cannot get to church by 11:00 a.m. if they ride the bus.

Some suggestions would require a more radical restructuring of the system. Certainly, more frequent service is desired by everyone. None found the twenty minute service inadequate, but many felt that

evening service was both too infrequent and discontinued too early, making it impossible to attend evening programmes or events. This reduction was made as an economy measure after the 1971 strike settlement. Of course, a great problem for the residents of Saanich is that they live in the suburbs of a city with a CBD-oriented transportation system. If the aforementioned proposals of the Silver Threads brief were implemented, resulting in crosstown routes, it would be possible for many of the Centre's members to commute more easily, without necessitating the extra trip into Victoria CBD for purposes of transfer. An addition to the system in the form of a door-to-door "dial-a-bus," as currently used in Regina and other cities, would also alleviate many of the aforementioned problems.

A further recommendation would be to carry out this study among the less active half of the elderly population, i.e., those who not belong to any organizations such as senior centres. Perhaps those of low activity level can lend further insights into the problems of mobility amongst the elderly and aged.

From the data on separate populations of drivers and non-drivers, it can be concluded that the bus system serves an older and less financially secure portion of the elderly population than does the private automobile. It is precisely these people who are most likely to conform to the "syndrome of deprivation."

It has been stated that this thesis is concerned with a planning issue--providing an input of knowledge concerning human needs--and yet it must be realized that the various civic planning bodies of the Capital Region have little influence on the operation of the bus system. As

long as the provision of public transit depends upon minimization of financial loss, it is not possible to meet the needs of the elderly or any other group, except perhaps the CBD-bound peak hour commuter. In the interim, that segment of the elderly community which relies upon forms of transportation other than their own private automobile must continue to look beyond public transportation to gain a reasonable degree of mobility and maximize the advantages of an urban existence.

LITERATURE CITED

Alexander, Christopher. "The City as a Mechanism for Sustaining Human Contact." Environment and Man: The Next Fifty Years. Edited by W. R. Ewald. Bloomington: Indiana University Press, 1967.

Andryshak, Richard. Cited in The 1971 White House Conference on Aging: The End of a Beginning? National Retired Teachers Association and American Association of Retired Persons. Washington: Government Printing Office, 1971.

Atchley, Robert C. The Social Forces in Later Life: An Introduction to Social Gerontology. Belmont, Calif.: Wadsworth Publishing Co., 1972.

Axelrod, Morris. "Urban Structure and Social Participation." Cities and Society: The Revised Reader in Urban Sociology. Edited by Paul K. Hatt and Albert J. Reiss, Jr. New York: Free Press of Glencoe, 1957.

Babbie, Earl R. Survey Research Methods. Belmont, Calif.: Wadsworth Publishing Co., 1973.

Back, Kurt W., and Gergen, Kenneth J. "Cognitive and Motivational Factors in Aging and Disengagement." Social Aspects of Aging. Edited by Ida H. Simpson and John C. McKinney. Durham, N.C.: Duke University Press, 1966.

Barker, Pauline. Interviews at Victoria Silver Threads Centre. Spring, 1972.

Beauvoir, Simone de. The Coming of Age. Translated by Patrick O'Brian. Warner Paperback ed.; New York: Warner Books, 1973.

Bello, Francis. "The City and the Car." The Exploding Metropolis. The editors of Fortune. Anchor Books ed.; Garden City, N.Y.: Doubleday and Doubleday, 1958.

Berger, Morroe; Abel, Theodore; and Page, Charles H. Freedom and Control in Modern Society. New York: Dan Nostrand Co., 1954.

Berry, Brian J. L., and Horton, Frank E. Geographic Perspectives on Urban Systems. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Beshers, James M. Urban Social Structure. New York: Free Press of Glencoe, 1962.

Blenker, Margaret. "Comments." Aging and Leisure: A Research Perspective into the Meaningfulness of Time. Edited by Robert W. Kleemeier. New York: Oxford University Press, 1961.

Boyd, Rosamonde R., and Oaks, Charles G., eds. Foundations of Social Gerontology. Columbus: University of South Carolina Press, 1969.

