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IRVINE

Transportation Experiences of Suburban Older Adults: Implications of the Loss of
the Driver’s License for Psychological Well-being, Health, and Mobility

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Social Ecology

by

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1997
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1997
DEDICATION

To my parents, Sandy and Sissy Sandeen.
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ABSTRACT OF THE DISSERTATION

Transportation Experiences of Suburban Older Adults: Implications of the Loss of the Driver's License for Psychological Well-being, Health, and Mobility

by

Beverly Ann Sandeen

Doctor of Philosophy in Social Ecology

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Professor Karen S. Rook, Co-Chair

Professor Daniel Stokols, Co-Chair

The number of elderly adults in the United States is growing, and, by the year 2030, it is estimated that 21 percent of the population will be aged 65 and over. Along with the transformation in age structure, the United States has also become suburbanized. Suburbs generally offer few transportation alternatives to the private automobile, and, if older adults age in place, they may face difficulty accessing resources when they stop driving.

This study utilized three theoretical perspectives -- transitional processes, person-environment fit, and stress and coping -- to guide the development of a model for examining how loss of the driver's license negatively affects

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psychological well-being, health, and mobility. Sixty-four drivers and sixteen former drivers were interviewed by telephone or in person. Interviews assessed transportation history, well-being, coping strategies, health background, and demographic information. Participants also were asked to draw cognitive maps of their weekly travels, and they completed two questionnaires concerning life stress and driving self-efficacy. Drivers were placed into two groups based on driving patterns and behaviors: modified drivers, who had made substantial changes in their driving patterns (e.g., not driving at night), and regular drivers, who had not made changes in their driving patterns.

Results indicate that former drivers have significantly lower levels of well-being than do regular drivers, controlling for age, education level, and number of ailments. Supportive housing was associated with higher levels of life satisfaction for modified and regular drivers but lower life satisfaction for former drivers. Former drivers who had no prior transit experience had much lower life satisfaction than did any other group. While these findings are correlational in nature, they suggest that loss of the license may affect well-being and that some environmental and personal resources may moderate this relationship. Additional research should be conducted to inform policymakers and planners about how older adults living in suburbs may be constrained and adversely affected by the loss of access to the private automobile. Meeting the needs of older adults through transportation and telecommunication technology should also be examined.
Introduction

The number of elderly adults in the United States is growing, both in absolute terms and as a proportion of the general population. Since the turn of the century, the average life expectancy has risen from 47 to 76 years (U.S. Census Bureau, 1995). In 1900, people aged 65 and over accounted for only four percent of the population, meaning that only one in twenty-five Americans was over 65 years of age. By 1990, the proportion of elderly in the population grew to 12.5 percent, or one in eight Americans (U.S. Census Bureau, 1995). This proportion will continue to grow as the Baby Boom generation (those born between 1946-1964) ages. It is estimated that 21% of the population will be aged 65 and over by the year 2030 (U.S. Bureau of the Census, 1989b).

Along with the transformation in age structure of our population, America has recently been transformed from a mainly urban and rural society to a suburban one. In 1980, for the first time in U.S. history, more Americans (40 percent) lived in suburbia than in central city (28 percent) and rural (32 percent) environments (Baldassare, 1986; U.S. Bureau of the Census, 1980). And, although a common societal myth exists that most older Americans reside in the central city, more older adults actually reside in the suburbs (Logan & Spitze, 1988). The geographic distribution of the elderly roughly mirrors the geographic distribution of the general population (Golant, 1990). For example, in 1987, 42 percent of older adults lived
in suburbs, 31 percent in the central city, and 27 percent in rural areas (U.S. Bureau of the Census, 1989a).

In suburbia, the main mode of transportation is the private automobile (Baldassare, 1986). Because the suburbs are less likely than central cities to have well-established and comprehensive public transit systems, older Americans face the potential problem of linkage between their homes and external resources such as health care, food supplies, and social and religious organizations (Rosenbloom, 1988; Wachs, 1988). Carp (1979) argues that the quality of older adults’ lives depends upon the quality of the housing and living environment, which in turn depends upon their access to transportation. Bell and Revis (1984) add that transportation is particularly important for older adults in areas not well served by public transit.

The possible difficulty in linking homes and services for the elderly will continue to exist as Baby Boomers age, and as they do so, remain in their suburban homes (Logan & Spitze, 1988; Wachs, 1988). While linkage between homes and services in the suburbs is important for all residents, suburban elderly individuals are potentially homebound by poor public transportation (Carp, 1976; Paaswell & Recker, 1978). In fact, the U.S. Census Bureau (1995) notes that over the next six decades, increasing numbers of adult children will have to care for their very old, frail relatives because of the increasing need for personal assistance with everyday activities. Using a subsample of 1980 Census Data, Cutler and Coward (1992) studied the availability of transportation among older adults. They found that as age increased, availability to transportation decreased. Therefore, the connection between
homes and services is important, but potentially difficult, for suburban elderly residents.

Further, the current cohort of elderly individuals has been exposed to private automobiles for the vast majority of their lifetimes (Persson, 1993). The number of elderly drivers grew 148 percent from 1970 to 1990 (from 8.6 million to 22.3 million), while the number of all drivers grew by only 50 percent during the same time period (Chu, 1994). In fact, the elderly use private automobiles more often than the young, and private automobile driving is the preferred transportation mode among older adults (Carp, 1979; Wilson, 1993).

Losing the driver's license is a stressful life event for older adults (Sandeen, Rivera, and Gutierrez, 1996; see also Appendix A). Inexperience with alternative modes of transportation may cause adaptive difficulties when access to private automobile transport is lost (Carp, 1979). The transition from being independently mobile, with an emphasis on private automobile use, to being dependently mobile presents the opportunity to examine how older adults cope with modifications to their mobility.

Because there will likely be a growing number of elderly Americans residing in suburbia in the future, and because the private automobile continues to be the dominant mode of transportation in these geographic areas, a study of the process by which elderly adults cope when they lose their access to private automobiles is important. Understanding how older Americans cope with and adapt to this transition
can provide insights for planners and health care providers, which in turn may assist with efforts to produce a better quality of life for elderly suburban residents.

Research on Transportation and Suburban Older Adults

Transportation issues concerning the suburban elderly have been studied primarily by researchers in the fields of urban planning and environmental design. Transportation planning research efforts have focused mainly on assessments of needs by examining current travel and living patterns of elderly people. A substantial number of studies also exist that examine the impacts of decrements in cognitive and physiological loss on driving function, with a focus on subsequent modification of both vehicles and roadways. Very little research has been done from a social or psychological perspective on transportation concerns of the elderly.

Planning Research

Planning research in the area of transportation and the suburban elderly has followed two major tracks. One track is primarily, though not exclusively, descriptive in nature and the other primarily evaluative. The first track focuses on describing the current and future lifestyles, needs, and trip plans of the elderly for subsequent use by planners. This track includes research that describes the integration of transportation accessibility with issues of housing, health care, employment, and recreation. The second research track in planning focuses on the actual application and evaluation of transportation planning for suburban aging
populations. Cost-benefit analyses and other economic studies are included broadly in this track, as is public policy research related to planning.

An example of the descriptive track of planning research is work by Wachs and Blanchard (1975) examining the mobility patterns and future needs of the metropolitan elderly. They suggested to transportation planners that prevailing assumptions about the elderly population need to be reexamined. These assumptions included the notion that the elderly are a homogeneous population who reside in the dense urban core and therefore enjoy ready access to goods and services. The planners of the 1970s also assumed that the elderly become increasingly less mobile as they aged. Wachs and Blanchard argue, to the contrary, that the elderly are not a homogeneous group who are transit-dependent and who become less mobile with age. Rather, the elderly should be seen as heterogeneous, both in capabilities and lifestyle. Wachs and Blanchard predicted that up to the year 2000, the elderly population will continue to become more suburban, to include more solo car drivers, and to include a significant group who travel a great deal. They suggest that methods of planning and forecasting the future transportation needs of the elderly should not be based on the transportation patterns and needs of those who are currently elderly, but should examine the current lifestyles of those who will become the elderly of the future.

A second example of descriptive planning work is that of Paaswell, Weinstein, and Nalepa (1982), who examined the relocation of elderly to the suburbs and the consequences of relocation upon mobility. Their work in
Amherst, New York consisted of surveying recent movers to a suburban apartment house. They examined, among other issues, the level of access to private automobiles and public transportation, and the subsequent change in travel behavior due to the residential relocation. Using simple descriptive statistics, they concluded that in the suburbs both housing design and the suburban environment have an impact on the ability of the elderly to access transportation. Those elderly residents who were private automobile drivers felt less limited in suburbia and more self-sufficient than those who were dependent on public transit and other modes of transportation.

In another descriptive planning study, Gillan and Wachs (1976) compared suburban and urban elderly adults with respect to their access to and use of transit systems. This study focused on the trip-making behavior of elders. The researchers found that, compared to the urban sample, the suburban elderly relied more upon automobile transportation. They noted that studies of the transportation needs of the suburban elders indicated that without transit alternatives, these older people could become society’s most transit-deprived group. Elderly inner city residents had a wider range of transportation options, but fewer resources, which limited their ability to access transportation alternatives.

A final example of this descriptive planning research involves the study of the relationship between lifestyle and travel behavior of the elderly. Wachs (1979) described the heterogeneity of the elderly population and attempted to examine the
lifestyles of seven distinct groups. The seven groups of interest differed from one another in terms of social patterns, living conditions, residential locations, and travel habits. For example, one group, the "central city dwellers," had the highest rate of bus travel and a relatively large number of trips as automobile driver and passenger, while another group, the "new suburbanites," traveled slightly more and tended to rely on the automobile to a greater degree than did any of the other groups. These groups had distinct travel needs based on their different lifestyles, yet Wachs found that the services offered to the groups were not tailored to their specific needs. He believed that this mismatch between needs and services should be modified in the future to provide adequate mobility for urban and suburban elders.

The second track of planning research involves evaluative and applied work, such as that conducted regularly by the U.S. Department of Transportation. In 1980, the U.S. Department of Health and Human Services evaluated for the U.S. Department of Transportation the degree to which the 1971 White House Conference on Aging transportation recommendations were achieved. Most of the recommendations were evaluated as either unmet or only partially met. For example, the recommendation that the federal government take the lead role and provide financial support for the development of individualized, flexible transportation services for the elderly -- with a special emphasis on services to support health-related, shopping, social, recreational, religious, and cultural needs -- was unmet. Although this particular planning evaluation could perhaps more
precisely be termed a policy evaluation, it is more often the case that planning and
policy are complementary and inseparable.

Another example of evaluative research includes work by Bell and Revis
(1984), who analyzed the development of specialized transportation, such as
special taxi and bus services, in the U.S. Their analysis of national investments in
specialized transportation and of changes in U.S. population patterns established
that transportation delivery to the elderly has become more specialized in terms of
which services are provided and who uses the services. They found that demand
among the elderly for mobility options was growing and that specialized
transportation programs would need to serve older, less physically able
populations in the future. They concluded that specialized transportation would
continue to be desired in the future. However, national and local geographic
difficulties, such as economic constraints related to diminished tax returns, could
operate to slow such development.

*Transportation Design Research*

A second, vast area of research concerns the design of transportation for
older adults, though not exclusively suburban elders. Topics considered in this
research area include: adaptations of bus configurations for accessibility of
elderly and disabled persons (Oxley & Benwell, 1984), passive vehicle crash
protection (Clark, 1984), and adaptation of automobiles for disabled populations
(Gazely & Haslegrave, 1978; Hawken, Hodgson, & Harris, 1982; Page et al.,
1984). Often design research addresses issues of physical, cognitive, and
physiological decrements associated with aging by focusing on technical
innovations to assist mobility. The attention to the impact of combined
decrements promotes design that facilitates continued mobility despite declining
abilities.

Design research is extremely important in providing solutions to mobility
problems among the elderly and disabled populations. However, it is often highly
technical, with an emphasis, for example, on specific engineering modifications,
such as wheelchair lifts, of transport vehicles. It focuses on development of new
technologies and, as such, has limited value to the proposed study. Although
modifications of the transportation system may influence the coping process of
older people, alterations suggested in design research are often described in
technical literature long before they are available to the general society. This lag
time is due to the fact that modifications in production processes of transportation
vehicles are normally quite costly.

Generally, both transportation planning and design are based on aggregated
data or generalities about populations. These aggregations benefit planners and
designers, who, for the most part, design for broad or large populations.
However, it might be equally useful to examine and understand individual
variations, specifically those that relate to older adults’ coping and adaptation to
the suburban transportation environment.

Little research has focused on the psychological effects of
transportation-related mobility loss on the elderly. The process of coping with
this loss and the effects of this loss on well-being represent virtually unexamined territory. While planning researchers propose a variety of interventions and design researchers devise technically advanced automobiles and buses, the psychological consequences and adaptive responses in naturalistic settings have been all but unstudied. The dearth of psychological research may limit the success of planning and design interventions.

**Social Psychological Research on Transportation and Older Adults**

While adaptation has long been a focus of psychosocial inquiry, scant research exists on the social and psychological effects of transportation loss on the elderly. In 1975, Cutler reported findings of a longitudinal study that examined the relationship between the availability of personal transportation and life satisfaction. The two and one-half year study followed 104 elderly persons. After simultaneously controlling for subjective health, family income, age, sex, and residential location, approximately two-thirds of those who retained or acquired means of personal transportation were found to have stable or increasing life satisfaction scores, while more than half of those who lost personal transportation or were without it for the entire study were found to have decreasing life satisfaction scores. This research supported the notion that transportation plays an important role in the quality of older adults’ lives. Although Cutler (1975) argued for the inclusion of transportation and mobility questions in gerontological research, few investigators have followed this suggestion.
Gonda (1982) proposed in a conceptual paper that theories emphasizing the importance of feelings of control for the well-being of the elderly could be extended to the area of transportation. Gonda outlined age-related factors that might decrease feelings of control in the elderly, thereby causing feelings of incompetence, helplessness, and depression. One of these factors, she noted, was the constraint on mobility that resulted from inadequate transportation. She suggested that the social psychological constructs of choice, control, and predictability were important and that well-being among elderly persons might be as related to varying degrees of control as related to different modes of transportation.

Eisenhandler (1990) described relevance and social origins of identity in terms of possessing a driver’s license. In her study of 50 older adults, Eisenhandler developed the notion of the "Asphalt Identikit," where substantive symbolic issues - in this case having a driver’s license - underlie the practicality of driving. In other words, the possession of the driver’s license gives elderly people an identity, the "Asphalt Identikit", that allows them to retain a non-age related identity. A non-age related identity is argued to be a nonstigmatized identity. Resistance to giving up driving was strong, even as self-imposed limits curtailed the kind and amount of driving by older adults in the study. Older persons from the small community studied used and maintained the asphalt identikit to blunt the stigma of old age identity.
Finally, Persson (1993) described how older people living in a continuum care retirement community decide to quit driving. The role of the physician and family in assisting in the decision-making process was emphasized, along with participants' self-perceptions of the appropriate time to stop driving. Through focus group interviews lasting approximately one and one-half hours, most of the 56 elderly individuals reported that they had stopped driving after reaching a point at which compensatory driving behaviors could no longer be continued. Few of those interviewed reported having stopped driving due to their doctor's advice, although all 56 participants felt through their retrospective accounts that the physician was in the best position to evaluate driving. The role of the family in determining when to stop driving was viewed by the interviewees as also having limited importance. The older adults participating in these focus groups believed that they should be the ones to decide when to stop driving themselves.

**Summary**

Prior research on the planning and design of transportation for the elderly points to the need to take into consideration the diversity within the elderly population, the growing numbers of elderly suburbanites who have little access to or prior use of public transit systems, and the changing abilities of the elderly to interact with their environment due to physical and cognitive impairment.

The few social psychological articles on mobility and elderly persons suggest many avenues for further research. First, this research indicates that transportation is critical to well-being. Second, the conceptual work (Gonda,
1982) suggests that the individual’s perceptions of choice, control, and environmental predictability may be important when examining transportation issues with elderly persons. Third, the status of being a driver is important to older people, especially in terms of its symbolic significance. Finally, deciding when to stop driving is an important decision and older adults like to feel that they are responsible for making this decision.

**Theoretical Perspectives Utilized for Model Development**

Three theoretical perspectives — *transitional processes, person-environment fit, and the stress and coping model* — will guide the proposed study of adaptation to the loss of mobility. These theoretical perspectives have proven useful in guiding other work on older adults’ adaptation to life change. The perspective of transitional process in late adulthood will guide predictions about the overall impact of the loss of the driver’s license on well-being. Models of person-environment fit will be used to identify factors that may influence differential effects of license loss on well-being, and the stress and coping model will provide background to predicting how well-being may be affected vis-a-vis the coping process.

**Transitional Processes in Late Adulthood**

Life transitions among the elderly have been studied in some detail. In particular, relocation and its effects on the elderly have received considerable attention from psychosocial researchers (Lawton, 1980). While most of this research on relocation has focused on relocation from home to institution or from
one institution to another (Baglioni, 1989), residential relocation has also been studied (Smider, Essex, & Ryff, 1996). Many of the institutional relocation projects examined the mortality rate related to the transfer between institutions. While most studies found increasing mortality among individuals who had been relocated, the findings reported across studies are not consistent (Baglioni, 1989).

One review by Pastalan (1983) delineated several factors that help to explain contradictory findings in residential relocation research. Some of the important factors that are relevant to the research questions addressed in the proposed research include: the degree of choice in making a move; the degree of environmental change; health status; and the degree of preparation for the move. The degree of choice in making a move defines the voluntary or nonvoluntary nature of the residential transition. Older adults who had more residential choice were assumed to have more control and, therefore, were expected to experience fewer negative outcomes related to their moves. The degree of preparation refers to the degree to which the older person was ready for the move, both mentally and physically. When the preparation is gradual and predictable, the move is less stressful. When the move appears to be sudden or is without preparation, the move is more stressful and the adaptation level is low. Although Pastalan has argued that these factors may influence the effects of relocation, the degree of choice and degree of preparation may also influence adaptation to the loss of the driver's license.
Theories of Person-Environment Fit

Two theoretical models that are relevant to understanding the phenomena of person-environment fit as they pertain to the transportation domain of older adults include the competence-press model (Lawton, 1989) and the congruence model (Kahana, Liang, & Felton, 1980). Distinct assumptions regarding the nature of person-environment transactions underlie each of these models.

The competence-press model assumes that the impact of the environment operates via an individual’s environmental competence (Lawton, 1989). Starting with Lewin’s Field Theory equation that behavior is a function of the person and the environment, \( B = f(P,E) \), this model focuses on the person’s (\( P \)) competence to meet environmental (\( E \)) demands (Carp & Carp, 1984). For Lawton, the most relevant aspects of \( P \) (Person) for his theory are subsumed under the term competence (Schooler, 1976). Competence can be simply defined as the capacity of an individual to function in an environment. This capacity is related to a wide range of biological and psychosocial states or abilities. Personal style and traits are considered to comprise competence in this model. Competence is manifested in biological health, sensory-perceptual capacity, motor skills, cognitive capacity, and ego strength. The notion of \( E \) (environment) in the competence-press model is derived from Murray’s Need-Press Theory (1938). Murray’s theory suggests that well-being depends on appropriate satisfaction of needs by the environment and that needs are organized hierarchically. Environmental press is a stimulus or
context seen as having potential demand character for any individual (Lawton, 1989).

The model also elaborates the basic equation with an interaction term, $P \times E$. Lawton's essential equation for person-environment fit is $B = f(P,E,P \times E)$. Lawton and Nahemow (1973) developed a graphic representation of the theoretical framework to illustrate the model. On the abscissa, environmental press is represented as a continuum from weak to strong. On the ordinate, competence is also represented as a continuum from low to high. While the model has been criticized as being overly simplistic (Schooler, 1976), the two dimensions of $P$ and $E$ are actually multidimensional concepts. In the graphic model, when the demands of an environment overwhelm the individual's competence, stress results and prompts adaptation in order to maintain well-being (Hooyman & Kiyak, 1991; Lawton, 1989). Adaptive behavior is thought to occur when both competence and environmental press are at appropriate levels for a given individual. Maladaptive behavior occurs when the environmental press is either too strong or too weak for the person's level of competence. The general adaptation level of appropriate competence to press is comprised of two zones or areas. The first zone is a comfortable adaptation zone, and the second zone is where maximum performance potential is thought to occur. The zone of maximum performance involves slightly more environmental press and is thought to optimize behavior.

The competence-press model was designed specifically for aging populations, because it was theorized that optimization of environmental press is
more important for the functioning of older adults than for healthier, more environmentlly adept, younger adults. The model was developed specifically to challenge the common notion that older adults should lead docile lives for their well-being.

The second model of person-environment fit described here, the congruence model, focuses on the match of personal need with environmental press or demand (Kahana, Liang, & Felton, 1980). Similar to the competence-press model, the congruence model is derived from Murray's Need-Press theory. However, while Lawton transformed Murray's concern for need into the concept of competence in the competence-press model, Kahana continued with Murray's concept of personal need (Schooler, 1976). This model assumes that if personal needs or preferences are congruent with environmental characteristics, a positive outcome results. On the other hand, if levels of individual need and environmental press are incongruent, well-being will be adversely affected or adaptation will occur. That is, if the environmental demands are not synchronous with the elderly person's needs, then either stress or adaptation will occur (Hooymann & Kiyak, 1991; Kahana, Liang, & Felton, 1980).

In elaborating their model regarding the congruence between person and environment, Kahana and colleagues argued that for older persons three dimensions of environmental difference in residential arrangements and four dimensions of personal characteristics are most important. The three dimensions of environmental difference in residential arrangements are: segregate,
congregate, and institutional-control. These dimensions refer, respectively, to the level of exclusivity of living with other older persons, the physical proximity of individuals and the degree of privacy possible within a setting, and the extent of staff control over older residents in a setting. Four dimensions were described based on characteristics of an older person. These are: the need for activity versus passivity, the affective expression of needs, the tolerance for ambiguity, and impulse control. For each of these seven dimensions, the three environmental dimensions and the four individual dimensions, subdimensions exist, and these are described using adjective sets. These adjective sets relate to each environmental- and individual-level factors of congruence. For example, when examining the segregate dimension in a home for older adults, the environmental-level factor could be described as the similarity to the previous environment of a resident and the individual-level factor could be described as a need for continuity with the past. If both the individual-level factor and the environmental-level factor described are congruent, then the person-environment fit is thought to be positive.

Coping with Stressful Life Experiences

The theoretical view of Lazarus (1966) regarding coping with stress also informs this study. In the stress and coping model, adapted by Schooler (1976), it is assumed that stress is mediated by cognitive processes that influence the perception of environmental threats and adaptive responses. Threat, which implies the anticipation of an interaction with a harmful condition, appears to cause stress, and the appraisal of the threat depends on both the environment itself and the
psychological characteristics of the individual. In the presence of a threat, an individual attempts to cope with the threat.

Coping with threat has been described by Lazarus and Folkman (1984) as a process that has three main features. The first feature refers to what a person actually thinks or does, rather than what a person usually does, would do, or should do. The second feature refers to the specific context in which one's cognitive processes or overt behavior actually occurs. And, finally, the third feature refers to the dynamic nature of the coping process. That is, the coping process involves change in coping thoughts and acts as a particular stressful encounter unfolds.

Coping has been described as a mediator that modulates or buffers the impact of stressors (Chiriboga, 1989). Lazarus and Folkman (1984) distinguish between coping that is directed at managing or altering a problem causing distress, known as problem-focused coping, and coping that is directed at regulating the emotional response to a problem, known as emotion-focused coping. Problem-focused coping is considered to be an active process, and it has been described as the modification of the person-environment relationship (Lazarus & DeLongis, 1983). In contrast, emotion-focused coping is considered to be a somewhat passive process. Emotion-focused coping has been associated with poor adjustment in a number of studies (e.g., Aldwin & Revenson, 1987; Gass & Chang, 1989; Hooker, Frazier, & Monahan, 1994), in part, because it may signal a retreat from a stressful situation rather than the active modification of it.
Lazarus and Folkman (1984) believe that changes in coping over the life span may be due to differences in the events experienced at different life stages. For most people, however, the researchers do not believe that there is a systematic change from one style of coping to another. When older people are faced with deteriorating environmental conditions and impaired physical and mental capacities, Lazarus and Folkman argue that they may regress to a more dependent state, perhaps utilizing more emotion-focused coping strategies. Felton and Revenson (1987) argue, however, that other factors may influence coping style, such as cohort-specific approaches to problem-solving or developmental shifts in the allocation of personal energy.

**Theoretical Integration for Study Model**

A model (Figure 1) is proposed below for examining the adaptation of elderly suburbanites who lose their ability to drive a private automobile. Research on life transitions, especially work on late-life residential relocation, guides the overall conceptualization of the various research questions. The models of person-environment fit that emphasize balance between the individual and the environment in terms of competence, abilities, and needs are incorporated into the research. Finally, the person-environment stress model proposed by Schooler (1976), which considers adaptation to environmental demands through threat appraisal and coping, is included in the model.
Figure 1

Proposed Model for Examining Effect of License Loss on Older Suburban Adults

Moderators
- Environmental Demands
- Environmental Resources
- Individual Demands
- Individual Resources

Event
- Loss of Mobility
  - Involuntary/Voluntary Continuum
  - Gradual or Distinct

Outcomes
- Health
- Well-being
- Objective and Subjective Mobility

Mediators
- Problem-Focused Coping
- Emotion-Focused Coping
Objectives

The primary goal of the proposed study is to examine the adaptive process that occurs when the elderly lose their capability to drive or their access to a private automobile. Adaptation can be considered successful if the individual does not suffer declines in health and psychological well-being in response to this mobility loss. (Of course, the loss itself may be due to one of these factors). A comprehensive conceptualization of person-environment fit integrating the two models of congruence and competence will not be fully developed here, but components from each are important in understanding adaptation to mobility loss.

The importance of balancing demands and resources is incorporated into the proposed investigation of the adaptive process. Demands and resources will be considered in terms of both the environment and the individual. Demands and resources are posited to moderate the relationship between the loss of mobility, which can be thought of as an environmental demand itself, and subsequent decrements in health and psychological well-being.

Environmental demands are derived from the concepts of environmental press from the competence-press model and the congruence model. Environmental demands include, for example, the physical distance between home and outside resources. Environmental resources, on the other hand, are supportive in nature, and include, for example, housing type and the availability of transportation alternatives.
Individual demands are derived from concepts of thwarted personal needs of the congruence model. These demands can be perceptions about how difficult it may be to access important resources, for example getting to the physician’s office or the grocery store, or the accumulation of life stressors. Individual resources are derived from the concept of personal competence from the competence-press model and are those resources which may bolster well-being despite the loss of mobility. An individual resource proposed here is past experience with public transit.

As in studies of residential relocation of the elderly, adaptation to loss of mobility and independence provided by the private automobile may be influenced by the degree to which this loss is voluntary. Voluntary loss occurs when individual drivers decide that they have lost the capability to drive due to physical, economic, or cognitive impairments. Involuntary loss occurs when either the government prohibits the operation of a motor vehicle by the individual or when the individual is socially restricted from driving by others, such as family members. While there may be a continuum of voluntary to involuntary loss with respect to automobile driving, the existence of such a continuum has not been described to date. Further, as with relocation, the loss of mobility may appear to be a discrete event or a gradual transition. The voluntary and involuntary dimensions and the gradual or distinct nature of the loss are assumed to affect the outcome measures. Concepts of mobility independence and mobility dependence
fall on a continuum, and older adults continually are faced with anticipated and unanticipated age-related changes in mobility.

Finally, coping is an integral part of the adaptation process. Coping will be expected to mediate the relationship between the loss of mobility and decrements in health and well-being. Coping will be considered a process through which adaptation occurs.

Hypotheses

Transitional adaptations to the environment by the elderly have been studied mainly in the area of residential relocation. Outcomes of adaptation studied have included health status, well-being, and satisfaction ratings. No known work has examined the process of moving from a driver-autonomous to a transit-dependent status. The purpose of this study is to examine this process by testing the following hypotheses.

Processes Associated with the Loss of the Driver’s License

Hypothesis 1.1. The loss of the driver’s license will be related to lower levels of psychological well-being and health and to limited mobility (Figure 1, link A). When compared over time to participants who have not lost their access to the private automobile, participants who have experienced this loss will have lower levels of psychological well-being and health and restricted mobility.

Hypothesis 1.2. The involuntary loss of the driver’s license will be related to lower levels of psychological well-being and health. The voluntary loss of the driver’s license will be related to higher levels of psychological well-being and
better health (Figure 1, link A). Participants who experience the loss of the driver’s license as a discrete or distinct transition will have lower levels of psychological well-being and health than those who experience the loss as a gradual transition (Figure 1, link A).

The Influence of Environmental and Individual Resources and Demands on Adaptation to the Loss of the Driver’s License

Hypothesis 2.1. Environmental resources, such as multiple transportation options and supportive housing arrangements, will moderate the relationship between the loss of the driver’s license and the outcome measures of adaptation. High levels of environmental resources will buffer the negative effects of license loss on psychological well-being and health (Figure 1, link B).

Hypothesis 2.2. Environmental demands, for example, greater distances between the home and external resources, will moderate the relationship between the loss of the driver’s license and the outcome measures of adaptation. Greater environmental demands will exacerbate the negative effect of license loss on psychological well-being and health (Figure 1, link B).

Hypothesis 2.3. Individual resources, for example, past personal experience with transportation options such as public transit, will buffer the negative effects of license loss on psychological well-being and health (Figure 1, link B).

Hypothesis 2.4. Individual demands, such as the experience of life stress or perceptions of difficulty accessing resources without access to a personal
automobile, will moderate the relationship between the loss of the driver’s license and psychological well-being and health. Greater individual demands will exacerbate the negative effect of license loss on psychological well-being and health (Figure 1, link B).

*Coping Processes Associated with the Loss of the Driver’s License*

*Hypothesis 3.1.* Among those who have lost their access to the private automobile, those who utilize a problem-focused coping process will have higher levels of psychological well-being and health than those who utilize emotion-focused coping strategies (Figure 1, link C).

*Hypothesis 3.2.* Loss of mobility that is abrupt and involuntary will be successfully mediated through problem-focused coping processes (Figure 1, link D).
Method

Overview

A prospective study involving two telephone interviews, separated by a 16-week period, was conducted over ten months in 1995 and 1996. The target population was residents of Orange County, California, which is a suburban region located south of Los Angeles. Licensed drivers in the region who were over the age of 70 and who had been driving in California for at least five years were solicited to participate in the study through flyers, in-person presentations, and personal contacts. The five-year requirement was meant to exclude from the study new immigrants to California, as they have had limited experience with Californian roads. Sixty-four drivers met the criteria and took part in this prospective study.

Given the goal of examining the change from "driver" to "former driver" status, it was expected that some proportion of the participants would stop driving during the study period. Though information is not widely available regarding why, how, or when older adults stop driving, a number of drivers over the age of 70 years do fail each year to renew their California driver’s license, and some fail licensing examinations given by the state. State licensing requirements lack a unified approach to assessing the elderly driver (Reuben, Silliman, & Traines, 1988), and general information about former drivers is very limited. In the case of this study, it was expected that loss of the license might be due to failing either
the vision test or the driving response (on-the-road examination) test given by the California Department of Motor Vehicles. Additionally, some elderly individuals were not expected to renew their licenses during the course of the study. Retaining a driver’s license does not necessarily indicate driver status (Eisenhandler, 1990). Persson (1993) found in her retrospective study of former drivers that only 37% of the former drivers no longer possessed a valid driver’s license. Therefore, while it was expected that some proportion of the sample would stop driving during the study, the reasons for doing so would vary.

For purposes of studying the change from mobility independence to mobility dependence, it was initially expected that up to one-third of the sample would stop driving during the study period. Contrary to expectations, however, no participants stopped driving during the study period, although one participant has since stopped driving. Inspection of data from this prospective sample as they became available suggested that it was necessary to obtain a supplementary sample of former drivers in order to test many of the study hypotheses.

Sixteen former drivers who had recently stopped driving, some of whom live in institutional settings, took part in a modest retrospective study. These former drivers were interviewed once, and most interviews were conducted in person. Drivers (from the primary study) and former drivers (from the retrospective study) were asked similar questions regarding housing type, residential history, transportation history over the lifetime, current transportation status, available transportation options, average number and kind of trips taken
during a week. Life satisfaction, psychological health, physical health, and coping strategies. All drivers were asked to draw cognitive maps of their weekly travels; however, not all former drivers were asked to draw cognitive maps due to physical limitations, such as blindness. For drivers, changes in driving patterns and anticipatory coping with mobility loss were examined in relation to self-reported health, well-being, life satisfaction, and spatial activity. In addition, drivers’ anticipatory coping responses were compared with actual coping experiences of former drivers.

Participants

Drivers

Participants were located through multiple community sites - four residential communities for senior citizens (one mobile home park, one continuing care facility, one gated residential community, and one high-rise apartment for low income elders), nine community senior centers, four churches, two libraries, a community bulletin board, a pharmacy, a fine arts theater, an apartment complex, and a private club. Volunteers were solicited through flyers posted at prominent locations at these sites; permission was sought to display these flyers in accordance with specific rules at each site. A brief description of the project was listed on the flyer, along with a telephone number and name of the principal investigator (Appendix B). Business cards were attached to or located adjacent to most of the flyers. Interested parties were asked to phone the university telephone number. Text in the flyer also mentioned that participants would be entered into a
drawing for several free prizes. In addition to these posted flyers, three brief presentations were made to community and senior groups regarding the study. One of the churches independently published information about the study in its monthly newsletter. In addition to recruiting volunteers, participants also were solicited to take part in the study through personal contacts.

The screening process was done by telephone. Prospective participants (n=75) were asked a series of questions in order to find out their age, driving status, and length of time driving in California (Appendix C). Prospective participants who did not meet the criteria after being asked these questions were thanked for their interest and sent a thank you letter (n=4). Subjects who met the criteria (n=71) were asked questions regarding their marital status, with whom they resided and if others in the household drove, if they were the primary driver of the household, and a series of demographic questions (ethnicity/race, education level, and annual household income level). Recruitment source was ascertained at the end of the screening call. Table 1 indicates how the prospective participants reported finding out about the study. Twenty-seven eligible participants volunteered for the study after having seen a posted flyer (13 from senior centers, 9 from senior residential areas, 3 from churches, and 2 from miscellaneous sites). Twenty-six potential participants were approached directly by the study staff, while fifteen were recruited with the assistance of other participants. Three older drivers volunteered for the study after hearing a presentation about it.
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<thead>
<tr>
<th>Source</th>
<th>%</th>
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<tr>
<td>Posted Flyers</td>
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<tr>
<td>Senior centers</td>
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<td>13</td>
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<tr>
<td>Senior residential communities</td>
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<td>9</td>
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<tr>
<td>Churches</td>
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<td>3</td>
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<td>Public libraries</td>
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<td>1</td>
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<td>Theater</td>
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<tr>
<td><strong>Personal Contacts</strong></td>
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<tr>
<td>By study staff</td>
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<tr>
<td>By other participants</td>
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<td>15</td>
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<tr>
<td><strong>Presentations</strong></td>
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<tr>
<td>Social groups</td>
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<td>2</td>
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<tr>
<td>Class for senior drivers</td>
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<td>1</td>
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</table>
At the conclusion of the screening call, a consent form (Appendix D) was read to prospective participants over the phone. Sixty-nine people consented to take part in the study. Five of these dropped out after consenting. Sixty-four drivers consented and participated in the study. The average age of this sample was 76 (range 70 - 88). Table 2 shows the demographic characteristics of these participants. Seventy percent of the sample was female. Fifty-three percent of the sample was married, while 28 percent was widowed. The remaining participants were divorced (14 percent) or single (5 percent). Fifty-three percent had graduated from college or attended graduate school. Participants were predominantly white (98 percent). The median annual household income of the participants was between $30,000 and $40,000.

**Former drivers**

Accessing the population of former drivers proved difficult. Recruitment was initially targeted to senior centers and residential communities by posting flyers at these locations, as had been done for the driving sample. This method yielded no response. Some participant drivers, who had freely offered their help, were asked to assist in locating former drivers. Personal contacts yielded a limited response (n=4). However, in-person recruitment at convalescent homes and in one senior center proved fruitful (n=12). In order to access former drivers in convalescent hospitals, convalescent home staff was approached, and meetings were set up to discuss the project with the site administrators. Site administrators
<table>
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<tr>
<td>Demographic Characteristics of the Prospective Participants - Drivers</td>
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<tr>
<td><strong>Sex</strong></td>
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<tr>
<td>Female</td>
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<tr>
<td>Male</td>
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<tr>
<td><strong>Marital Status</strong></td>
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<tr>
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<tr>
<td>Widowed</td>
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<tr>
<td>Divorced</td>
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<td>Single</td>
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<td>Graduated high school</td>
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<td>Completed graduate or professional degree</td>
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<td><strong>Total annual household income</strong></td>
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<tr>
<td>Refused to answer</td>
<td>3</td>
</tr>
</tbody>
</table>
assisted in locating eligible participants who were not suffering from dementia-related decrements.

The screening process was done in person and on the telephone. Questions were similar to those asked of drivers, although potential former drivers were asked if they still possessed a driver’s license (Appendices E and F). Nineteen percent (n=3) of the former driver sample possessed a license.

The average age of former driver participants was 82 (range 70 - 93). Table 3 shows the demographic characteristics of these participants. Eighty-one percent of the participants were female. Thirty-one percent of the participants were married, sixty-three percent were widowed, and six percent were single. Twenty-five percent had graduated from college or attended graduate school. Participants were predominantly white (87 percent). The median annual household income of the participants was between $20,000 and $30,000.

Population of Older Adults in Orange County

In order to understand how the sample of drivers and former drivers compares to the general population of older adults in the county, census data (Census Bureau, 1990) describing the population in general were consulted. Over ninety-one percent of adults over the age of 60 in Orange County are white, and the mean 1989 income of white adults over the age of 60 was $23,853. While this is an imperfect comparison, the study samples appear to be similar to the older population of Orange County.
### Table 3
Demographic Characteristics of the Retrospective Participants - Former Drivers

<table>
<thead>
<tr>
<th>Sex</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>81</td>
<td>13</td>
</tr>
<tr>
<td>Male</td>
<td>19</td>
<td>3</td>
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**Marital Status**

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Widowed</td>
<td>63</td>
<td>10</td>
</tr>
<tr>
<td>Single</td>
<td>6</td>
<td>1</td>
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</table>

**Educational level**

<table>
<thead>
<tr>
<th>Educational level</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some high school</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Graduated high school</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Vocational training</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Some college</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>Graduated college (Bachelor’s degree)</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>Some graduate or professional school</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

**Race**

<table>
<thead>
<tr>
<th>Race</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>87</td>
<td>14</td>
</tr>
<tr>
<td>Black</td>
<td>13</td>
<td>2</td>
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</table>

**Total annual household income**

<table>
<thead>
<tr>
<th>Income Category</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>Between $20,000 and $30,000</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>Between $30,000 and $40,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Between $40,000 and $50,000</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Between $50,000 and $60,000</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Between $60,000 and $75,000</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>More than $75,000</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Refused to answer</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
Procedure

Drivers

Participants agreed to be available for assessments over a six-month period. The assessments included two interviews, two map drawings, and the completion of two questionnaires. A telephone number was available to those who had concerns regarding the study. Undergraduate interviewers, who were students at the University of California at Irvine, were trained in standard interviewing techniques. Each interviewer practiced the interview several times with another interviewer before conducting an interview with a participant. Pilot testing of all measures was done prior to their inclusion in the final protocols. Nine older adults agreed to take part in piloting of the measures and were asked to critique the measures for understandability and coherence.