British Columbia Hydro Transportation Department. Greater Victoria Bus Routes. Unpublished route map, 1972.

Bruck, Henry. Cited in Perspective in Aging: Operational Focus. Edited by Francis G. Scott and Ruth M. Brewer. Corvallis, Ore.: Continuing Education Publications, 1971.

Burgess, Ernest W. Aging in Western Societies. Chicago: University of Chicago Press, 1960.

Busse, Ewald E., and Pfeiffer, Eric, eds. Behavior and Adaptation in Late Life. Boston: Little, Brown, and Co., 1969.

Cantilli, Edmund J., and Schmelzer, June L., with the staff of the Division of Information, Administration of Aging, eds. Transportation and Aging: Selected Issues. Washington: Government Printing Office, 1970.

Capital Regional Planning Board of British Columbia. Retirement in the Capital Region of British Columbia: Implications for the Physical, Economic, and Social Development of the Victoria Census Metropolitan Area. Victoria: Capital Regional Planning Board, 1969.

Carp, Frances M. "Correlates of Mobility Among Retired Persons." Proceedings of the Second Annual Environmental Design Research Conference. Edited by J. Arches and C. Eastman. Pittsburgh: Carnegie-Mellon University Press, 1970.

_____. "The Mobility of Retired People." Transportation and Aging: Selected Issues. Edited by Edmund J. Cantilli, June L. Schmelzer, and the staff of the Division of Information, Administration of Aging. Washington: Government Printing Office, 1970.

_____. "Automobile and Public Transportation for Retired People." Highway Research Record #348. Washington: Highway Research Board, National Academy of Sciences, 1971, 182-191.

Chapin, F. Stuart, Jr., and Hightower, Henry C. Household Activity Systems--A Pilot Investigation. Chapel Hill, N.C.: Center for Urban and Regional Studies, Institute for Research in Social Sciences, 1966.

Chicago Area Transportation Study. Final Report I: Survey Findings. Cited in Geographic Perspectives on Urban Systems. Brian J. L. Berry and Frank E. Horton. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Churchill, Henry S. The City Is the People. New York: W. W. Norton and Co., 1962.

Clark, Margaret, and Anderson, Barbara Gallatin. Culture and Aging: An Anthropological Study of Older Americans. Springfield, Ill.: Charles C. Thomas, 1967.

Cumming, Elaine, and Henry, William F. Growing Old: The Process of Disengagement. New York: Basic Books, 1961.

Davis, James A. Elementary Survey Analysis. Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Department of Community Development. Economic Survey of Metropolitan Victoria: 1951-1981. Victoria: Department of Community Development, 1969.

Domenich, Thomas A., and Draft, Gerald. Free Transit. Lexington, Mass.: Heath Lexington Books, 1970.

Dominion Bureau of Statistics. Census of Canada 1966 (1-10), Cat. No. 92-610.

_____. Census of Canada 1966 (C-28), Cat. No. 95-628.

Einsweiler, Robert C. "How Planners Shape the Role They Play." Urban Planning in Transition. Edited by Ernest Erber. New York: Grossman Publishers, 1970.

Erber, Ernest, ed. Urban Planning in Transition. New York: Grossman Publishers, 1970.

Fagin, Henry. "Advancing the 'State of the Art.'" Urban Planning in Transition. Edited by Ernest Erber. New York: Grossman Publishers, 1970.

Fortune, the editors of. The Exploding Metropolis. Anchor Books ed.; Garden City, N.J.: Doubleday and Co., 1958.

Gans, Herbert J. People and Plans: Essays on Urban Problems and Solutions. New York: Basic Books, 1968.

_____. "Planning for People, Not Buildings." Environment and Planning, I (1969), 33-46.

Gelwicks, Louis E. "Home Range and Use of Space by an Aging Population." Spatial Behavior of Older People. Edited by Leon A. Pastalan and Daniel H. Carson. Ann Arbor: University of Michigan Press, 1970.

_____. "The Older Person's Relation With the Environment: The Influence of Transportation." Transportation and Aging: Selected Issues. Edited by Edmund J. Cantilli, June L. Schmelzer, and the staff of the Division of Information, Administration of Aging. Washington: Government Printing Office, 1970.