Following the screening process, an introductory packet was mailed to all participants (Appendix G). This packet contained an introductory letter along with two guides to assist participants in answering questions over the telephone that assessed life satisfaction and a depression inventory. Also included in the packet were instructions for completing the cognitive map, a piece of plain white paper, and a postage-paid envelope. The first telephone interview (Appendix H) consisted of both closed- and open-ended questions and lasted, on average, 48 minutes ($SD = 20$ minutes). These questions assessed housing type, residential history (places lived and how long in each place), transportation history over lifetime (kind and type of transportation used), transportation status (primary and
secondary modes used), transportation options and perceived availability, and average trips taken during the week. Questions pertaining to psychological health, physical health, life satisfaction, and quality of life also were asked. The first cognitive map exercise was done at the conclusion of the first interview and returned by mail. After receiving the map in the mail, the participants were sent a thank you note (Appendix I).

A second interview was scheduled approximately 16 weeks after initial contact (range 14-21 weeks, average 16.4 weeks). All participants completed both interviews. Except for a modified cover letter (Appendix J), a second packet included the same items as the introductory packet and was mailed again to all participants. The second interview included many of the same questions as the first interview, but also included a series of questions about coping strategies regarding the potential or experienced loss of mobility. The second interview also assessed the number of relatives living nearby, and the number of each participant’s children, grandchildren, and great-grandchildren (Appendix K). The cognitive map exercise was repeated and participants again returned these by mail. Two questionnaires were mailed to participants following completion of their second interview. Participants were instructed to fill the questionnaires out at their leisure. These two questionnaires concerned driving efficacy and the experience and subjective ratings of stressful life events. These questionnaires required approximately 20 to 30 minutes to complete (Appendix L).
Former Drivers

Participants were approached after screening, either in person or via telephone, to answer a set of interview questions. Undergraduate interviewers, who were students at the University of California, Irvine, were trained in standard interviewing techniques. Each interviewer practiced the interview several times with another interviewer before conducting an interview with a participant.

A packet of information was mailed or given to each participant (Appendix M). This packet contained an introductory letter along with two guides to assist participants in answering questions over the telephone that assessed life satisfaction and depression. Instructions for completing the cognitive map, a piece of plain white paper, and a postage-paid envelope were also included in the packet. In some cases, the guides were not used for answering the life satisfaction and depression questions, and in the cases where a participant could not read the guides, the interviewers were trained to spend extra time going over the scales. The interview (Appendix N) included questions assessing transportation status, transportation experiences and attitudes, psychological health, physical health, life satisfaction, and quality of life. Questions also were asked about how, when, and why the participant made the decision to stop driving. Interviews averaged 77 minutes \(SD = 33\) minutes. Cognitive maps were completed at the conclusion of the interview and returned by mail or given to the interviewer.
Measures

Overview

Reliable and valid measures designed or tested for older adult populations were utilized wherever possible. Some measures, particularly the transportation measures, the measure of coping with the loss of mobility, and the cognitive mapping measure, were developed for use with this population by the researcher.

Driver Status

Driver status was conceptualized to represent three different groups of drivers: (1) former drivers, who were not currently driving; (2) modified drivers, who had reduced or changed their driving patterns; and (3) regular drivers, who were driving without modifications. In this regard, modified drivers were those drivers who engaged in any of the following driving behaviors most or all of the time: not driving on the freeways, not driving at night, needing to have a passenger along with them, driving more slowly, avoiding busy streets. Regular drivers were defined as drivers who only engaged in these behaviors some or none of the time.

Because the distinction between modified and regular driver status could depend on the modification of a single driving behavior most of the time, the possibility existed that driving status might be poorly operationalized. By comparing T₁ and T₂ driver classifications and by closely examining changes in driver status, it was possible to examine the reliability of the groupings. First, zero-order correlations were run on the set of T₁ and T₂ driving behaviors, where
each behavior could range from "all of the time" to "none of the time" (on a 4-point scale). Four of the five T₁-T₂ scores were significantly correlated at \( p < .001 \) level: Modification of freeway driving, \( r = .85 \); modification of night driving, \( r = .82 \); driving more slowly, \( r = .42 \); and avoiding busy streets, \( r = .48 \). There was a high correlation between having modified freeway and night driving for the first and second interviews, meaning that most of the participants who had modified these behaviors at the first interview had continued to modify the behaviors at the second interview.

To check on the reliability of driver status classification, specific participants who changed group status were examined. Nine participants changed driving status between T₁ and T₂. Seven of the nine began the study as regular drivers and subsequently were classified as modified drivers, two began as modified drivers and subsequently were classified as regular drivers. The two modified drivers who switched to regular driver status were of particular interest. Both modified-turned-regular drivers had vision problems at T₁ that affected their driving abilities at that time. One was about ready to undergo cataract surgery, and the other described her condition as arrested macular degeneration.

Regarding the seven regular drivers who changed to modified driver status, their particular modifications were as follows: four modified night driving; one avoided freeways; and two made multiple modifications. These changes are within the range of expectation that some participants would stop driving or modify their driving during the study period. Unfortunately, the number of
participants (n=7) who changed from regular to modified status was too small to warrant T₁-T₂ analyses of the hypotheses.

Former drivers were only studied once, and none indicated that they were planning to drive again. It was assumed that because former drivers had stopped driving, there would be no status change for them.

Within the constraints of the study, the driver status categories appear to be reliable. There is not any unexpected movement between the modified driver category and the regular driver category between the two measurements.

**Dependent Variables: Measures of Psychological Well-Being**

Several dimensions of psychological well-being and psychological distress were assessed. Well-being and distress are considered to constitute distinct domains of psychological health, because it has been suggested that positive and negative affect are independent domains, rather opposite ends of a single continuum (Diener & Emmons, 1984; Lawton, 1983; Lawton, Kleban, & DiCarlo, 1989).

**Depression.** Psychological distress was assessed through the Center for Epidemiological Studies Depression Scale, the CES-D scale (Radloff, 1977). The scale was found to be reliable and valid in a community sample of 279 older persons and in a clinical sample of 109 older persons who were in psychiatric inpatient units (Himmelfarb & Murrell, 1983). The scale has high internal consistency (alpha = .85 for the community sample and alpha = .91 for the
clinical sample). The scale also discriminated between the clinical and community samples (Himmelfarb & Murrell, 1983).

The scale is meant to capture depressive symptoms over the past week. Participants rate the amount of time or the extent to which they have felt a certain way, such as "I felt that everything I did was an effort" or "I felt fearful." Respondents answered using the scale "rarely or none of the time, less than one day" (1) to "most or all of the time, five to seven days" (4). Positive items were reverse-coded, then, all items had one point subtracted from them. Items were then added together for a composite score of depression (alpha = .87). Higher scores indicate higher levels of depression. Participants were mailed a guide to assist them in answering the questions (Appendix G).

*General spirits.* General spirits were measured using a 3-item scale (alpha = .83). This 3-item scale assesses current perceptions of happiness, energy, and spirits using 7-point Likert-type scales. The items were scaled from "extremely happy" (1) to "not happy" (7), "high energy" (1) to "low energy" (7), and "spirits high" (1) to "spirits low" (7). The items were then reverse-coded and added together to form a composite scale (alpha = .83).

The three general spirits items, originally assessed on a 5-point Likert scale, were developed for use in a study that examined residential mobility and personal well-being (Stokols, Shumaker, & Martinez, 1983). Pedersen (1991) also utilized these items, in a 7-point Likert scale format, as a composite scale of general well-being in her study of social interactions within a retirement
community. Pedersen (1991) found this scale to have good internal reliability (alpha = .81).

Higher scores indicate higher levels of general spirits. In this study, participants were mailed a guide to assist them with the 7-point Likert-type scale (Appendix G).

**Life satisfaction.** Life satisfaction was assessed with the Life Satisfaction Index-Z (LSI-Z) (alpha = .69) and a composite scale of overall life satisfaction (alpha = .74). The LSI-Z is an abbreviated derivative of the Life Satisfaction Index-A (Neugarten, Havighurst, & Tobin, 1961), which is a widely used measure encompassing five underlying dimensions of psychological well-being. These dimensions include zest, resolution and fortitude, congruence between desired and achieved goals, positive self-concept, and mood tone. Items in this scale utilize a long-term referent, and the measure was developed to be used on older populations. Participants were asked if they agreed or disagreed with a series of statements, such as, "This is the dreariest time of my life." Participants also were given an option to remain neutral. Each item was coded per instructions by Neugarten et al. (1961), where negative items were reverse-coded. Items were added together to produce a composite score of life satisfaction. A higher score indicates a higher level of life satisfaction.

Overall sense of life satisfaction was evaluated by asking general questions pertaining to the participant's level of satisfaction with: their life at this point in time, friends and family, the home, and the community. These questions were
scaled from "very satisfied" (1) to "not at all satisfied" (7). The items were reverse-coded and added together to form the composite scale of "Overall Sense of Life Satisfaction." Higher scores indicate higher levels of overall sense of life satisfaction. Participants were mailed a guide to assist them in answering the 7-point Likert-type scale (Appendix G).

**Dependent Variables: Spatial Representation of Activity Spread**

Cognitive maps were drawn by participants following the conclusion of the telephone interviews on 8 1/2" by 11" white paper. Cognitive maps are individual representations of the environment, and they reflect the way that a person uses and attaches meaning to the environment (Holahan, 1982). Participants were asked to draw maps of their average weekly travels.

Environmental psychologists were inspired to utilize cognitive maps in understanding human perception of the environment by the work of Kevin Lynch (1960), who was interested how residents of different cities remembered or recalled their environment. Lynch asked residents to sketch maps of their cities, and then described their content through analysis and discussion of the memorability of important city landmarks, paths, nodes, districts, and boundaries of the different cities.

According to Russell and Ward (1982), spatial relationships are sometimes assumed to be stored in memory as visual images. While they argue that this metaphor of the cognitive map as a true visual map embedded in one's brain is too literal, they do note that there is some support for such an assumption. There is
evidence that when people sketch maps from memory, subjects report visual images. Further, there is psychological support for a hierarchy of places, judgments in spatial memory between places appear to be affected by superordinate categories for places (Russell & Ward, 1982). Though the maps drawn by participants in this study vary greatly in detail and accuracy, they allow for qualitative analysis on the subjective distances traveled by elderly suburbanites and on the destinations recalled as important to them. Maps were coded on a number of dimensions by two independent raters. These dimensions include pattern/style, level of detail, scope/range, personalization, coherence, map coding task anxiety, and percent of page covered by map. Interrater agreement was no less than eighty percent on all map coding dimensions (range 82-100% agreement).

**Moderator Variables: Environmental Resources**

**Availability of transportation options.** Transportation options were assessed by asking the participants about their perceptions of transportation options available to them, such as transit, taxis, ridesharing, walking, and bicycling. For each option, participants were asked to respond, regardless of the attractiveness of the option, was the option feasible and available to them, "yes" (1) or "no" (0). A scale was developed by summing responses (possible range 1 - 6). The responses were then dichotomized using a median split into those who stated that they had five or more options available to them and those who said they had four or fewer options available to them.
**Housing type.** The type of housing in which participants currently resided was assessed by asking them to describe the dwelling type. The interviewer noted the participant's answer, and then categorized the type of home based on a listing of home types (e.g., apartment, detached home, condominium, mobile home, assisted living facility, convalescent home). The types were then dichotomized into "independent living" and "supported living". Independent living was defined by grouping together those who lived in detached homes, condominiums, apartments, and mobile homes. Supported living was defined as those who resided in assisted living facilities and convalescent or nursing homes.

**Moderator Variables: Environmental Demands**

**Geographic range of activities.** The geographic range of activities was determined by asking about all the destinations the participants visited on a weekly basis. Range was broken into two categories, driving 10 miles or less versus driving over 10 miles, to the farthest regular visit. A larger range was considered, for this study, to represent a heavier environmental demand.

**Moderator Variables: Individual Resources**

**Public transit experience.** Public transit experience was assessed by asking participants what modes or types of transportation they had used throughout their life. If train, bus, streetcar, subway, or trolley were mentioned, then the participant was coded as having used public transit. This measure was dichotomized into having used public transit experience or not having had such experience.
Driving self-efficacy. This measure examines expectations that drivers can successfully execute a particular driving skill. The measure sums expectation ratings, in percentages, over a range of driving situations and tasks, such as backing out your parking space or staying in your lane during thick fog, and it is meant to examine personal beliefs about ability with regard to driving in both difficult and easy situations (Appendix L). Percentages were averaged to give each participant an overall driving self-efficacy rating.

Moderator Variables: Individual Demands

Perceived difficulty accessing resources. Perceived difficulty accessing resources was determined by asking how difficult it would be or was to get to doctor's office visits and grocery stores without the use of the automobile. Each item was scored on a 4-point scale, from "very likely" (1) to face difficulty accessing the resource to "not at all likely" (4) to face difficulty accessing the resource. These two items were reverse coded and, then, added together to form an index of perceived difficulty accessing resources. For modified and regular drivers, these items were considered individual demands, because they are based on individual perceptions of difficulty, which may be distinct from the objective affordances provided by the environment.

Life stressors. Chiriboga (1989) has described stressors as consisting of three basic categorizations: micro, mezzo, and macro. These categorizations relate to the proximity and regularity of the stressor to the individual. Micro level stressors are those that occur on a day-to-day basis, for example, getting caught in
a traffic jam or running out of toothpaste. Mezzo level stressors are those that are typically considered as involving the original life-events research (Holmes & Rahe, 1967), such as getting married or losing a job. Finally, the macro level stressors are those that impact first on society at large, such as the threat of war or bad economic news.

For this study, the mezzo level stressors were examined. The mezzo level stressors, or the occurrence of general life events, were examined through an adaptation of the Mensh (1983) modification of the Stressful Life Events (SRE) inventory. This modified 27-item inventory was developed to be suitable for older populations. It was adapted by asking the participants to rate a number of stressful life events (e.g., retirement, death of spouse, divorce, losing driver's license, major personal injury or illness), in terms of how stressful facing such an event would be for them on a 5-point scale ("not at all stressful" to "very stressful"), and then marking whether or not they had experienced the event.

**Mediator Variables**

**Problem-focused and emotion-focused coping.** The coping process was assessed through open-ended questions designed to elicit problem-focused and emotion-focused coping strategies that participants will likely use or have used following the loss of mobility. The questions asked how the person would or had dealt with the loss of the license, if the person knew anyone who had lost the license, and, if so, how that person had dealt with the loss, and, finally, what kind of advice the participant would give a friend who had just lost their license.
Answers to the open-ended questions pertaining to coping with changing mobility status were content-analyzed and placed into problem-focused or emotion-focused coping categories. These categories were based on a factor analysis performed on the Ways of Coping Scale (Folkman & Lazarus, 1980) by Felton and Revenson (1987): the resulting factors were for the license loss coping strategies. A trained assistant categorized participants' answers into the appropriate subscale.

Reliability checks were performed by a second coder on twenty percent of the categorizations. There was 87.5 percent agreement on the categorizations.

The subscales derivations (from Felton & Revenson, 1987) used for the categorizations were the following: Information Seeking, which was the sole instrumental or problem-focused subscale, describes the individual's search for information and advice regarding license loss. This involves, for example, the stated use of strategies related to learning new skills or changing transportation methods. Cognitive Restructuring describes efforts to find positive aspects of the driver license loss, such as spending more time with neighbors as a result of being at home more often. This strategy includes a number of cognitive reappraisal processes, such as maintaining an optimistic outlook and redefining the loss as a positive event. Emotional Expression involves strong behavioral expressions of the strains related to license loss, such as crying or complaining to others about the loss. Wish-Fulfilling Fantasy is a strategy by which a person longs or hopes that the loss will not affect them or that they can somehow undo the loss. Threat Minimization, as compared to an escape provided by fantasy, involves a ccscious
refusal to ruminate on thoughts about the loss, and a rather stoic position of not seeking or agreeing for help from others. Finally, Self-Blame is a strategy where the person takes responsibility for the license loss, such as suggesting that the loss came about due to some action by the person.

Control Variables

Demographic information. Age, gender, income level, education level, marital status, and ethnic identification were assessed.

Physical health. Assessments by older adults of their own health status has been found to correlate strongly with objective ratings of their health (Maddox & Douglass, 1973; Pedersen, 1991; Wilson & Netting, 1987). For example, Pedersen found, in her study of 102 older adults, that self-reported quality of health was significantly correlated with nurses' ratings of participants' health. Thus, self-report ratings of health are a convenient method to assess health status without intruding into participants' medical records.