Golant, Stephen M. The Residential Location and Spatial Behavior of the Elderly: A Canadian Example. Research Paper No. 143, Department of Geography. Chicago: University of Chicago, 1972.

Goldwin, Robert A., ed. A Nation of Cities: Essays on America's Urban Problems. Chicago: Rand McNalley, 1968.

Haber, Audrey, and Runyon, Richard P. General Statistics. Reading, Mass.: Addison-Wesley, 1969.

Harvey, D. "What Kind of Geography?" Transactions, Institute of British Geographers, LXIII (1974), 18-24.

Hatt, Paul K., and Reiss, Albert, Jr., eds. Cities and Society: The Revised Reader in Urban Sociology. New York: Free Press of Glencoe, 1957.

Havighurst, Robert J. "Life Beyond Family and Work." Aging in Western Societies. Edited by Ernest W. Burgess. Chicago: University of Chicago Press, 1960.

Hoel, Lester A.; Perle, Eugene D.; Kansky, Karel J.; Kuehn, Alfred A.; Roszner, Ervin S.; Nesbitt, Hugh P. Latent Demand for Urban Transportation. Pittsburgh: Transport Research Institute, Carnegie-Mellon University, n.d.

Hollingshead, August B. Two Factor Index of Social Position. New Haven, Conn.: Yale University Press, 1965.

Horne, Catherine. Interview at Victoria Silver Threads Service. Autumn, 1971.

Hyman, Robert. Survey Design and Analysis: Principles, Cases, and Procedures. Glencoe: The Free Press, 1955.

Jacobs, Jane. The Death and Life of Great American Cities. New York: Random House, 1961.

_____. Cited in Social Aspects of Urban Development. Edited by G. M. Lomas. London: National Council of Social Service, 1966.

Jones, Kenneth A. "Usage of Victoria's Public Transit System." Unpublished term essay. Geography Department, University of Victoria, 1971.

Kent, Donald P. Cited in Perspectives in Aging II: Operational Focus. Edited by Frances G. Scott and Ruth M. Brewer. Corvallis, Ore.: Continuing Education Publications, 1971.

Kleemeier, Robert W., ed. Aging and Leisure: A Research Perspective into the Meaningful Use Of Time. New York: Oxford University Press, 1961.

Kraft, Charles H., and van Eeden, Constance. A Non-Parametric Introduction to Statistics. New York: Macmillan, 1968.

Kreps, Juanita M. "Higher Income for Older Americans." Foundations of Social Gerontology. Edited by Rosamonde R. Boyd and Charles G. Oakes. Columbia: University of South Carolina Press, 1969.

Kutner, Bernard; Fanshel, David; Togo, Alice; and Langner, Thomas S. Five Hundred over 60: A Community Survey on Aging. New York: Russell Sage Foundation, 1956.

Lawton, M. Powell. "Ecology and Aging." Spatial Behavior of Older People. Edited by Leon A. Pastalan and Daniel H. Carson. Ann Arbor: University of Michigan Press, 1970.

Lomas, G. M., ed. Social Aspects of Urban Development. London: National Council of Social Service, 1966.

Lynch, Kevin. The Image of the City. Cambridge: MIT Press, 1960.

Maddox, George R. "Growing Old: Getting Beyond the Stereotypes." Foundations of Social Gerontology. Edited by Rosamonde R. Boyd and Charles G. Oakes. Columbia: University of South Carolina Press, 1969.

Mahon, Frances. Interviews at Saanich Silver Threads Centre. January and February, 1972.

McCue, Gerald M.; Ewald, William R.; and Midwest Research Institute. Creating the Human Environment. Urban: University of Illinois Press, 1970.

Melnyk, Helen. "'Good Life' on $176." Victoria Times. February 23, 1972.

Meyer, J. R.; Kain, J. F.; Wohl, M. The Urban Transportation Problem. Cambridge: Harvard University Press, 1965.

Michelson, W. H. Man and His Urban Environment. Reading, Mass.: Addison-Wesley, 1970.