A variation of the widely-used Alameda County health assessment measure (Berkman & Breslow, 1983; Meltzer & Hochstim, 1970) was used for this study. It included questions regarding chronic conditions, ailments, and physical mobility. Examples of chronic conditions include having diabetes, heart disease, or cancer sometime during the past 12 months. Examples of medical symptomatology include having been dizzy, had chest pain, or had back pain sometime during the past 12 months. The number of medical conditions and the number of ailments were added together for each participant in order to assess
health status. Physical mobility questions concerned whether or not the participant could get out of doors and up and down stairs easily. Health was initially construed as an outcome variable, but subsequently used as a covariate in the following analyses.
Results

Overview

Descriptive statistics were computed on the demographic and health characteristics of the three driving status groups. Sex and marital correlates of key variables were examined as well. The distributional properties of the primary study variables were examined to detect significant departures from normality. Then, zero-order correlations were computed between demographic and health characteristics, between all dependent variables, and between demographic characteristics, health, and the dependent variables. Bivariate and multivariate statistics were computed to test hypothesized relationships between independent and dependent variables and to examine the influence of the hypothesized moderators on the relationships between the predictor and outcome variables. Finally, exploratory analyses were conducted on the possible differences in the self-assessment of driving abilities and the spatial dispersion of daily activities between regular and modified drivers. Additional exploratory analyses were conducted among all three driver status groups to examine the relationship between driver status and feelings of constraint in dealing with or anticipating the loss of the license and to describe differences in stated coping strategies.
Descriptive Statistics

Group Comparisons

Driving status groups. Participants in the three driving status groups differed significantly in age, education level, and household income (Table 4). Among the three groups, former drivers were the oldest ($M = 81.9$ years) and regular drivers were youngest ($M = 74.9$ years). In educational attainment, the regular drivers completed the highest level education ($M = 6.2$, "college graduate") and the former drivers completed the least ($M = 4.8$, "attended some college"). Post-hoc tests (Scheffe) were conducted on group means. Former drivers differed from modified and regular drivers in age, where former drivers were older than the other two groups. Former drivers differed from regular drivers in education level, where former drivers had lower levels of educational attainment than did regular drivers. And, modified drivers differed from regular drivers in household income, where modified drivers had less annual household income than did regular drivers. No significant differences were found among the three driving status groups in terms of the number of chronic conditions or the number of physical ailments, although there were differences on two of the 25 conditions and ailments examined. No modified drivers, but 25 percent of former drivers and 22 percent of regular drivers, reported having heart trouble, $X^2 (2, N = 80) = 7.7, p < .05$. More former drivers (56.3%) reported having swollen ankles than did modified drivers (28.6%) and regular drivers (11.1%), $X^2 (2, N = 80) = 11.8, p < .005$. Lack of differences on 23 of the 25 conditions and
### Table 4
Age, Education, and Income Differences Among Driving Status Groups

<table>
<thead>
<tr>
<th>Driving Status</th>
<th>Former Drivers</th>
<th>Modified Drivers</th>
<th>Regular Drivers</th>
<th>F</th>
<th>p</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, in years</td>
<td>81.9&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>76.9&lt;sup&gt;a&lt;/sup&gt;</td>
<td>74.9&lt;sup&gt;b&lt;/sup&gt;</td>
<td>10.84</td>
<td>.000</td>
<td>1.78</td>
</tr>
<tr>
<td>Education Level</td>
<td>4.8&lt;sup&gt;c&lt;/sup&gt;</td>
<td>5.4&lt;sup&gt;&lt;/sup&gt;</td>
<td>6.2&lt;sup&gt;c&lt;/sup&gt;</td>
<td>6.50</td>
<td>.003</td>
<td>1.78</td>
</tr>
<tr>
<td>Annual Household Income</td>
<td>3.1&lt;sup&gt;&lt;/sup&gt;</td>
<td>2.9&lt;sup&gt;d&lt;/sup&gt;</td>
<td>4.2&lt;sup&gt;d&lt;/sup&gt;</td>
<td>4.08</td>
<td>.021</td>
<td>1.73</td>
</tr>
</tbody>
</table>

*Note.* Standard deviations are in parentheses. Education level and annual household income are categorical variables treated as interval-level data. Means sharing the same subscript differ significantly from each other (p < .05) based on Scheffe a posteriori comparisons.
ailments suggest that the composite measures of chronic conditions and physical ailments are not masking group differences in important dimensions of health.

*Marital status and sex.* The relationship of age and marital status was highly significant, $F(3,76) = 7.06, p < .0001$. Post-hoc tests (Scheffe) performed on the age means for the marital status groups indicated that married ($M = 75.2$ years) and divorced ($M = 73.7$ years) persons were significantly younger than widowed persons ($M = 80.0$ years). Single persons had an average age of 80.3 years, but, with only 4 people in this category, there was insufficient power to differentiate this group from the others.

No significant differences between men and women were found on any of the dependent measures or health variables. Gender was not hypothesized to interact with driving status. Because the former and modified driver groups contained only three men each, exploratory analyses of gender in conjunction with driving status were not conducted.

*Distributional Properties of Variables*

The dependent variables were examined for normality. The depression measure (CES-D) was skewed (skewness = 2.40). However, the CES-D is meant to detect clinical levels of depression in normal groups, and, thus, the distribution of the CES-D is usually skewed in normal populations. While there was variation in this measure, the majority of this sample (90%) was not clinically depressed. The life satisfaction measures and the general spirits measure were slightly skewed in the negative direction.
Intercorrelational Analyses

The intercorrelations among the covariates, among the dependent measures, and between the covariates and the dependent measures are contained in Tables 5, 6, and 7, respectively. The means, standard deviations, and ranges are also presented in Tables 5 and 6 for the covariates and the dependent measures, respectively.

For the covariates, education and income are positively associated ($r = .58$), as are the number of chronic conditions and the number of physical ailments ($r = .54$). Income was not measured at the individual level and was missing for some participants (five refused or did not know their income level). Because of the missing values, and because household income was significantly associated with education, income was not used as a covariate in the hypothesis tests. Similarly, because chronic conditions and ailments are highly correlated, and because the number of ailments was related to the dependent measures (whereas the number of chronic conditions was not), the number of ailments was used as a covariate rather than the number of chronic conditions. Therefore, only age, education level, and number of physical ailments will be used as control variables in all analyses.

All dependent measures tap aspects of the general construct of psychological well-being, and, as expected, the indices were highly intercorrelated. Higher levels of depression were associated with lower general
<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
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<tr>
<td>1. Age</td>
<td>77.0</td>
<td>5.5</td>
<td>70.0 - 93.0</td>
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<tr>
<td>2. Education</td>
<td>5.65</td>
<td>1.5</td>
<td>2 - 8</td>
<td>-.18</td>
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<td>--</td>
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<tr>
<td>level</td>
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<tr>
<td>3. Income</td>
<td>3.56</td>
<td>2.0</td>
<td>1 - 7</td>
<td>-.17</td>
<td>.58**</td>
<td>--</td>
<td>--</td>
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<td>level</td>
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<tr>
<td>4. Chronic</td>
<td>1.63</td>
<td>1.5</td>
<td>0 - 6</td>
<td>.14</td>
<td>.01</td>
<td>.15</td>
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<td>conditions</td>
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<tr>
<td>5. Physical</td>
<td>2.18</td>
<td>1.8</td>
<td>0 - 8</td>
<td>.12</td>
<td>-.05</td>
<td>.00</td>
<td>.54**</td>
</tr>
<tr>
<td>ailments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*N = 75 - 80  
* p < .01  ** p < .001 (2-tailed significance)
|   |   |   |   |   |   |
|---|---|---|---|---|
| 1. Depression (CES-D) | M | SD | Range | 1. | 2. | 3. |
|   | 7.66 | 8.2 | 0 - 46 | -- | -- | -- |
| 2. General spirits | 15.89 | 3.4 | 5 - 21 | -.68** | -- | -- |
| 3. Life Satisfaction (LSI-Z) | 16.61 | 4.8 | 0 - 26 | -.63** | .61** | -- |
| 4. Overall Sense of Life Satisfaction | 22.86 | 4.2 | 11 - 28 | -.68** | .62** | .58** |

*N = 79 - 80  
* * p < .01  ** p < .001 (2-tailed significance)
<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Education Level</th>
<th>Physical Ailments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (CES-D)</td>
<td>.17</td>
<td>-.27</td>
<td>.43***</td>
</tr>
<tr>
<td>General Spirits</td>
<td>-.28*</td>
<td>.19</td>
<td>-.30**</td>
</tr>
<tr>
<td>Life Satisfaction (LSI-Z)</td>
<td>-.23</td>
<td>.28</td>
<td>-.28</td>
</tr>
<tr>
<td>Overall Sense of Life Satisfaction</td>
<td>-.02</td>
<td>.33**</td>
<td>-.29**</td>
</tr>
</tbody>
</table>

*N = 75 - 80  
* p < .05  ** p < .01  *** p < .001 (2-tailed significance)
spirits \( (r = -.68) \), lower life satisfaction \( (r = -.63) \), and lower overall sense of life satisfaction \( (r = -.68) \). Higher ratings of general spirits were correlated with higher levels of life satisfaction \( (r = .61) \) and higher levels of overall sense of life satisfaction \( (r = .62) \). The life satisfaction measures (LSI-Z and the overall sense of life satisfaction scale) were positively correlated with each other \( (r = .58) \). The two life satisfaction scales were developed to measure different time referents. The LSI-Z examines life satisfaction reflected over one's entire life, whereas the overall sense of life satisfaction measure is situated entirely in the present. Therefore, the finding of only a moderate level of shared variance between LSI-Z and the overall sense of life satisfaction measure reflects that these indices measure life satisfaction evaluated through different time frames.

Study participants with more physical ailments reported more depression \( (r = .43) \), lower general spirits \( (r = -.30) \), and lower overall sense of life satisfaction \( (r = -.29) \). Study participants with greater education reported higher overall sense of life satisfaction \( (r = .33) \), and older participants reported lower general spirits \( (r = -.28) \).

**Hypothesis Tests**

**Testing Main Effects**

**Hypothesis 1.1: The loss of the license and its association with well-being, health, and mobility.** It was initially hypothesized that the loss of the driver's license would be related over time to lower levels of psychological well-being (indexed by the CES-D, general spirits, the LSI-Z, and overall sense of
life satisfaction and health and to limited mobility. Cross-sectional data were used to test this hypothesis in lieu of prospective data. Because of the interpretational limitations with cross-sectional data, all findings are assumed to be associational and exploratory.

Health, for example, was originally hypothesized to be a dependent variable. As such, health was expected to decline with the change from driver to former driver status controlling for time one health. It is not appropriate, however, to suggest a causal relationship between driver status and health using cross-sectional data, as declines in health could precede the loss of the driver's license. Therefore, the original hypothesis regarding the relationship between a change in driver status and health was not tested.

A diminished geographic range of activities was also hypothesized to result from the loss of the driver's license. As with health, shrinkages in the geographic range of activities could not be examined cross-sectionally, because at least two data points linked to change, in this case, the loss of the license, were not available.

It was possible, however, to conduct exploratory multivariate analyses of covariance (MANCOVAs) that examine the relationships between driving status and the psychological well-being measures. In these analyses, age, education level, and number of physical ailments were included as covariates. Pillai-Bartlett's trace criterion was selected to test the multivariate relationships, as it is the most robust of the criterion tests, and the significance level can be reasonably
correct even when the assumptions of the test are not completely met (Bray & Maxwell, 1985). The MANCOVA performed on the CES-D, general spirits, the LSI-Z, and overall sense of life satisfaction was not significant, but there were significant univariate tests.

Bray and Maxwell (1985) have pointed out the potential for nonsignificant multiple analyses of variance (MANOVAs) with attendant significant analyses of variance (ANOVAs) in circumstances where there is insufficient statistical power, such as when there are a limited number of cases and possible within-group intercorrelations between variables. Because of these potential mitigating problems, analysis of covariance (ANCOVA) was selected as a secondary method to examine the hypothesized relationships.

Prior to conducting the ANCOVAs, Levene tests were run on each dependent variable to examine the extent to which heterogeneity of the variance would be potentially problematic. No problems were found. Means and standard deviations of each dependent variable by the three driving status categories are given in Table 8. The hypothesized relationships with driving status were significant for general spirits, $F(2,74) = 3.14, p < .05$, and life satisfaction (LSI-Z), $F(2,74) = 4.41, p < .05$. That is, former drivers reported lower levels of general spirits and life satisfaction than did the modified and regular drivers. Between the modified and regular drivers, modified drivers reported lower levels of general spirits and life satisfaction than did regular drivers. The test of overall sense of life satisfaction approached significance ($p = .06$). Post-hoc Scheffe
Table 8
Well-being According to Driving Status

<table>
<thead>
<tr>
<th>Driving status</th>
<th>Former drivers (n = 11 - 16)</th>
<th>Modified Drivers (n = 28)</th>
<th>Regular Drivers (n = 36)</th>
<th>F</th>
<th>p</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (CES-D)</td>
<td>12.0&lt;sup&gt;a&lt;/sup&gt; (9.9)</td>
<td>8.4 (9.2)</td>
<td>5.3&lt;sup&gt;a&lt;/sup&gt; (5.6)</td>
<td>1.20</td>
<td>.31</td>
<td>2.73</td>
</tr>
<tr>
<td>General spirits</td>
<td>18.0&lt;sup&gt;b&lt;/sup&gt; (5.3)</td>
<td>21.0 (3.8)</td>
<td>22.8&lt;sup&gt;b&lt;/sup&gt; (3.8)</td>
<td>3.14</td>
<td>.04</td>
<td>2.74</td>
</tr>
<tr>
<td>Life Satisfaction (LSI-Z)</td>
<td>13.1&lt;sup&gt;c&lt;/sup&gt; (5.0)</td>
<td>16.0 (4.7)</td>
<td>18.6&lt;sup&gt;c&lt;/sup&gt; (3.9)</td>
<td>4.41</td>
<td>.02</td>
<td>2.74</td>
</tr>
<tr>
<td>Overall sense of life satisfaction</td>
<td>20.6&lt;sup&gt;d&lt;/sup&gt; (5.3)</td>
<td>22.4 (4.0)</td>
<td>24.2&lt;sup&gt;d&lt;/sup&gt; (3.3)</td>
<td>2.95</td>
<td>.06</td>
<td>2.74</td>
</tr>
</tbody>
</table>

Note. Standard deviations are given in parentheses. Means sharing the same subscript differ significantly from each other (p < .05) based on Scheffe a posteriori comparisons.
tests were also conducted on the between group means. Former drivers had lower levels of well-being than did regular drivers.

**Hypothesis 1.2: The type of license loss and its association with well-being.** Sixteen former drivers were included in analyses conducted to test Hypothesis 1.2. The discontinuation of driving as a function of voluntary-to-involuntary and sudden-to-gradual continua was hypothesized to be related to well-being. Participants who gave up driving voluntarily were expected to have higher levels of well-being than those who gave up driving involuntarily. Secondly, those whose loss of mobility occurred suddenly were expected to have lower levels of well-being than those who experienced the loss gradually.

Eleven of the sixteen drivers (69%) made the decision to stop driving on their own, three (19%) said that they were forced to stop driving by others, and two (12%) said that they and others made the decision. The last two groups were combined in order to achieve a larger cells size for the involuntary category. Regarding the sudden-to-gradual dimension, ten of the drivers (63%) said that they stopped driving suddenly.

Though the cell sizes were small, these hypotheses were tested by examining group mean differences using t-tests. There were no significant differences between the groups on any of the dependent measures. Those who had decided to stop driving on their own had a mean depression score of 10.1 (SD = 6.1) versus those who were forced to stop driving by others or who had made the decision along with others to stop driving differed who had a mean depression
score of 15.8 ($SD = 15.1$). Those who had stopped driving on their own had a mean general spirits score of 14.1 ($SD = 4.1$) versus those who were forced to stop driving by others or who had made the decision along with others to stop driving differed who had a mean general spirits score of 13.2 ($SD = 3.8$). The mean life satisfaction score was 13.3 ($SD = 3.5$) for those who had decided to stop driving on their own as compared to 12.8 ($SD = 7.8$) for those who were forced to stop driving by others or who had made the decision along with others to stop driving. Finally, the mean overall sense of life satisfaction score was 21.4 ($SD = 4.9$) for those who had decided to stop driving on their own as compared to 19.00 ($SD = 6.4$) for those who were forced to stop driving by others or who had made the decision along with others to stop driving.

In terms of the sudden-to-gradual dimensionality of license loss, the mean score of depression among those who gave up the license suddenly was 12.2 ($SD = 12.3$) versus 11.7 ($SD = 5.6$) for those who gave up the license slowly. The mean general spirits score was 13.4 ($SD = 4.1$) for those who had given up the license suddenly versus 14.5 ($SD = 3.8$) for those who had given up the license slowly. The mean life satisfaction score was 13.0 ($SD = 6.3$) for those who gave up the license suddenly versus 13.3 ($SD = 1.2$) for those who gave up the license slowly. Finally, the overall sense of life satisfaction mean for those who gave up the license suddenly was 18.9 ($SD = 5.5$) versus 23.5 ($SD = 3.7$) for those who gave up the license slowly.
Though the null hypothesis cannot be rejected in this case, the nonsignificant results may have been due to lack of statistical power associated with small cell sizes. In all cases the trend of life satisfaction scores are in the direction hypothesized, where those who experienced sudden and nonvoluntary license loss had lower well-being than did those who experienced gradual and voluntary license loss.

**Testing Moderating Effects**

A series of ANCOVAs were conducted on the dependent measures that included terms to represent the interaction of each moderator with the driver status variable. Significant interaction effects in the direction hypothesized would indicate support for the moderational associations.

**Hypothesis 2.1: The moderating role of environmental resources.** Environmental resources, particularly available transportation options and supportive housing, were hypothesized to moderate the relationship between mobility loss and the well-being outcomes. Greater environmental resources (more transportation options and a supportive living arrangement) were hypothesized to reduce the adverse effects of mobility loss. Supportive living included both assisted living facilities and convalescent homes.

No significant interactions with transportation options were found. Controlling for age, education level, and ailments, supportive housing interacted with driving status in the analysis of one dependent variable, overall sense of life satisfaction. \( F(2,71) = 5.32, p < .01 \) (Table 9). Among those in the supportive
<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Former drivers (n = 16)</th>
<th>Modified Drivers (n = 28)</th>
<th>Regular Drivers (n = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>22.7 (4.7)</td>
<td>21.8 (3.7)</td>
<td>23.9 (3.5)</td>
</tr>
<tr>
<td></td>
<td>n = 7</td>
<td>n = 25</td>
<td>n = 29</td>
</tr>
<tr>
<td>Supportive</td>
<td>19.0 (5.5)</td>
<td>27.7 (0.6)</td>
<td>25.4 (1.4)</td>
</tr>
<tr>
<td></td>
<td>n = 9</td>
<td>n = 3</td>
<td>n = 7</td>
</tr>
</tbody>
</table>

*Note.* Standard deviations are given in parentheses. The ANCOVA test for the above means found a significant main effect for driving status, $F(2,71) = 3.27, p < .05$, and a significant interaction of driving status and transit experience, $F(2,71) = 5.32, p < .01$. 
living group, however, former drivers had the lowest overall sense life satisfaction than any other group. This finding runs counter to the hypothesis that former drivers living in supportive housing would have higher levels of well-being than would former drivers living in independent living situations. Modified drivers living in supportive housing situations had the highest level of overall sense of life satisfaction. though, the stability of this finding is limited as there were small cell sizes in the supported living groups. The mean differences on current life satisfaction for those in supportive arrangements might be explained by driver status differences -- only former drivers were recruited from convalescent homes.

_Hypothesis 2.2: The moderating role of environmental demands._

Environmental demands (in this case, large distances between home and health care facilities, markets, and recreational activities) were hypothesized to moderate the relationship between mobility loss and well-being. Having greater distances between home and external resources was expected to exacerbate the effects of loss of mobility. The number of miles participants traveled to their furthest resource on a regular basis was used to index distance to resources. Because of limitations on "activity range" for former drivers (all but one former driver regularly traveled less than 10 miles to any place), however, cell sizes became too small to examine this hypothesis adequately with all three driver status groups. ANCOVAs accordingly were conducted with modified drivers and regular drivers. The interaction effects were not significant.
Hypothesis 2.3: The moderating role of individual resources. Individual resources were hypothesized to moderate the relationship between mobility loss and well-being. Having prior experience with public transit was the individual resource examined in this study, and this was hypothesized to buffer the adverse effects of mobility loss.

The tests of the interaction between driving status and prior experience with transit were not significant for CES-D, general spirits, or LSI-Z. Prior experience with public transit interacted with driving status in the analysis of one dependent variable, overall sense of life satisfaction. Table 10 shows that former drivers who have not had prior experience with transit had much lower overall sense of life satisfaction than did former drivers who have had prior experience with transit. The overall sense of life satisfaction of modified and regular drivers did not differ as a function of prior driving experience.

Hypothesis 2.4: The moderating role of individual demands. Individual demands, particularly the perceived difficulty in accessing doctor's offices and grocery stores without use of or with reduced use of an automobile, were hypothesized to moderate the relationship between mobility loss and well-being. Participants who perceived more demands (greater difficulty in accessing these resources) were hypothesized to experience adverse effects of mobility loss.

All former drivers perceived difficulty in accessing doctor's offices and grocery stores and nearly all (93%) of modified drivers reported no perceived
## Table 10
Overall Sense of Life Satisfaction by Driving Status and Transit Experience

<table>
<thead>
<tr>
<th>Transit Experience</th>
<th>Former drivers (n = 16)</th>
<th>Modified Drivers (n = 28)</th>
<th>Regular Drivers (n = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had prior experience</td>
<td>23.3 (4.4) n = 8</td>
<td>22.4 (4.1) n = 19</td>
<td>23.9 (3.5) n = 24</td>
</tr>
<tr>
<td>No prior experience</td>
<td>18.0 (5.1) n = 8</td>
<td>21.0 (3.9) n = 9</td>
<td>22.8 (2.7) n = 12</td>
</tr>
</tbody>
</table>

*Note.* Standard deviations are given in parentheses. The ANCOVA test for the above means found a significant main effect for driving status, $F(2,71) = 3.20, p < .05$, and a significant interaction of driving status and transit experience, $F(2,71) = 3.20, p < .03$. 
difficulty in accessing these resources. Therefore, further analyses were not conducted.

**Testing Mediation**

**Hypotheses 3.1 and 3.2: The mediational role of coping strategies.** As originally presented, the hypotheses could not be tested, because there was no basis to examine the coping process using cross-sectional data. However, descriptions of coping strategies by driving status are given in the following section on exploratory analyses.

**Exploratory Analyses**

Exploratory analyses were conducted in order to gain additional information about differences between regular, modified, and former drivers on a variety of measures. The first two analyses were conducted on data from the regular and modified drivers.

The first of these examined possible differences in the self-assessment of driving abilities between regular and modified drivers. This was done in order to explore whether modified drivers, who have made changes their driving behavior, give lower self-assessments of their skill level as compared to regular drivers.

The second analysis describes differences in the cognitive mapping exercise of modified and regular drivers. Unfortunately, map data could not be gathered from the majority of the former driver group. Some of the former drivers were blind, and others, did not feel able to complete the map task due to crippling arthritis or other personal limitations. The comparison between the modified and
regular drivers was done to see if these two groups differ in terms of pattern and style, level of detail, the scope or range of activities, the personalization, and the coherence of their map drawings. One could posit that modified drivers might withdraw from their environments and, thus, might not draw their weekly activities via the automobile in great detail.

The next two analyses were conducted on data from all three driver status groups. The first of these analyses was conducted to explore the relationship between driver status and feelings of constraint in dealing with or anticipating the loss of the license. Do former drivers feel more constraint than modified drivers in terms of how no longer driving has affected their feelings of independence, freedom, and control over their activities? Do regular drivers anticipate that no longer driving will affect their feelings of independence, freedom, and control over their activities?

The last of the exploratory analyses describes differences in coping strategies among the three driving status groups. Using the coping categories described in the methods section, the most prevalent coping strategies by driver status group are presented. Then, relationships between the various coping strategies and psychological well-being are described.

**Self-assessment of Driving Abilities**

To examine self-assessment of driving abilities between modified and regular drivers, post-hoc analyses of driving self-efficacy were conducted. Using ANCOVA, the two driver groups were compared on mean scores of driving self-
efficacy. This self-assessment measure was meant to examine personal beliefs about ability with regard to driving in both difficult and easy situations (Appendix K). An overall percent score was calculated for all those returning completed questionnaires. Significant differences were found between the two driver groups. Regular drivers ($M = 88.1; SD = 9.9$) scored significantly higher than modified drivers ($M = 76.3; SD = 15.6$), controlling for age, education level, and number of ailments, $F(1,45) = 8.0, p < .01$.

**Spatial Dispersion of Daily Activities -- Cognitive Mapping**

Analyses were conducted on drawings made by modified and regular drivers on dimensions of pattern/style, level of detail, scope/range, personalization, coherence, map coding task anxiety, and page coverage. *T* test and chi-square statistics were run comparing the modified and regular driver status group. No significant differences were found between the two driver status groups for the dimensions of pattern/style, level of detail, personalization, coherence, or page coverage.

Modified drivers had a smaller range or scope of activity ($M = 3.0; SD = 1.7$) than did regular drivers ($M = 3.9; SD = 1.6$), meaning that modified drivers drove, on average, in three directions from their house to their weekly activities, whereas, regular drivers drove, on average, in all four directions from their house to their weekly activities. $t(58) = -2.21, p < .04$.

The amount of anxiety, manifested by asking questions about the mapping exercise, by telling the interviewers that drawing the map would be difficult, or by
needing to be reminded a number of times about returning the drawing, was also
different between the two groups. Thirty-two percent of modified drivers
appeared anxious about the map-drawing task as compared to only twelve percent
of the regular drivers, \( X^2 (1, N = 62) = 3.5, p < .05. \)

**Driving Status and Feelings of Constraint**

A MANCOVA was conducted on three constraint factors (the extent to
which losing the license has or could affect feelings of control, independence, and
freedom). Age, education level, and number of physical ailments were included
as covariates. The overall analysis was significant, \( V = .46, F(6.144) 7.15, p < .0001. \) All univariate \( F \)-tests were significant at the \( p < .001 \) level. Table 11
shows univariate mean differences between the three driver groups. Post-hoc
Scheffe tests were also conducted on the between group means. Regular drivers
anticipate a high degree of constraint in their lifestyle due to the loss of the
license. Former drivers report moderately high levels of constraint following the
loss, while modified drivers report low levels of constraint with their current level
of mobility.

**Descriptive Analysis of Coping Strategies**

Descriptions of coping strategies reported by participants were categorized
and examined. The coping strategies were elicited by asking participants how
they would cope or how they have coped with license loss. Drivers, both
modified and regular, listed a number of problem- and emotion-focused strategies
that they state they will use when faced with the loss of the license. Former
Table 11

Expected or Actual Experiences of Reduced Independence, Freedom, and Control
As a Function of Previous or Anticipated Changes in Driving Status

<table>
<thead>
<tr>
<th>Driving Status</th>
<th>Former drivers</th>
<th>Modified drivers</th>
<th>Regular drivers</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td>2.9&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.9&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.6&lt;sub&gt;a&lt;/sub&gt;</td>
<td>18.75</td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.0)</td>
<td>(.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom</td>
<td>2.6&lt;sub&gt;b&lt;/sub&gt;</td>
<td>2.3&lt;sub&gt;c&lt;/sub&gt;</td>
<td>3.4&lt;sub&gt;b,c&lt;/sub&gt;</td>
<td>7.70</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.0)</td>
<td>(.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control over activities</td>
<td>2.7&lt;sub&gt;d,e&lt;/sub&gt;</td>
<td>1.9&lt;sub&gt;d,f&lt;/sub&gt;</td>
<td>3.6&lt;sub&gt;d,e,f&lt;/sub&gt;</td>
<td>17.07</td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>(1.2)</td>
<td>(1.1)</td>
<td>(.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Ratings were measured on a 4-point scale. Standard deviations are given in parentheses. Means sharing the same subscript differ significantly from each other (*p* < .05) based on Scheffe a posteriori comparisons.
drivers. In contrast, only mentioned having used emotion-focused coping strategies.

Because the question eliciting coping strategies was open-ended, participants could name any number of coping strategies. Table 12 shows the percent of the participants in each driving group who said that they would use or have used a particular technique. The most common strategy former drivers used is cognitive restructuring. For example, these former drivers considered the loss of the license a challenge, rather than a deficit, or stated that they looked forward to having people take them places rather than having to drive themselves. Both modified and regular drivers mentioned threat minimization strategies most often, if they were to be faced with the loss of the driver’s license. For example, these drivers stated that they would have to accept the license loss or that they like to be independent.

Interestingly, no former drivers stated that they had utilized problem-focused strategies. Their answers to the open-ended question on coping focused entirely on emotion-focused strategies, such as cognitive restructuring or threat minimization, whereas over half of both modified and regular drivers said they would expect to use the problem-focused strategy of information seeking.

Analyses also were conducted to examine the relationship between the coping strategies and the psychological well-being measures. Five separate MANCOVAs, conducted for each emotion-focused coping strategy, were
<table>
<thead>
<tr>
<th>Driving Status</th>
<th>Former Drivers</th>
<th>Modified Drivers</th>
<th>Regular Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Seeking</td>
<td>0.0 (n=0)</td>
<td>53.6 (n=15)</td>
<td>55.6 (n=20)</td>
</tr>
<tr>
<td>Cognitive Restructuring</td>
<td>62.5 (n=10)</td>
<td>21.4 (n=6)</td>
<td>16.7 (n=6)</td>
</tr>
<tr>
<td>Emotional Expression</td>
<td>37.5 (n=6)</td>
<td>57.1 (n=16)</td>
<td>50.0 (n=18)</td>
</tr>
<tr>
<td>Wish-fulfilling Fantasy</td>
<td>12.5 (n=2)</td>
<td>7.1 (n=2)</td>
<td>8.3 (n=3)</td>
</tr>
<tr>
<td>Threat Minimization</td>
<td>50.0 (n=8)</td>
<td>78.6 (n=22)</td>
<td>63.9 (n=23)</td>
</tr>
<tr>
<td>Self Blame</td>
<td>25.0 (n=4)</td>
<td>7.1 (n=2)</td>
<td>13.9 (n=5)</td>
</tr>
</tbody>
</table>
performed on the dependent variables (depression, general spirits, the LSI-Z, and overall sense of life satisfaction). In these analyses, age, education level, and number of physical ailments were included as covariates. The problem-focused strategy, Information Seeking, was not examined, because former drivers did not mention using this strategy to cope with the loss of the driver’s license. All MANCOVAs were non significant.

ANCOVA was then used as a secondary method to examine the relationships between coping strategy and psychological well-being. In these ANCOVAs, age, education level, and number of physical ailments were included as covariates. The stated or expected use of cognitive restructuring was found to be significantly related to general spirits, $F(1,71) = 4.03, p < .05$, and overall sense of life satisfaction, $F(1,71) = 8.14, p < .01$ (Table 13). The relationship between driving status and cognitive restructuring was not examined, due to small cell size.
Table 13
Well-being According to the Use of Cognitive Restructuring

<table>
<thead>
<tr>
<th>Use of Cognitive Restructuring</th>
<th>Have not used/ Did not state would use ( (n = 57 - 58) )</th>
<th>Have used/ Did state would use ( (n = 22) )</th>
<th>( F )</th>
<th>( p )</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (CES-D)</td>
<td>8.0 (9.1)</td>
<td>6.7 (5.1)</td>
<td>3.78</td>
<td>.06</td>
<td>1.70</td>
</tr>
<tr>
<td>General spirits</td>
<td>15.8 (3.6)</td>
<td>16.1 (3.1)</td>
<td>4.03</td>
<td>.05</td>
<td>1.71</td>
</tr>
<tr>
<td>Life Satisfaction (LSI-Z)</td>
<td>16.9 (5.2)</td>
<td>15.9 (3.6)</td>
<td>0.53</td>
<td>.50</td>
<td>1.71</td>
</tr>
<tr>
<td>Overall sense of life satisfaction</td>
<td>22.4 (4.4)</td>
<td>24.0 (3.4)</td>
<td>8.14</td>
<td>.01</td>
<td>1.71</td>
</tr>
</tbody>
</table>

Note. Standard deviations are given in parentheses.
Discussion

Loss of the driver’s license is an impactful stressor in the lives of older adults (Sandeen, Rivera, & Gutierrez, 1996: see also Appendix A). Because the number of older adults in the United States is growing, mainly in suburbia, and because these elders primarily rely on the private automobile as transportation, how older adults adjust to license loss is important at both a societal and an individual level. This study sought to examine well-being differences between three groups of drivers -- former, modified, and regular -- in order to better understand how loss of mobility affects quality of life. An examination of how psychological well-being was moderated by environmental resources and demands and by individual resources and demands was also conducted in order to understand how the effects of mobility loss may be buffered or exacerbated. The possibility that the effects of loss of the license on well-being might be affected by the way that the loss occurred (gradual versus sudden and voluntary versus involuntary) or by the type of coping utilized (problem-focused versus emotion-focused) was also explored.

This is among the first psychosocial study to examine older adults and mobility loss in terms of driver status. Driver status was found to be significantly related to well-being on two of four indicators. Controlling for age, education, and physical ailments, driver status was found to be significantly related to life satisfaction and general spirits. Former drivers had the lowest levels of life satisfaction,
satisfaction and general spirits, while regular drivers had the highest levels. Modified drivers were intermediate on life satisfaction and general spirits. Indeed, this pattern of findings associated with driver status was obtained on all four well-being measures. Given that age, education level, and physical ailments were controlled, this suggests that as older adults lose mobility, well-being may be negatively affected.

Some significant moderators of the relationship between driver status and well-being were identified, notably for environmental resources (supportive living) and individual resources (public transit experience). Modified and regular drivers who live in supportive housing had the highest overall sense of life satisfaction ratings of any group, whereas former drivers who live in supportive housing (for this group, all lived in convalescent homes) had the lowest rating. Former drivers who had no prior transit experience also had a lower overall sense of life satisfaction than did any other group of drivers. These hypothesized moderators, however, are not independent. For the former drivers, for whom the moderating effects of these resource variables were obtained, supportive living status was significantly associated with prior transit experience ($X^2(1, N = 16)=6.35; p < .02$). Former drivers in supportive living arrangements also tend to be those without prior transit experience. Thus, it remains unresolved whether the effect is due to living arrangement or transit experience, or to some other correlated but unmeasured personal resource variable.
Several hypotheses could not be analyzed because of data limitations. In the case of the hypothesized moderator effects of individual demands, individual demands, defined by the perceived difficulty in accessing doctor's offices and grocery stores without a private automobile, were hypothesized to moderate the relationship between mobility loss and well-being and life satisfaction. Greater demands (more perceived difficulty in accessing these resources) were hypothesized to exacerbate the adverse effects of mobility loss. It was found, however, that all former drivers perceived difficulty in accessing doctor's offices and grocery stores and nearly all (93%) of modified drivers reported no perceived difficulty in accessing these resources. Because of these unequal cell sizes, the hypothesized moderated relationships were not pursued statistically. Nevertheless, this distribution is revealing.

The difference in perception between former drivers, who have actually experienced problems with accessing doctor's offices and grocery stores, and modified drivers, who are anticipating that accessing these resources will not be difficult is striking. Considering the distribution on the access measure, it may be that the concept of accessing resources was poorly operationalized. However, given that the regular drivers are distributed evenly on the perceived difficulty of access measure, it would appear that the measure does detect variations in perception. Thus, it may be that for the modified drivers, their nearly uniform assessment that accessing these resources will not be difficult, versus the entirely
uniform assessment by former drivers that accessing these resources is difficult. may reflect denial by the modified drivers of their impending situation.

The hypothesized moderator of perceived difficulty accessing resources may not act as such, but a more important process may have been uncovered. Other relevant variables concerning the possibility of denial on the part of modified drivers will still need to be examined. It is also possible that the perceptual categorization is overly exclusive, such that former drivers were too readily classified as being constrained in accessing resources. This suggests that interviews be conducted with former drivers about perceptions of difficulties in accessing resources. It may be that people living in suburbia will inevitably perceive difficulties in accessing resources when use of the private automobile is no longer an option. It is equally possible that modified drivers might be anticipating no difficulties through wishful thinking. This also suggests that interviews of modified drivers should also be conducted in terms of life circumstances they envision for themselves. What might these life circumstances be, and how realistic are they?

Carp (1988) has suggested that socioeconomic status might be instrumental in older adults' abilities to access transportation. She suggests that socioeconomic status, in particular, that of deprived subgroups, such a residents of minority-ethnic neighborhoods and older single women, be considered a moderator rather than a control variable when negative outcomes for the mobility of older adults. Though education level was used as a control variable in this study, perhaps
socioeconomic status could help to explain some of the difference between the former and modified driving status groups in terms of accessing resources.

The difference in perceptions about accessing medical and food supplies mirrors the findings of the exploratory analysis concerning feelings of constraint between the three groups of drivers. In this case, constraint was conceived in terms of how much participants felt that actual or future loss of the driver's license would affect or has affected their feelings of control, freedom, and independence. The difference between the modified drivers and the other two groups on all three constraint measures was significant. Again, the modified drivers did not believe that license loss would constrain them, yet the former drivers stated that it had indeed constrained them significantly. Regular drivers had the greatest feelings of constraint, perhaps because the possibility of the driver's license loss seems far off yet terribly upsetting if it were to happen suddenly. Again, it is possible that modified drivers could be in a state of denial or that they indeed may not be constrained, due to, for example, arrangements they have organized for themselves. Modified drivers did rate themselves lower on the self-efficacy measure of driving skill than did regular drivers, and this suggests that they may make accurate assessments of themselves and their situation. More follow-up is necessary to understand the differences between groups.

In addition to the differences in the type of coping among driving status groups shown in Table 12, a sampling of the answers regarding how one might
cope with or has coped with the loss of mobility is informative. Table 14 shows some anecdotal responses to the question regarding how one would cope with the loss of mobility. The differences in answers are quite startling. In the examples given, anticipating the loss of the license is viewed quite negatively by regular drivers. Textual anecdotes from this group suggest that alternatives to driving may not yet be salient to them. The modified driver examples suggest some acceptance of changing driver status through their active consideration of alternatives to driving. The modified drivers’ expectations about easy alternatives may not be realistic, however, and it is possible that some sort of denial is operating for them. Former drivers cite moderate levels of constraint following the loss. Table 14 is merely a partial picture, though, so conclusions should not be drawn from this small sampling of their responses.

Predictions were made that problem-focused coping would be related to higher levels of well-being for older adults who lose their driver’s license. The predicted associations between the use of problem-focused coping with better health and well-being outcomes reflect the prevailing views in the coping literature (e.g., Aldwin & Revenson, 1987; Gass & Chang, 1989; Hooker, Frazier, & Monahan, 1994). It is plausible, however, that emotion-focused coping is a more viable option for former drivers than problem-focused coping. Emotion-focused coping, which is also termed "secondary control," has been suggested to be adaptive for older adults when "primary control," or problem-focused coping, is not a viable alternative (Heckhausen & Schulz, 1995).
<table>
<thead>
<tr>
<th>Table 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textual Responses - How Would You Deal with the Loss of License?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Regular</strong></td>
</tr>
<tr>
<td>Laughed. &quot;I'd jump off a bridge.&quot; (70 year old woman)</td>
</tr>
<tr>
<td>&quot;I have no idea.&quot; (74 year old man)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Modified</strong></td>
</tr>
<tr>
<td>&quot;I think that it will be rough. I know it will come soon, but I think</td>
</tr>
<tr>
<td>that I would cope with it pretty well. I guess I would take cabs and</td>
</tr>
<tr>
<td>other people would have to do the driving.&quot; (76 year old woman)</td>
</tr>
<tr>
<td>&quot;Well, it would, if it happened, I would accept it. How I would get</td>
</tr>
<tr>
<td>around? It would depend on my wife. If not, I would hire transport...&quot;</td>
</tr>
<tr>
<td>(82 year old man)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Former</strong></td>
</tr>
<tr>
<td>&quot;...The traffic has gotten terrible, and I am just thankful now that</td>
</tr>
<tr>
<td>I don't have to drive.&quot; (90 year old woman)</td>
</tr>
<tr>
<td>&quot;It is not doing for me. It should be good, but it's not. I drove so</td>
</tr>
<tr>
<td>many miles for so long.&quot; (75 year old man)</td>
</tr>
</tbody>
</table>
For former drivers who may be less able to actively modify their environments than drivers, the use of emotion-focused coping may indeed be functional. Emotion-focused coping, while considered passive, can be adaptive in some situations, depending on the nature of the stress (Felton, Revenson, & Hinrichsen, 1984). It could be valuable to study the modified driver group over time to see if, as they lose the capacity to use problem-focused coping, emotion-focused coping strategies become more prominent in their coping repertoire.