Miller, Stephen J. "The Social Dilemma of the Aging Leisure Participant," Older People and Their Social World: The Subculture of the Aging. Edited by Arnold M. and Warren A. Peterson. Philadelphia: F. A. Davis, 1965.

Mohl, Raymond A., and Betten, Neil, eds. Urban America in Historical Perspective. New York: Weybright and Talley, 1970.

Mumford, Lewis. "The Frustrations of Urban Planning." Urban America in Historical Perspective. Edited by Raymond A. Mohl and Neil Betten. New York: Weybright and Talley, 1970.

Murphy, Raymond E. The American City: An Urban Geography. New York: McGraw-Hill, 1966.

National Retired Teachers Association, and American Association of Retired Persons. The 1971 White House Conference on Aging: The End of a Beginning? Washington: Government Printing Office, 1971.

Oppenheim, Abraham N. Questionnaire Design and Attitude Measurement. New York: Basic Books, 1966.

Ornati, Oscar. Transportation Needs of the Poor: A Case Study of New York City. New York: Praeger Publishers, 1969.

Pahl, R. E. "Whose City?" and Other Essays on Sociology and Planning. London: Longman Group, 1970.

Palmore, Erdman. "Sociological Aspects of Aging." Behavior and Adaptation in Late Life. Edited by Ewald E. Busse and Eric Pfeiffer. Boston: Little, Brown, and Co., 1969.

Parr, A. E. "In Search of Theory." Environmental Psychology: Man and His Physical Setting. Edited by Harold M. Proshansky, William H. Ittelson, and Leanne G. Rivlin. New York: Holt, Rinehart, and Winston, 1970.

Pastalan, Leon A., and Carson, Daniel H., eds. Spatial Behavior of Older People. Ann Arbor: University of Michigan Press, 1970.

Perloff, Harvey S., ed. Planning and the Urban Community. Pittsburgh: Carnegie Institute of Technology and University of Pittsburgh Press, 1961.

Popenoe, D. Cited in "Design with People: The Quality of the Urban Environment." J. D. Porteous. Environment and Behavior, III (June, 1971).

Porteous, J. D. "Design with People: The Quality of the Urban Environment." Environment and Behavior, III (June, 1971), 155-177.

Proshansky, Harold M.; Ittelson, William H.; and Rivlin, Leanne G., eds. Environmental Psychology: Man and His Physical Setting. New York: Holt, Rinehart, and Winston, 1970.

Quandt, Richard E. The Demand for Travel: Theory and Measurement. Lexington, Mass.: D. C. Heath, 1970.

Revis, Joseph S., and the 1971 White House Conference on Aging. Transportation: Background and Issues. Washington: Government Printing Office, 1971.

Rose, Arnold M., and Peterson, Warren A., eds. Older People and Their Social World: The Subculture of the Aging. Philadelphia: F. A. Davis, 1971.

Rosow, Irving. "The Social Effects of the Physical Environment." Journal of the American Institute of Planners, XXVII (May, 1961), 127-133.

_____. Social Integration of the Aged. New York: Free Press, 1967.

Scott, Frances G., and Brewer, Ruth M. Perspective in Aging II: Operational Focus. Corvallis, Ore.: Continuing Education Publications, 1971.

Seligman, Daniel. "The Enduring Slums." The Exploding Metropolis. The editors of Fortune. Anchor Books ed.; Garden City, N.Y.: Doubleday and Doubleday, 1958.

Silver Threads Service Transportation Committee. A Brief on Cross-Town Transportation. 1970 (Mimeographed).

Simmons, James, and Simmons, Robert. Urban Canada. n.p.: Copp Clark, 1969.

Practical

Simpson, Ida Harper. "Problems of the Aging in Work and Retirement." Foundations of Social Gerontology. Edited by Rosamonde R. Boyd and Charles G. Oakes. Columbia: University of South Carolina Press, 1969.

_____, and McKinney, John C., eds. Social Aspects of Aging. Durham, N.C.: Duke University Press, 1966.

Smerk, George M., ed. Readings in Urban Transportation. Bloomington: Indiana University Press, 1968.