**Methodological Limitations**

There were a number of limitations in the study’s method and procedures. These problems involved recruitment and sampling, the time interval between measurement, and the range of measures selected. These methodological limitations affected the capacity to test the study’s hypotheses.

A key problem was with respect to sampling. Because the original driver sample did not experience change of driver status from driver to former driver, a supplementary sample was pursued. The former driver population was extremely difficult to access, and the techniques used for recruiting the driver groups was not sufficient. In-person recruitment was then used to increase participation, and convalescent home residents were approached for convenience (though not in the best interest of the study). The former driver population as a whole is frail and leery of participation. Many former drivers have limiting physical impairments, and this may contribute to their hesitancy to take part in a lengthy and somewhat intrusive interview. Also, feelings of loss or incompetence may have affected
former drivers’ desire to participate in the study. There was also a larger issue of representativeness of the sample which was composed entirely of volunteers. This limits generalizability, though the sample was similar to older adults in the surrounding community.

In terms of design limitations, the sixteen week period between the two interviews limited detection of change from driver to former driver. The time period should have been lengthened, though this short time interval was initially meant to capture change as it was happening (in process) rather than capturing change retrospectively. Additional time points should have been included in the study design. Also, more sources of data would have assisted in limiting concerns regarding self-report measures. A future study of this kind might need to include reports from significant others and behavioral observations or assessments.

Regarding the study’s measures, more comprehensive measures of well-being and mobility should have been used. It was also not possible in the present project to administer an extensive battery of measures. Steiner et al. (1996) have suggested four short scales of psychosocial aspects of well-being that are reliable with older community-residing populations. The measures used by Steiner et al. included measures of depression, quality of life, sense of coherence, and social support. The current study measured depression, spirits, and life satisfaction. Future studies on this topic should consider the use of more powerful and parsimonious measures of well-being, like those described by Steiner et al.
Mobility could have been also examined more comprehensively, though not less intrusively. Mobility could have been studied by asking the participants to keep a travel diary for one week or more. With the proper training of participants, a travel diary could give more precise information about locations, stops, mileage, and routing used by older adults in suburban environments, rather than depending on memory of travels over a one-week period, as was done in this study. Additionally, older adults could be asked to track odometer readings at regular intervals.

In sum, problems with the sample, design, and measurement affected the ability to test hypotheses. The study was laid out to be longitudinal, yet the analyses were conducted cross-sectionally. Therefore, much of the data that were collected to capture change, such as the mobility measure (in terms of a possible shrinking life space as drivers become less independent) could not be examined in the analyses. It is also possible that the covariate of age was too stringent for this study. Many studies of older populations consider the recruitment process as a way to standardize age group, and age differences between various groups of older adults are ignored. In this case, however, because there were significant age differences between the driver status groups, age was used as a covariate in order to conduct stringent and conservative analyses.

Public Policy Implications

These limitations notwithstanding, the finding that experience with public transit seems to moderate the life satisfaction of former drivers is potentially very
interesting. If this finding can be replicated, if would suggest that older adults might become inoculated against decreases in life satisfaction by virtue of exposure to public transit. This might suggest that public agencies consider training older, and younger, adults on how to access and use public transit, if such transit options exist. It remains to be seen the degree of public transit exposure that might be necessary to ward off lower levels of life satisfaction of former drivers, but this should be examined more extensively in the future.

In addition, agencies that support older adult populations could educate at-risk populations through the production and distribution of informational booklets. Currently, the State of California Department of Motor Vehicles (DMV) produces a booklet for family and friends of older drivers (State of California DMV, 1992). The booklet was developed specifically to address the concerns that family and friends might have about an older driver. The booklet provides information on how to approach mature drivers about maintaining driver capabilities and driver health. It also includes tips about how to observe and assess driver behavior, and it offers suggestions for choosing safe driving routes. Finally, it gives limited information on alternative transportation, and it has information about how to refer an unsafe driver to the DMV. This booklet may be useful for older adults who have a support network in place. In some instances, however, the advice presented in the booklet may promote unwanted intrusions by family members or friends into an older person’s life. In addition to the booklet for friends and
family of older drivers, an additional booklet should be developed specifically for older drivers who may be considering giving up the driver's license.

This individual-level intervention could be approached more comprehensively. One potential model is currently being developed by the University of California Health Promotion Center. This center has a proactive approach to supporting behavior change through individual, community, organizational, and physical-environmental levels. The center has produced an information and resource kit (University of California, Irvine Health Promotion Center, 1997) that approaches workplace health promotion in this comprehensive, social ecological manner. The kit provides information for employers on accomplishing the goals of a healthy workplace through education, programming, and the identification of community resources. A similar information and resource kit could be developed for older drivers and for the agencies that support these older drivers.

**Directions for Future Research**

Though modest, one contribution of this project is to suggest a framework by which license loss can be studied prospectively. Earlier work by Cutler (1975) who pointed to the relationship between access to transportation and higher life satisfaction, and Carp (1971) sought to differentiate the retrospective experiences of former drivers from anticipation of the loss by current drivers. The present project expanded the main effects model of Cutler by expanding the category of outcome variables and by suggesting a number of moderating and mediating
variables. It also sought to further differentiate driving status by developing the notion of "modified driver." In an attempt to better describe the adaptational experience to the loss of the license, a prospective rather than retrospective design was planned, though this goal was not accomplished in the present study.

A larger, longitudinal study should be conducted using a randomized sample of community-residing elders. The potentially interesting group of modified drivers should be studied more closely in order to determine the objective and subjective variables that influence coping. Although physical health problems were not related to driver status in this sample, it is possible that health-related decrements may precipitate changes in driving behavior. The effect of health on driver status, however, may be detected in a larger sample studied over time. Anxiety and stress-related variables should also be incorporated in future research in order to better examine transitional states. Modified drivers may begin to feel uncomfortable when facing certain challenges. What tells them they need to make an adjustment? Is adjustment done largely through self-monitoring or input from significant others? Future work is needed to better understand this process.

Along with the individual- and environmental-level variables examined in the present study, social variables should also be investigated for the extent to which they might moderate the relationship between the loss of the driver's license and well-being. Positive aspects of older adults' social relationships, for example, the extent of an older adult's social network and the ease in accessing such a
network, may greatly influence an older adult’s ability to continue to be mobile despite the loss of the driver’s license.

On the other hand, potential negative aspects of social relationships could influence the adjustment of older adults who face the loss of the driver’s license. Rook (1990b) cites a growing body of evidence that negative or problematic social interactions may, in fact, have more impact on an older person’s well-being than positive social interactions. She also suggests that negative outcomes of social control, or control attempts exerted by network members, should receive more attention in the future (Rook, 1990a).

One possible avenue to examine the influence of negative social interactions is to investigate the extent to which social control is exerted by adult children over their parents’ driving decisions. A retrospective examination of how older adults make the decision to stop driving has been conducted (Persson, 1993), but the communication process between adult child and aging parent over the driving privilege has not received attention in the scientific literature.

In addition to incorporating social variables into an expanded longitudinal study, cognitive mapping should again be considered in future studies of mobility status and mobility loss among older adults. Understanding how life space shrinks, in conjunction with its effects on well-being, should be pursued, despite the limitations of examining this shrinkage in the present study. There is a dearth of information about how older adults visualize their environments and how the visualization affects self-concept, health, and well-being.
Finally, consideration should be given to how technological advances in transportation may affect older populations. Sandeen (1993) and Stamatiadis (1994) have suggested that transportation technology, such as real-time dissemination of information to drivers and automated roadways, will greatly affect the travel behavior of older adults. As older adults experience declines in vision and reaction time, facilitative interventions may help keep some adults driving safely much longer than they are able to now. Stamatiadis (1994) argues, on the other hand, that some interventions, such as in-vehicle navigation devices might actually hinder the mobility of older adults due to the possibility of cognitive overload. Research should continue as the technology develops.

In addition, Sandeen (1993) has argued communication technologies may make some vehicle trips obsolete and that studying how older adults become connected to their external resources via communication technology should be studied. In the future, the ability to shop, visit the doctor, and communicate with family and friends via the internet may ease some of the constraints currently imposed by mobility decline and the loss of the driver’s license among older adults.
References


Appendix A

Stressful Nature of License Loss for Older Adults


Is the loss of the license a stressful life event? Research on the level of perceived and realized stress by elders facing mobility loss has received minimal attention by social scientists. A modest project to better place license loss among other stressful life events facing older adults, such as retirement, bereavement, and residential relocation, was undertaken in addition to the larger study reported here.

Earlier studies concerning stressful life events have consistently found that death of the spouse is reported to be the most stressful event among a list of stressful events (Amster and Krauss, 1974; Holmes and Rahe, 1967). These studies have used experts to determine the base ranking for events, and not allowed for self-ratings by respondents to determine the level of stress that might have been experienced or is anticipated by them.

Method

Participants. Participants in this project were clients of an Orange County, California senior center. Participants were not paid, and females (n=24) comprised 86 percent of the participants. They ranged in age from 69 to 94 years old. Thirty-six percent of the participants were married and 43 percent were
widowed, while the balance were divorced or single. Participants were similar to the elderly population in Orange County; they were all Caucasian, varied in level of education attainment, though a number of them had attended at least some college (n=21) and the modal household incomes were between $20,000 and $35,000 and $35,000 and $50,000 per year (n=6 in both cases).

**Procedure.** A table was set up on three days in the late morning at the senior center. Older adults volunteered to answer questions regarding life experiences and a number of demographic and other background questions. The Life Experiences Questionnaire was administered first. After administering this questionnaire, the background questionnaire, which included questions about health, well-being, and driving loss, was administered. In all but a few occasions, the participants filled out the questionnaires on their own. In certain circumstances, assistance with reading the questions was provided by the researchers.

**Life Experiences Questionnaire.** The Life Experiences Questionnaire (see Appendix K) was developed by three researchers. These researchers independently selected 28 life event items from existing scales (Amster and Krauss, 1974; Holmes and Rahe, 1967; Dohrenwend et al., 1978.; Mensh, 1983) pertaining to contemporary life as an older adult. Older adults were asked to rank how stressful facing each of the experiences would be on a scale of 1 - 5, where one is "very stressful", three is "somewhat stressful", and five is "not at all
stressful". In addition to each ranking, participants were asked to note whether or not they had experienced each event.

**Results**

Earlier studies concerning stressful life events have consistently found that the death of the spouse is reported to be the most stressful among a list of stressful events (Amster and Krauss, 1974; Holmes and Rahe, 1967). When using the five-point scaling method, developed for this study, our participants ranked the death of the spouse as the sixth most stressful event (Table 1). The most stressful event for our sample was being robbed or assaulted. Though these events were less frequently experienced than the death of the spouse.

As compared to a 1974 report (Amster and Krauss) on the Geriatric Social Readjustment Rating Scale, where loss of the driver license was ranked by experts to be 26 out of a 35-item scale, our participants ranked the loss of the driver's license to be fourth out of 28 items (Table A1).

**Discussion**

Research in the stressful life event area has often been conducted through the generation of stressful life events by experts. These lists are then ranked by the experts according to the degree that these life events might lead to readjustment or life change for the subject. Our research used older adults as the experts to rate the level of stress each experience would cause them personally. This difference in rating procedures might underlie the difference in rankings
<table>
<thead>
<tr>
<th>Rank</th>
<th>Life Event</th>
<th>Mean</th>
<th>SD</th>
<th>Percent experiencing event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Robbed/assaulted</td>
<td>1.16</td>
<td>.47</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>Loss of independence</td>
<td>1.24</td>
<td>.60</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Loss of home through fire; flood or other disaster</td>
<td>1.28</td>
<td>.54</td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>Losing driver’s license</td>
<td>1.33</td>
<td>.96</td>
<td>25</td>
</tr>
<tr>
<td>5.</td>
<td>Moved into nursing home</td>
<td>1.33</td>
<td>.76</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Death of spouse</td>
<td>1.46</td>
<td>.83</td>
<td>43</td>
</tr>
<tr>
<td>7.</td>
<td>Marital separation</td>
<td>1.52</td>
<td>.96</td>
<td>33</td>
</tr>
<tr>
<td>8.</td>
<td>Unable to get treatment for an illness or injury</td>
<td>1.58</td>
<td>.95</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Divorce</td>
<td>1.64</td>
<td>.99</td>
<td>21</td>
</tr>
<tr>
<td>10.</td>
<td>Death of a close family member</td>
<td>1.65</td>
<td>1.06</td>
<td>82</td>
</tr>
<tr>
<td>11.</td>
<td>Argument with children</td>
<td>1.92</td>
<td>1.02</td>
<td>52</td>
</tr>
<tr>
<td>12.</td>
<td>Major personal injury</td>
<td>2.00</td>
<td>.92</td>
<td>50</td>
</tr>
<tr>
<td>13.</td>
<td>Eyesight failing</td>
<td>2.08</td>
<td>1.13</td>
<td>52</td>
</tr>
<tr>
<td>14.</td>
<td>Knew someone who attempted or committed suicide</td>
<td>2.11</td>
<td>1.09</td>
<td>26</td>
</tr>
<tr>
<td>15.</td>
<td>Argument with spouse</td>
<td>2.12</td>
<td>1.20</td>
<td>73</td>
</tr>
<tr>
<td>16.</td>
<td>Painful arthritis</td>
<td>2.12</td>
<td>1.05</td>
<td>19</td>
</tr>
<tr>
<td>Rank</td>
<td>Life Event</td>
<td>Mean</td>
<td>SD</td>
<td>Percent experiencing event</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------</td>
<td>------</td>
<td>-----</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>17.</td>
<td>Hearing failing</td>
<td>2.23</td>
<td>1.24</td>
<td>33</td>
</tr>
<tr>
<td>18.</td>
<td>Child got divorced</td>
<td>2.27</td>
<td>1.19</td>
<td>68</td>
</tr>
<tr>
<td>19.</td>
<td>Took a cut in income</td>
<td>2.48</td>
<td>1.16</td>
<td>56</td>
</tr>
<tr>
<td>20.</td>
<td>Physical health decline</td>
<td>2.48</td>
<td>1.16</td>
<td>54</td>
</tr>
<tr>
<td>21.</td>
<td>Death of a close friend</td>
<td>2.50</td>
<td>.92</td>
<td>82</td>
</tr>
<tr>
<td>22.</td>
<td>Lost pet</td>
<td>2.56</td>
<td>1.31</td>
<td>59</td>
</tr>
<tr>
<td>23.</td>
<td>Major change in usual type and amount of recreational activities</td>
<td>2.96</td>
<td>1.09</td>
<td>44</td>
</tr>
<tr>
<td>24.</td>
<td>A decrease in the frequency of family get-togethers</td>
<td>3.07</td>
<td>.83</td>
<td>70</td>
</tr>
<tr>
<td>25.</td>
<td>Feeling of slowing down</td>
<td>3.11</td>
<td>1.19</td>
<td>74</td>
</tr>
<tr>
<td>26.</td>
<td>Decreased social activities</td>
<td>3.15</td>
<td>1.10</td>
<td>52</td>
</tr>
<tr>
<td>27.</td>
<td>Stopped going to church or synagogue</td>
<td>3.44</td>
<td>1.37</td>
<td>41</td>
</tr>
<tr>
<td>28.</td>
<td>Retirement</td>
<td>4.21</td>
<td>1.26</td>
<td>79</td>
</tr>
</tbody>
</table>
between our subjects and those presented, for example, by Amster and Krauss (1974).

Using the private automobile for transportation is generally associated with increased independence and freedom in the lives of older adults. Therefore, losing the driver license might be extremely stressful to older adults. The suggestion by researchers of earlier studies that the loss of the driver license might not be considered very stressful to elders could be due to a generational perspective related to the necessity of the private automobile as many of these studies were conducted in the 1970s. The extent to which older adults rely on their car as the main mode of transportation has changed since that time. Thus, our participants could be reflecting the reality that older adults have come to rely on the private automobile a great deal and that giving up the license could be quite stressful.

In understanding our participants’ high ranking of the stress related to being robbed or assaulted, it might be postulated that fear contributed to their ranking. The most stressful life event ranking was on an item that few had experienced. Orange County, California, is reputed to be safe, and it is possible that the wider societal concerns of personal violence affected our sample’s rankings. However, an alternative explanation could well be that people are not always able to make accurate judgments about potentially stressful events.
References


Appendix B

Advertisement text

ATTENTION AUTOMOBILE DRIVERS AGED 70 AND OLDER:

Researchers in the School of Social Ecology at the University of California, Irvine, are conducting a study involving personal needs and experiences of older drivers. Little is known about this very important topic, and we are seeking your help with this study.

If you are over 70, currently a driver, and have been driving in California for at least 5 years, you are eligible to be part of this telephone survey study. The total time commitment is only 1 1/2 hours over a 6 month period, and participants who complete the study will be entered into a free drawing for several prizes.

Please contact Beverly A. Sandeen, study director, at (714) 824-7046, if you are eligible. We want to make this study representative of older drivers, so all participants will be greatly appreciated.

###
Appendix C

Screening Questionnaire

"Hello, thanks for your interest in the Transportation and Older Adults research project. I’d like to ask you a few questions, if I might.

First, your name is ______________________________? (If necessary, check spelling.)

What is your address?

________________________________________________________

street address

________________________________________________________

city

ZIP code

And, your telephone number?

________________________________________________________

What is the date of your birth? ________________ (Must be 70 years and older)

day/month/year

How long have you been living in CA? ________________ (Must be more than 5 yrs)

years/months

Are you a licensed driver? Y/N (Must state that they are a licensed driver)

How long have you been driving in CA? ________________ (Must be more than 5 yrs)

(If person does not qualify, thank them for their interest...we will send a thank you to them).

What is your marital status? (Circle one): Married Single Divorced Widowed Partnered

With whom do you reside? (Circle and note number where applicable):

Spouse Child/children ____ Grandchild/children ____

# #

Sibling/s ____ In-laws ____ Other relative (describe)_______

# #

Friend/s ____ Other (describe)_______ ___

# #
(If live with others, ask...) Do any of those with whom you live drive? Y/N

(If yes, ask...) Are you the primary driver of the household? Y/N

(If no AND person resides in a multiple person household, ask...) Who is the primary driver? ____________________

In order to make this survey representative of Orange County residents, we need to ask you just a few more questions.

First, what is your ethnicity or race?

(Circle response or write verbatim answer)

White/Caucasian
Asian/Asian-American

European-American

Latino/Hispanic
Black/African-American

Other: ____________________ (specify)

Second, what is your educational level?

(Circle response or write verbatim answer)

Primary school
Some high school
Graduated high school

Vocational training (post HS)
Some college
Graduated college (BA/BS)

Some graduate or professional school
Completed graduate or professional school

How would you describe your total annual household income?

(Read categories. if necessary, and circle)

Less than $20,000
Between $20,000 - 30,000
Between $30,000 - 40,000

Between $40,000 - 50,000
Between $50,000 - 60,000

Between $60,000 - 75,000
More than $75,000
How did you find out about this study? (Circle one and write verbatim answer, if different):

<table>
<thead>
<tr>
<th>From flyer</th>
<th>From newspaper advertisement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posted where?</td>
<td>Which paper?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>From a relative</th>
<th>From a friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whom?</td>
<td>Whom?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>From a social/religious</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which one?</td>
<td>Whom?</td>
</tr>
</tbody>
</table>
Appendix D

Consent to act as a human research subject

This study is exempt from review by the Human Subjects Review Committee. The study examines personal needs and experiences of older drivers. Little is known about this important topic.

You are eligible to participate in this telephone survey because you are over 70, are currently a driver, and have been driving in California for at least 5 years. The total time commitment is about 1 1/2 hours over a 6 month period. Participants who complete the study will be entered into a free drawing for several prizes.

Participation in research is entirely voluntary. You may refuse to participate or withdraw from participation at any time without jeopardy to future medical care, education or employment status or other entitlement. The investigator may withdraw you from participation at her professional discretion.

If, during the course of this study, significant new information which has been developed during the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigator.

Any information derived from this research project which personally identifies you will not be voluntarily released or disclosed without your separate consent, except as specifically required by law.

If at any time you have questions regarding the research or your participation in it, you should contact the investigator or her assistants who must answer your questions.

If, at any time, you have comments regarding the conduct of this research or if you wish to discuss your rights as a research subject, you may contact Human Research Administration at 714-824-6068.

Are you willing to participate in this study? Yes _____ No _____

Subject name ____________________________________________

Interviewer signature _____________ Date _______________

114
Appendix E

Screening Questionnaire - Former Drivers 1/30/96

"Hello, thanks for your interest in the Transportation and Older Adults research project. I'd like to ask you a few questions, if I might.

First, your name is ___________________________? (If necessary, check spelling.)

What is your address? ____________________________

_________________________ street address

_________________________ city

ZIP code

And, your telephone number?

______________________________

What is the date of your birth? ____________________________ (Must be 70 years and older) day/month/year

How long have you been living in CA? _______________ (Must be more than 5 yrs) years/months

Are you currently licensed to drive? Y/N

(If yes, ask…)

Are you driving currently? Y/N

(If yes, thank them for their interest…we will send a thank you to them).

Approximately how long has it been since you last drove? _______________ years/months

When you did drive, about how many years would you say you drove in California? _____ years/months

(If person was not a driver in California for at least five years, thank them, etc.)
What is your marital status? (Circle one): Married Single Divorced Widowed Partnered

With whom do you reside? (Circle and note number where applicable):

Spouse ______ Child/children ______ Grandchild/children ______

Sibling/s ______ In-laws ______ Other relative (describe) ______

Friend/s ______ Other (describe) ______

(If live with others. ask...) Do any of those with whom you live drive? Y/N
(If yes. ask...) Who is the primary driver of the household? __________

When you were able to drive. were you the primary driver of the household? Y/N

(If no. ask...) Who was the primary driver at that time? __________

In order to make this survey representative of Orange County residents. we need to ask you just a few more questions.

First. what is your ethnicity or race?
(Circle response or write verbatim answer)

White/Caucasian/ Asian/Asian-American
European-American

Latino/Hispanic Black/African-American

Other: ___________________________ (specify)

Second. what is your educational level?
(Circle response or write verbatim answer)

Primary school Some high school Graduated high school

Vocational training (post HS) Some college Graduated college (BA/BS)

Some graduate or Completed graduate professional school or professional school
How would you describe your total annual household income?
(Read categories, if necessary, and circle)

Less than $20,000  Between $20,000 - 30,000  Between $30,000 - 40,000

Between $40,000 - 50,000  Between $50,000 - 60,000

Between $60,000 - 75,000  More than $75,000

How did you find out about this study?  (Circle one and write verbatim answer, if different):

From flyer  From newspaper advertisement  From a relative
Posted where?  _____  Which paper?  ______________  Whom?  _____

From a friend  From a social/religious group  Other
Whom?  ______________  Which one?  ______________  _____
Appendix F

Consent to act as a human research subject - Former Drivers

This study is exempt from review by the Human Subjects Review Committee. The study examines personal needs and experiences of former drivers. Little is known about this important topic.

You are eligible to participate in this telephone survey because you are over 70, and were a driver in California for at least 5 years. The total time commitment is about 1 hour. Participants who complete the study will be entered into a free drawing for several prizes.

Participation in research is entirely voluntary. You may refuse to participate or withdraw from participation at any time without jeopardy to future medical care, education or employment status or other entitlement. The investigator may withdraw you from participation at her professional discretion.

If, during the course of this study, significant new information which has been developed during the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigator.

Any information derived from this research project which personally identifies you will not be voluntarily released or disclosed without your separate consent, except as specifically required by law.

If at any time you have questions regarding the research or your participation in it, you should contact the investigator or her assistants who must answer your questions.

If, at any time, you have comments regarding the conduct of this research or if you wish to discuss your rights as a research subject, you may contact Human Research Administration at 714-824-6068.

Are you willing to participate in this study? Yes ______ No ______

Subject name ____________________________

Interviewer signature _______________ Date ____________
Appendix G

Introductory Packet

<date>

<address>

Dear <name>:

Thank you for volunteering to participate in the study on transportation and older adults. Your willingness to assist in this project is appreciated very much.

Your telephone interview has been scheduled for <date and time>. Included with this letter are 3 papers that you will need to have with you at the telephone. They are: (1) Yellow Sheet; (2) Blue Sheet; and (3) Directions for Drawing. Please have these papers with you at the telephone when we call you. Please try to keep your phone line free near the time of the interview. Also, if you have call waiting, we would appreciate it if you would disengage it during the course of the interview. As you may recall, the interview will last between 30 and 40 minutes, so please plan your day accordingly.

Also included with this letter is a blank paper for your drawing. We will review the instructions for the drawing with you at the conclusion of your interview. The enclosed postage paid envelope is for you to use to return your completed drawing. Your participation is valuable to us. If you have any concerns, comments, or questions before or after the interview, please contact me at (714) 824-7046.

Sincerely,

Beverly A. Sandeen
Director
Transportation and Older Adults Project

enclosures:

FOR TELEPHONE INTERVIEW:
Yellow Sheet
Blue Sheet
Directions for Drawing

TO RETURN:
Completed Drawing (on Blank Sheet)
Postage Paid Envelope
**YELLOW SHEET**

<table>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>6</th>
<th>7</th>
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<td>low</td>
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<th>4</th>
<th>5</th>
<th>6</th>
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</tr>
</thead>
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<td>not</td>
<td></td>
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</tr>
<tr>
<td>happy</td>
<td>happy</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very</td>
<td>not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>satisfied</td>
<td>satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BLUE SHEET

1 = "RARELY OR NONE OF THE TIME"
   (LESS THAN 1 DAY)

2 = "SOME OR A LITTLE OF THE TIME"
   (1 - 2 DAYS)

3 = "OCCASIONALLY OR A MODERATE AMOUNT
   OF THE TIME"
   (3 - 4 DAYS)

4 = "MOST OR ALL OF THE TIME"
   (5 - 7 DAYS)
DIRECTIONS FOR DRAWING

Using the blank paper provided please draw a pictorial map of the places you visit in a typical week.

Your map does not need to be an exact replica of the area as is a conventional road map. It need only be a sketch of how you view your travels.

There is no time limit, and it should be possible to complete your map in less than 15 minutes. You aren’t expected to have an artist’s talent, and there are no wrong or right ways to draw your map. However, please label all buildings, main streets, and landmarks in your sketch which may not be easily recognizable.
Appendix H

First telephone interview

11/1/95

Date: ________________ Time interview began: ________________
Interviewer: __________ Subject number: ________________

"Hello, my name is ________, and I want to thank you for agreeing to answer some questions about being an older adult in today's society. Did you receive the information packet we sent to you?"

If no, reschedule appointment: ________________________________. If yes, "That's great. Do you have the packet in front of you at this time?"

If no, "Would you please bring it to the telephone before we begin the interview? Thank you."
If yes, "Well, let's begin."

"The interview should take less than one hour. If at any time you do not feel like answering a particular question, you should feel comfortable to tell me that. Also, if you don't understand a question, I will do my best to try to help you understand it. Finally, there are no right or wrong answers, so please answer each one as honestly as you can. Your name will not be associated with your answers so you may remain anonymous. Do you have any questions before we begin?"

(Please record question that respondents ask, and, also, please note any areas that the respondents are unclear about in the introduction.)

__________________________________________________________________________

A.M.

RECORD BEGINNING TIME: __ : __ P.M.

"All right, let's begin."

"According to the information you shared with us, you live in ____________ (city). How long have you lived there?" ______ years ______ months
"What type of residence do you live in? For example, do you live in an apartment?" (Probe for category.)

<table>
<thead>
<tr>
<th></th>
<th>Yes ___</th>
<th>No ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detached home?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condominium?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile home?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assisted living facility?</td>
<td>Yes ___</td>
<td>No ___</td>
</tr>
<tr>
<td>Other?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

("How many people, including yourself, reside in your household?" _____)

"And, where did you live before you lived in ___________ (city)?"

______________________________

"How long did you live there?" _____ years _____ months

"Have you lived in any other places?" _____ Yes _____ No

If yes, "Could you tell me where you have lived and for how long you lived there?"

______________________________ place _____ years _____ months

______________________________ place _____ years _____ months

______________________________ place _____ years _____ months

______________________________ place _____ years _____ months

______________________________ place _____ years _____ months

"Now I'd like to ask you some questions about transportation. Looking back at all of the transportation experiences you have had over your lifetime, how have you gotten around?"

(If respondent hesitates, suggest "For example, did you take the bus when you were younger, and, then, drove when you were older?" Try to get specific and detailed information about all modes used)

Interviewer: WRITE verbatim answers and CIRCLE categories, below. with notations:
Verbatim answer:

**Circle all answers given, with notations:**

<table>
<thead>
<tr>
<th>Drove myself</th>
<th>Rode with friends/ acquaintances/ relatives as passengers</th>
<th>Used private transit</th>
<th>Used public transit</th>
<th>Walked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove another person or other people around</td>
<td>Bicycled</td>
<td>Used a taxi</td>
<td>Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

"Let's consider all of the transportation options you have available to you now."

"We've already established that you are a driver. So, regardless of your personal preferences, are you currently able to ________?" *(Repeat stem, and if respondent answers "No" then probe about availability of the option versus ability to utilize the option.)*

...use private transit (e.g., Super Shuttle)? Yes ___ No ___

...use public transit (e.g., OCTD bus service)? Yes ___ No ___

...use a taxi Yes ___ No ___

...walk Yes ___ No ___

...bicycle Yes ___ No ___

...drive another person or other people around Yes ___ No ___

...ride with friends/acquaintances/relatives as passenger in their car? Yes ___ No ___

other? (Specify) ___________________________ Yes ___ No ___

"Now, thinking about what you do right now, could you please describe your usual mode of travel to me. That is, what type of transportation do you use most often?"

(If respondent hesitates, suggest "For example, most of the time do you bicycle to get where you want to go?")
Interviewer: WRITE verbatim answer and circle ONE category, below:

Verbatim answer:

Circle ONE:

<table>
<thead>
<tr>
<th>Drive myself</th>
<th>Ride with friends/ acquaintances/ relatives as passengers</th>
<th>Use private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
</table>
| Drive another person or other people around | Bicycle | Use a taxi | Other (Specify) |}

"What places do you visit in an average week when you ______(use the mode they have just described above)?"

<table>
<thead>
<tr>
<th>Place 1</th>
<th>Place 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place 2</td>
<td>Place 7</td>
</tr>
<tr>
<td>Place 3</td>
<td>Place 8</td>
</tr>
<tr>
<td>Place 4</td>
<td>Place 9</td>
</tr>
<tr>
<td>Place 5</td>
<td>Place 10</td>
</tr>
</tbody>
</table>

Others?

"Do you ever travel to a few of these places within one trip by ______(use the mode they have just described)? For example do you go to ___________ and ___________ (select items, for example, the grocery store and the dry cleaners, where this might be possible) during the same trip?" Yes ____ No ____

If yes, "Could you describe to me the kind of combinations of trips you typically take within a week?"

VERBATIM ANSWER:

"I'm going to ask you a series of questions about each of the places where you travel. It takes a bit of time to answer these questions, so please don't feel rushed. Your accuracy is important to me."

"Now, thinking about going to ____ (place 1), about how many times do you go there within an average week?" ______ times
"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_______ hours ______ minutes


"Now, thinking about going to _____ (place 2), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_______ hours ______ minutes


"Now, thinking about going to _____ (place 3), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_______ hours ______ minutes


"Now, thinking about going to _____ (place 4), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_______ hours ______ minutes


"Now, thinking about going to _____ (place 5), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_______ hours ______ minutes


"Now, thinking about going to _____ (place 6), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" _________ miles
"And about how long does it take for you to get there from your home?"

_________ hours ________ minutes

************************************************

"Now, thinking about going to _____ (place 7), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_________ hours ________ minutes

************************************************

"Now, thinking about going to _____ (place 8), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_________ hours ________ minutes

************************************************

"Now, thinking about going to _____ (place 9), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_________ hours ________ minutes

************************************************

"Now, thinking about going to _____ (place 10), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _________ miles

"And about how long does it take for you to get there from your home?"

_________ hours ________ minutes

************************************************

Are there other places you travel?

-----------------------------------------------------------------

How do you typically travel to get there?

-----------------------------------------------------------------

Are there other ways you travel to get there?

-----------------------------------------------------------------
"What type of transportation do you use second most often?" (Interviewer, please circle one. Probe if respondent hesitates. Write verbatim answer, then circle one category, below.)

Verbatim answer:

Circle ONE:

Drive myself  Ride with friends/ Use a private transit  Use public transit  Walk
acquaintances/
relatives as passengers

Drive another person or other people around  Bicycle  Use a taxi  Other (Specify)

(Pause briefly)

"Please tell me what you think your usual mode of travel will be for the next four months. That is, what type of transportation do you think that you will use most often in the next four months?" (Interviewer, write verbatim answer, then circle one category, below.)

Verbatim answer:

Drive myself  Ride with friends/ Use a private transit  Use public transit  Walk
acquaintances/
relatives as passengers

Drive another person or other people around  Bicycle  Use a taxi  Other

"Thinking about the trips you take during a typical week, are there places you wish to go, but feel you cannot?"

Yes ___  No ___
If yes, "What places?"

VERBATIM:

Continue, if answered yes. "Why do you feel you can't go there?"

VERBATIM:

**********Block 1 - Note answers in first section for use in Block 2**********

"People sometimes find that they need to modify when they drive or where they drive as they go through changes in their life circumstances. I'd like to find out if you have modified your driving. Please tell me how often you do any of these things:"

(NOTE: IF RESPONDENT ANSWERS "ALL" OR "MOST" OF TIME, THEN MARK QUESTIONS RELATING TO THIS ON FOLLOWING PAGES PER INTERVIEW TRAINING.)

<table>
<thead>
<tr>
<th>Avoid driving on freeways</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid nighttime driving</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>Some of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>Drive only with others</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>Some of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>Drive more slowly</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>Some of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>Avoid busy streets</td>
<td>All of the time</td>
<td>Most of the time</td>
<td>Some of the time</td>
<td>None of the time</td>
</tr>
</tbody>
</table>
NOTE: If answered "All of the time" or "Most of the time" to any of the above items, ask:
(Otherwise, skip to next block)

"Has the modification of your driving ___?"

Made getting together with others more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made buying groceries more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made visiting the doctor more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made visiting family and friends more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made dealing with emergencies more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made taking fun outings, such as going out to eat or going to the movies, more difficult?
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___

If answered "All of the time" or "Most of the time" (as specified above), also ask:

"How do you think changes in your driving habits have reduced your sense of independence?"
   Very much ___ Somewhat ___ A little bit ___ Not at all ___

"How do you think changes in your driving habits have reduced your sense of freedom?"
   Very much ___ Somewhat ___ A little bit ___ Not at all ___

"How do you think changes in your driving habits have reduced your feelings of control over your activities?"
   Very much ___ Somewhat ___ A little bit ___ Not at all ___

******Block 2******

"Now, I’d like you to imagine what you might be doing over the next four months. Think about the period of time between now and ______ (the month four months from now). (Long pause). Now, thinking about the next four months (pause), how likely is it that you will make any (further) modifications in these driving habits:

(Note: DO NOT REPEAT THE PARTICULAR ANSWER OPTION WHEN RESPONDENT HAS ALREADY NOTED THAT THEY HAVE ALREADY MODIFIED THAT PARTICULAR OPTION "ALL OF THE TIME")
<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Very Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive on freeways less often</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid freeways altogether</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive less during nighttime</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive only with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive more slowly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid busy streets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"How would driving less change your lifestyle? Would it ______?"

(Note: Do not repeat questions when a respondent has already modified their driving "All of the time" or "Most of the time".)

Make getting together with others more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Make buying groceries more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Make visiting the doctor more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Make visiting family and friends more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Make handling emergencies more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Make taking fun outings, such as going out to eat or going to the movies, more difficult?

<table>
<thead>
<tr>
<th></th>
<th>Very Likely</th>
<th>Somewhat Likely</th>
<th>Unlikely</th>
<th>Not at all Likely</th>
</tr>
</thead>
</table>

Would anything else change?

Yes ___ No ___

If yes, what might that be?

Verbatim:

(Note: Do not ask the next three questions to respondents who have already modified their driving "All of the time" or "Most of the time".)

"How do you think changes in your driving habits might affect your sense of independence?"

Very much Somewhat A little bit Not at all
"How do you think changes in your driving habits might affect your sense of freedom?"

Very much Somewhat A little bit Not at all

"How do you think changes in your driving habits might affect your feelings of control over your activities?"

Very much Somewhat A little bit Not at all

**********Block 3 - All respondents**********

"For some people, it would be very problematic to change their lifestyle because they need to modify their driving practices; for other people, this would not be a problem. Please tell me how problematic it would be for you if your lifestyle changed in each of the following areas because you needed to change your driving practices."

If you had to socialize less?

Very problematic Somewhat problematic Not at all problematic

If you had to take fewer fun outings?

Very problematic Somewhat problematic Not at all problematic

If you had to see family and friends less often?

Very problematic Somewhat problematic Not at all problematic

If you were unable to complete needed errands?

Very problematic Somewhat problematic Not at all problematic

"Now I will read a series of statements to you. After I read each one, please tell me if you agree or disagree with it."

"As I grow older, things seem better than I thought they would be."

Agree Disagree

"I have gotten more of the breaks in life than most of the people I know."

Agree Disagree

"This is the dreariest time of my life."

Agree Disagree

"I am just as happy as when I was younger."

Agree Disagree

"My life could be happier than it is now."

Agree Disagree

"These are the best years of my life."

Agree Disagree

"Most of the things I do are boring or monotonous."

Agree Disagree

"I expect some interesting and pleasant things to happen to me in the future."

Agree Disagree

"The things I do are as interesting to me as they ever were."

Agree Disagree
"I feel old and somewhat tired."
Agree _____ Disagree _____

"As I look back on my life, I am fairly well satisfied."
Agree _____ Disagree _____

"I would not change my past life even if I could."
Agree _____ Disagree _____

"Compared to other people my age, I make a good appearance."
Agree _____ Disagree _____

"In spite of what some people say, the lot of the average person is getting worse, not better."
Agree _____ Disagree _____

"When I think back over my life, I didn't get most of the important things I wanted."
Agree _____ Disagree _____

"Compared to other people, I get down in the dumps too often."
Agree _____ Disagree _____

"I have made plans for the things I'll be doing a month or a year from now."
Agree _____ Disagree _____

"I've gotten pretty much what I expected out of life."
Agree _____ Disagree _____

"Now, I am going to ask you a series of questions about how you've been feeling lately. Please follow along on the yellow sheet and answer each question after I read it to you with the number that best indicates how you've been feeling. Do you have the yellow sheet in front of you? (Pause) All right. Let's begin."