Smith, Harold E. "Family Interaction Patterns of the Aged: A Review." Older People and Their Social World: The Subculture of the Aging. Edited by Arnold M. Rose and Warren A. Peterson. Philadelphia: F. A. Davis, 1965.

Smith, Joel. "The Group Status of the Aged in an Urban Social Structure." Social Aspects of Aging. Edited by Ida H. Simpson and John C. McKinney. Durham, N.C.: Duke University Press, 1966.

Southern Conference on Gerontology. Aging in a Changing Society. Gainsville: University of Florida Press, 1962.

Statistics Canada. "Census Tract Bulletin." 1971 Census of Canada (CT-29A), Cat. No. 95-729, March, 1973.

_____. "Population--Age Groups." 1971 Census of Canada. Cat. No. 92-715, v. 1 - Part 2 (bulletin 1.2-3), April, 1973.

Stewart, Murray, ed. The City: Problems of Planning. Harmondsworth, Middlesex: Penguin Books, 1972.

Stoloff, E. David. "Competence to Plan Social Strategies." Urban Planning in Transition. Edited by Ernest Erber. New York: Grossman Publishers, 1970.

Strauss, Anselm L. Images of the American City. New York: Free Press, 1961.

Tibbitts, Clark. Handbook of Social Gerontology: Societal Aspects of Aging. Chicago: University of Chicago Press, 1960.

Timms, Duncan. The Urban Mosaic: Toward a Theory of Residential Differentiation. Cambridge: Cambridge University Press, 1971.

Traffic Research Corporation. Capital Region of British Columbia Transportation Study. Condensed Report, 1965.

Ullman, Edward L. "Presidential Address: The Nature of Cities Reconsidered." Cited in The American City: An Urban Geography. Raymond E. Murphy. New York: McGraw-Hill, 1966.

United States Senate Special Committee on Aging. Older Americans and Transportation: A Crisis in Mobility. Washington: Government Printing Office, 1970.

Warburton, T. R. "A Survey of Social Participation in Greater Victoria." Cited in Retirement in the Capital Region of British Columbia: Implications for the Physical, Economic, and Social Development of the Victoria Metropolitan Area. Capital Regional Planning Board of British Columbia. Victoria: Capital Regional Planning Board, 1969.

Webber, Melvin M.; Dyckman, John W.; Foley, Donald L.; Guttenberg, Abber A.; Wheaton, William L. C.; and Wurston, Catherine Bauer. Explorations into Urban Structure. Philadelphia: University of Pennsylvania Press, 1964.

Wheaton, William L. C., and Wheaton, Margaret F. "Identifying the Public Interests: Values and Goals." Urban Planning in Transition.. Edited by Ernest Erber. New York: Grossman Publishers, 1970.

Wilbur Smith and Associates. Patterns of Car Ownership, Trip Generation and Trip Sharing in Urbanized Areas. Cited in Transportation and Issues. Joseph S. Revis. Washington: Government Printing Office, 1971.

Wilensky, Harold L. "Life Cycle, Work Situation, and Participation in Formal Associations." Aging and Leisure: A Research Perspective into the Meaningfulness of Time. Edited by Robert W. Kleemeier. New York: Oxford University Press, 1961.

Williams, Ernest W., Jr., ed. The Future of American Transportation. Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Young, Michael, and Willmott, Peter. Family and Kinship in East London. Revised ed.; Harmondsworth, Middlesex: Penguin Books, 1957.

APPENDIX

Sample Questionnaire

This survey is being completed by a graduate student of the Geography Department of the University of Victoria, in cooperation with the Victoria and Saanich Silver Threads Service Centres. Your help in completing it is greatly appreciated. Hopefully, a better understanding of the needs of the elderly population of Victoria will be provided by it. All answers are completely confidential, and no names will be used.

1) Do you regularly drive?

2) What is your opinion of the bus service?

/1	/2	/3	/4	/5
Very poor				Very good

3) Do you have any complaints or have you encountered any problems with the bus service in greater Victoria?
--If yes, please list them:

4) When you take the bus, how frequently do you have to transfer?

5) How frequent is the bus service at the stop near your home?

6) How often do you take the bus?

7) How well do your transportation arrangements work out for you, in general?

/1	/2	/3	/4	/5
Very poorly				Very well

8) Would you like to get out more often than you do?

9) What are the disadvantages of your usual form of transportation?

10) What are the advantages of your usual form of transportation?

11) Do you have a bus pass?

12) Are there places you would like to go, or things you would like to do, that you cannot because of transportation problems?
--If yes, please list your problem(s):

13) How long does it take you to walk to the bus stop nearest your home?

14) Were you in any way inconvenienced during the bus strike of 1971?

--If yes, how were you inconvenienced?

--What means of transportation did you use when the bus service was not available?

The following refers to kinds of trips you might normally make in the greater Victoria area. Please consider each one as a typical trip in the average month or week, depending upon how frequently you make the trip. And remember also, a trip is the travel one way from your home to your destination.

1) Trips to visit relatives in the greater Victoria area.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

2) Trips to visit friends in the greater Victoria area.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

3) Trips to the doctor or for other medical purposes.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

4) Shopping and personal business trips for day-to-day needs.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

5) Shopping and personal business trips for less frequently needed items.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

6) Trips to Silver Threads Centre.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

7) Trips to meetings other than Silver Threads.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5
Very dissatisfied — Very satisfied

8) Trips for recreation purposes, other than Silver Threads.

How often do you make such trips?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5

Very dissatisfied — Very satisfied

9) Trips for entertainment purposes, other than Silver Threads.

How often do you make the trip?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5

Very dissatisfied — Very satisfied

10) Trips to church.

How often do you make the trip?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5

Very dissatisfied — Very satisfied

11) Trips to the library.

How often do you make the trip?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5

Very dissatisfied — Very satisfied

12) Other trips (specify).

How often do you make the trip?
How long does the trip take?
What means of transportation do you use?
How satisfied are you with the means of transportation used?

/1 /2 /3 /4 /5

Very dissatisfied — Very satisfied

Finally, it would be greatly appreciated if you would answer a few personal questions. Please understand that all answers are confidential (no names will be used), and will only be used for statistical purposes.

1) What is your age?

2) What is your sex?

3) What is your marital status?

4) Do you live with relatives (other than spouse)?

5) Do you live with others, if not with spouse?

6) What is your employment status?

7) What was/is your usual occupation?

   What was/is your spouse's usual occupation?

8) What is the highest level of formal education you completed?

   What is the highest level of formal education your spouse completed?

9) What is your approximate usual monthly income from all sources?

10) How long have you lived in the Victoria area?

11) How long have you lived at your present address?

12) Approximately what percentage of the people in your neighbourhood (within a five minute walk) are 65+ years of age?

13) How would you rate your overall health?

/1	/2	/3	/4	/5
Very poor				Very good

Thank you very much for your cooperation and assistance, without which this study would be impossible.

VITA

Surname: JONES Given Names: KENNETH ALAN

Place of Birth: GLENDALE, CALIFORNIA Date of Birth: JUNE 27, 1947

Educational Institutions Attended, with Dates of Entering and Leaving:

CHICO STATE COLLEGE, CHICO, CALIFORNIA	1965	to	1970
UNIVERSITÄT HEIDELBERG, GERMANY	1968	to	1969

Degrees, Diplomas, Etc., Awarded, with Dates and Names of Institutions:

B. A.	1970	Chico State College, California

Honors and Awards:

Participant, California State Colleges International Program, 1968-69

National Council for Geographic Education, Award for Excellence of Scholarship, 1970

University of Victoria Scholarship, 1970-71 and 1971-72

Publications:

PARTIAL COPYRIGHT LICENSE

I hereby grant the right to lend my thesis or dissertation (the title of which is shown below) to users of the University of Victoria Library, and to make single copies only for such users or in response to a request from the library of any other university, or similar institution, on its behalf or for one of its users. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by me or a member of the University designated by me. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Title of Thesis/Dissertation

The Intra-Urban Mobility of the Elderly: A Study of a Suburban Silver Threads Centre, Victoria, B.C.

Author [redacted]

Signature

Kenneth Alan Jones

Name

April 29th, 1975

Date