"In general, how has your health been lately?"
1 2 3 4 5 6 7
excellent poor

"In general, how have your spirits been lately?"
1 2 3 4 5 6 7
I've been in very good my spirits have been very low spirits

"In general, how energetic have you felt lately?"
1 2 3 4 5 6 7
always full never have of energy any energy
"In general, how happy would you say you have been lately?"

1 2 3 4 5 6 7
extremely happy
not at all happy

"In general, how satisfied are you with your life at this point in time?"

1 2 3 4 5 6 7
very satisfied
not at all satisfied

"In general, how satisfied are you with your friends and family at this point in time?"

1 2 3 4 5 6 7
very satisfied
not at all satisfied

"In general, how satisfied are you with your home at this point in time?"

1 2 3 4 5 6 7
very satisfied
not at all satisfied

"In general, how satisfied are you with your community at this point in time?"

1 2 3 4 5 6 7
very satisfied
not at all satisfied

"In general, how satisfied are you with your access to transportation at this point in time?"

1 2 3 4 5 6 7
very satisfied
not at all satisfied

"I am now going to read you a list of the ways you might have felt recently. Please tell me how often you have felt this way during the past week by using the rating scale provided on the blue sheet we sent to you. Do you have the blue sheet? One means rarely or none of the time (less than 1 day); two means some or a little of the time (1-2 days); three means occasionally or a moderate amount of the time (3-4 days); and 4 means most or all of the time (5-7 days). Okay? All right, let's begin."
I was bothered by the things that usually don’t bother me.
I did not feel like eating; my appetite was poor.
I felt that I could not shake off the blues even with help from my family or friends.
I felt that I was just as good as other people.
I had trouble keeping my mind on what I was doing.
I felt depressed.
I felt that everything I did was an effort.
I felt hopeful about the future.
I thought my life had been a failure.
I felt fearful.
My sleep was restless.
I was happy.
I talked less than usual.
I felt lonely.
People were unfriendly.
I enjoyed life.
I had crying spells.
I felt sad.
I felt that people dislike me.
I could not get going.

"Thank you. Now, I would like to ask you some health-related questions. First, there are two activities that people sometimes have trouble with: trouble climbing stairs and trouble getting outdoors. Do you have trouble doing either of these things?"

Yes ___ No ___

(If respondent answers "Yes" to this question, probe and ask, "Which of these things do you have trouble doing? How long have you had this trouble? Less than 6 months or more than 6 months?")

Note activity and length of trouble(s):

"Have you had to cut down or stop any activity you used to do because of some illness or injury? For example, you have had to take it easy, or cut out some sport, or you find you can’t spend as many hours gardening as you used to?"

Yes ___ No ___

(If respondent answers "Yes" to this question, probe and ask, "How long have you had to cut down or stop this activity? Less than 6 months or more than 6 months?")
Note length of trouble(s):

"I am now going to read to you a list of medical conditions that usually last for some time. Have you had any of these conditions during the past 12 months?"

(Interviewer circle Y for "yes" or N for "no".)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Blood Pressure?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Heart Trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Stroke?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic bronchitis?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Asthma?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Arthritis or rheumatism?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Epilepsy?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Diabetes?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Cancer?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Tuberculosis?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Stomach ulcer?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic gallbladder trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic liver trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Hernia?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

"I am going to read a list of physical impairments. Do you have any of these?"

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Y</th>
<th>N</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble with hearing?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with a hearing aid?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
<tr>
<td>Trouble with seeing?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with glasses?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
<tr>
<td>Trouble walking?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with a cane or walker?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
</tbody>
</table>

"Now I am going to read a list of physical ailments to you. Have you had any of these during the past 12 months?"

<table>
<thead>
<tr>
<th>Ailment</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent cramps in the legs?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pain in the heart or tightness or heavity in the chest?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Trouble breathing or shortness of breath?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Swollen ankles?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pains in the back or spine?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
Repeated pains in the stomach? Y N
Frequent headaches? Y N
Constant coughing or frequent heavy chest colds? Y N
Paralysis of any kind? Y N
Stiffness, swelling, or aching in any joint or muscle? Y N
Getting very tired in a short time? Y N

Thank you very much for your cooperation in answering the questions. Do you have anything that you want to add?

SUMMARY:

Do you have any questions for me?

SUMMARY:

"Before we conclude, I would like to remind you to send us your drawing using the blank piece of paper provided. We have sent you a postage-paid return envelope for your convenience."

"Also, let's review the directions for the drawing. They are: Using the blank paper provided please draw a pictorial map of the places you visit in a typical week. Your map does not need to be an exact replica of the area as is a conventional road map. It need only be a sketch of how you view your travels. There is no time limit, and it should be possible to complete your map in about 15 minutes. You aren't expected to have an artist's talent, and there are no wrong or right ways to draw your map. However, please label all buildings, main streets, and landmarks in your pictorial map which may not be easily recognizable."

"This concludes the interview. (Pause) We will contact you in a few months to schedule a second interview. (Pause) Thank you very much for your cooperation and participation. If, later on, you have any questions about this research, please feel free to contact us. We have included our number in the materials sent to you. Goodbye."

A.M.

RECORD END TIME: __ __:__ __ P.M.
POST-INTERVIEW QUESTIONS TO BE ANSWERED BY INTERVIEWER:

In general, was the respondent's attitude toward the interview: (Please circle one)

Friendly and eager
Indifferent, bored
Cooperative, but not eager
Hostile, angry

Did the respondent have difficulty at times understanding or comprehending the questions? [For example, did you have to repeat questions; respond to their queries: get answers that seemed to indicate confusion.]
(Please circle one)

Very Often
Fairly Often
Sometimes
Almost
Never
Never

Which questions were especially difficult for the respondent to answer? [BE SPECIFIC]

Other "observations" about respondent?
Appendix I

First Thank You Note

<date>

<address>

Dear <name>:

Thank you for taking part in the first of two interviews for the Transportation and Older Adults Project. Your help with this project is greatly appreciated. We will be contacting you in approximately three months to arrange your second interview. If you have any questions or comments in the meantime, please feel free to contact me at (714) 824-7046.

Sincerely,

Beverly A. Sandeen
Director
Transportation and Older Adults Project
Appendix J

Second Cover Letter

<date>

<address>

Dear <name>:

Your second telephone interview has been scheduled for <date and time>. As before, included with this letter are 3 papers that you will need to have with you at the telephone. They are: (1) Blue Sheet; (2) Yellow Sheet; and (3) Directions for Drawing. Please remember to have these papers with you at the telephone when we call you. Also, please try to keep your phone line free near the time of the interview. As you may recall, the interview will last between 30 - 40 minutes, so please plan your day accordingly.

Also included with this letter is a blank paper for your drawing. We will review the instructions for the drawing with you at the conclusion of your interview. The enclosed postage paid envelope is for you to use to return your completed drawing.

Your continued participation in this project is important to us. If you have any concerns, comments, or questions before or after the interview, please contact me at (714) 824-7046.

Sincerely,

Beverly A. Sandeen
Director
Transportation and Older Adults Project

enclosures:

FOR TELEPHONE INTERVIEW:
Blue Sheet
Yellow Sheet
Directions for Drawing

TO RETURN:
Completed Drawing (on Blank Sheet)
Postage Paid Envelope
Appendix K

Second Telephone Interview

Date: ________________  Time interview began: ________________
Interviewer: ____________  Subject number: ________________

"Hello, my name is __________, and I want to thank you for your continuing participation in this study. Did you receive the information packet we sent to you recently?"

If no, reschedule appointment: _________________________________. If yes, "That's great. Do you have the packet in front of you at this time?"

If no, "Would you please bring it to the telephone before we begin the interview? Thank you."
If yes, "Well, let's begin."

"As you may recall, the interview should take about 30 - 45 minutes. Some of the questions from the first interview will be asked again, and some new questions have been added to this survey. As a reminder, if at any time you do not feel like answering a particular question, you should feel comfortable to tell me that. Also, if you don't understand a question, I will do my best to try to help you understand it. Finally, there are no right or wrong answers, so please answer each one as honestly as you can. Your name will not be associated with your answers so you may remain anonymous. Do you have any questions before we begin?"

(Please record question that respondents ask, and, also, please note any areas that the respondents are unclear about in the introduction.)

(USE BACKS OF THE PAGES TO RECORD ANSWERS, IF YOU NEED MORE SPACE)

__________________________________________________________

A.M.

RECORD BEGINNING TIME: __ __: __ __ P.M.

"All right. Your first interview was conducted in ______ (month). Have you moved since our last interview?" Yes ____ No ____

If yes, "To what city did you move?" ______
"How long have you lived in your new home?" _____ months
"What type of residence is your new home? For example, is it an apartment?"
Apartment? Yes ___ No ___
Detached home? Yes ___ No ___
Condominium? Yes ___ No ___
Mobile home? Yes ___ No ___
Assisted living facility? Yes ___ No ___
Other? ________ Yes ___ No ___

(specify)

"How many people, including yourself, currently reside in your household?"

_____  

"Do you have any children?" _____ (fill in number) "Any grandchildren?"

_____ (#)

"How many relatives (not living in the household), live within 1/2 hours drive?"

_____ (#)

"Now I'd like to ask you some questions about transportation. Looking back at all of the driving experiences you have had over your lifetime, what kind of driving and how much driving did you do? For example, did you commute to work for many years and then drove for pleasure?"

(Make sure to get specific and detailed information about all driving experiences.)

Interviewer: WRITE verbatim answers and CIRCLE categories, below, with notations:

Verbatim answer:

Circle all answers given, and fill in appropriate blanks:

Commuted to work

# of years ______

Approximate distance to work (one way in miles) ________

Errands and local driving

# of years ______

Major occupation throughout life ________________

Pleasure trips

Describe ________

Other ________________

(Specify)

"Okay, would you please describe your usual mode of travel to me. That is, what type of transportation do you use most often?"

(If respondent hesitates, suggest "For example, most of the time do you drive to get where you want to go?")
Interviewer: WRITE verbatim answer and circle ONE category, below:

Verbatim answer:

Circle ONE:

<table>
<thead>
<tr>
<th>Drive myself</th>
<th>Ride with friends/acquaintances/relatives as passengers</th>
<th>Use private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive another person or other people around</td>
<td>Bicycle</td>
<td>Use a taxi</td>
<td>Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

"How many miles would you estimate that you drive in one year?" __________ miles

"Since your first interview in _____ (month), would you say you drive yourself:

About the same amount ____ A little more ____ A little less ____

No longer a driver ____ Other (please specify) __________

(If no longer a driver, use survey page 18 to probe about reasons why no longer a driver. Then, return and continue questions from this point.)

"What places do you visit in an average week when you _______(use the mode they have just described above)?"

Place 1 _________________ Place 6 _________________
Place 2 _________________ Place 7 _________________
Place 3 _________________ Place 8 _________________
Place 4 _________________ Place 9 _________________
Place 5 _________________ Place 10 _________________

Others? _____________________________________________

"I'm going to ask you the series of questions about each of the places where you travel. It takes a bit of time to answer these questions, so please don't feel rushed. Your accuracy is important to me."

"Now, thinking about going to _____ (place 1), about how many times do you go there within an average week?" ______ times
"About how far away is it from your home?" __________ miles

"And about how long does it take for you to get there from your home?"
_________ hours ________ minutes

"Now, thinking about going to _____ (place 2), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" __________ miles

"And about how long does it take for you to get there from your home?"
_________ hours ________ minutes

"Now, thinking about going to _____ (place 3), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" __________ miles

"And about how long does it take for you to get there from your home?"
_________ hours ________ minutes

"Now, thinking about going to _____ (place 4), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" __________ miles

"And about how long does it take for you to get there from your home?"
_________ hours ________ minutes

"Now, thinking about going to _____ (place 5), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" __________ miles

"And about how long does it take for you to get there from your home?"
_________ hours ________ minutes

"Now, thinking about going to _____ (place 6), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" __________ miles
"And about how long does it take for you to get there from your home?"

______ hours ______ minutes

"Now, thinking about going to ____ (place 7), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

______ hours ______ minutes

"Now, thinking about going to ____ (place 8), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

______ hours ______ minutes

"Now, thinking about going to ____ (place 9), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

______ hours ______ minutes

"Now, thinking about going to ____ (place 10), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

______ hours ______ minutes

Are there other places you travel?_________________________________________________

How do you typically travel to get there?__________________________________________

Are there other ways you travel to get there?________________________________________
"What type of transportation do you use second most often?" (Interviewer, please circle one. Probe if respondent hesitates. Write verbatim answer, then circle one category, below.)

Verbatim answer:

Circle ONE:

<table>
<thead>
<tr>
<th>Drive myself</th>
<th>Ride with friends/</th>
<th>Use a private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive another person or other people around</td>
<td>Bicycle</td>
<td>Use a taxi</td>
<td>Other</td>
<td>(Specify)</td>
</tr>
</tbody>
</table>

"If you had to estimate the percent of time you _____ (1st mode) versus _____ (2nd mode), what percent of time would you say you _____ (1st mode) versus _____ (2nd mode)?"

_______% (1st mode)       _____% (2nd mode)
These should equal 100%, if not ask why and write verbatim response:

"In terms of getting around locally, do you receive help from others?" Yes ___ No ___

(If subject needs clarification, ask if another person helps with them by offering rides.)

If yes ask, "Please describe the type and amount of help, as well as who provides it."

Type of help ________________________________

How much of the time (how often) help provided ___________

Who provides the help ____________________________

"Please tell me what you think your usual mode of travel will be for the next four months. That is, what type of transportation do you think that you will use most often in the next four months?" (Interviewer, write verbatim answer, then circle one category, below.)
Verbatim answer:

<table>
<thead>
<tr>
<th>Drive myself</th>
<th>Ride with friends/ acquaintances/ relatives as passengers</th>
<th>Use a private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive another person or other people around</td>
<td>Bicycle</td>
<td>Use a taxi</td>
<td>Other ____________</td>
<td></td>
</tr>
</tbody>
</table>

"Thinking about the trips you take during a typical week, are there places you wish to go, but feel you cannot?"

Yes ___  No ___

If yes, "What places?"
VERBATIM:

Continue, if answered yes. "Why do you feel you can't go there?"
VERBATIM:

IF STILL A DRIVER, ASK THE FOLLOWING 4 PAGES OF QUESTIONS:

"Compared to all other drivers, how would you rate yourself as a driver? Would you say that you are:"

Better than average ______ Average ______ Below average ______

"Compared to other drivers over the age of seventy, how would you rate yourself as a driver? Would you say that you are:"

Better than average ______ Average ______ Below average ______

"There may come a time when you are no longer able to drive, if this should happen, how would you deal with it?"

TIMING IN PORTIONS OF SECONDS FROM END OF QUESTION TO BEGINNING OF CONTENT OF ANSWER ____ ____ . ____ seconds (use stopwatch and don’t disclose this to respondent!!!)

(Respondents reaction to this question is VERY IMPORTANT. Take careful notes.)
VERBATIM:
"Without saying who it is, is there anyone you know who has had to stop driving?"

   Yes ___  No ___

   If yes, ask "how has that person dealt with the situation?"

   (Respondents reaction to this question is VERY IMPORTANT. If respondent asks for clarification, say, "How has that person adjusted to not being able to drive." If respondent wants more information, say, "What have they done to carry on their life or have they been able to carry on with things they like to do?" Take very detailed notes.)

"Suppose one of your friends tells you that they lost their driver’s license and can no longer drive. What advice would you give them?"

   (Respondents reaction to this question is VERY IMPORTANT. Take careful notes.)
   VERBATIM:
"People sometimes find that they need to modify when they drive or where they drive as they go through changes in their life circumstances. I'd like to find out if you have modified your driving. Please tell me how often you do any of these things:"

(NOTE: IF RESPONDENT ANSWERS "ALL" OR "MOST" OF TIME. THEN MARK QUESTIONS RELATING TO THIS ON FOLLOWING PAGES PER INTERVIEW TRAINING.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid driving on freeways</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid nighttime driving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive only with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive more slowly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoid busy streets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: If answered "All of the time" or "Most of the time" to any of the above items, ask:

(Otherwise, skip to next block)

"Has the modification of your driving ___?"

Made getting together with others more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___

Made buying groceries more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___

Made visiting the doctor more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___

Made visiting family and friends more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___

Made dealing with emergencies more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___

Made taking fun outings, such as going out to eat or going to the movies, more difficult?
A great deal ___ Somewhat ___ A little bit ___ Not at all ___
If answered "All of the time" or "Most of the time" (as specified above), also ask:

"How do you think changes in your driving habits have reduced your sense of independence?"
   Very much  Somewhat  A little bit  Not at all

"How do you think changes in your driving habits have reduced your sense of freedom?"
   Very much  Somewhat  A little bit  Not at all

"How do you think changes in your driving habits have reduced your feelings of control over your activities?"
   Very much  Somewhat  A little bit  Not at all

*********Block 2*********

"Now, I'd like you to imagine what you might be doing over the next four months. Think about the period of time between now and ________ (the month four months from now). (Long pause). Now, thinking about the next four months (pause), how likely is it that you will make any (further) modifications in these driving habits:"

(NOTE: DO NOT REPEAT THE PARTICULAR ANSWER OPTION WHEN RESPONDENT HAS ALREADY NOTED THAT THEY HAVE ALREADY MODIFIED THAT PARTICULAR OPTION "ALL OF THE TIME")

Drive on freeways less often  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

Avoid freeways all together  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

Drive less during nighttime  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

Drive only with others  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

Drive more slowly  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

Avoid busy streets  Very likely__ Somewhat likely__ Unlikely__
   Very unlikely__

"How would driving less change your lifestyle? Would it ______?"

(NOTE: DO NOT REPEAT QUESTIONS WHEN A RESPONDENT HAS ALREADY MODIFIED THEIR DRIVING "All of the time" or "Most of the time".)

Make getting together with others more difficult?
   Very likely__ Somewhat likely__ Unlikely__ Not at all likely__
Make buying groceries more difficult?
    Very likely ___ Somewhat likely ___ Unlikely ___ Not at all likely ___

Make visiting the doctor more difficult?
    Very likely ___ Somewhat likely ___ Unlikely ___ Not at all likely ___

Make visiting family and friends more difficult?
    Very likely ___ Somewhat likely ___ Unlikely ___ Not at all likely ___

Make handling emergencies more difficult?
    Very likely ___ Somewhat likely ___ Unlikely ___ Not at all likely ___

Make taking fun outings, such as going out to eat or going to the movies, more difficult?
    Very likely ___ Somewhat likely ___ Unlikely ___ Not at all likely ___

Would anything else change?
    Yes ___   No ___

If yes, what might that be?  VERBATIM:

(NOTE:  DO NOT ASK THE NEXT THREE QUESTIONS TO RESPONDENTS WHO HAVE ALREADY MODIFIED THEIR DRIVING "All of the time" or "Most of the time".)

"How do you think changes in your driving habits might affect your sense of independence?"
    Very much  Somewhat  A little bit  Not at all

"How do you think changes in your driving habits might affect your sense of freedom?"
    Very much  Somewhat  A little bit  Not at all

"How do you think changes in your driving habits might affect your feelings of control over your activities?"
    Very much  Somewhat  A little bit  Not at all

**********Block 3 - All respondents**********

"For some people, it would be very problematic to change their lifestyle because they need to modify their driving practices; for other people, this would not be a problem. Please tell me how problematic it would be for you if your lifestyle changed in each of the following areas because you needed to change your driving practices."

If you had to socialize less?
    Very problematic ___ Somewhat problematic ___ Not at all problematic ___

If you had to take fewer fun outings?
    Very problematic ___ Somewhat problematic ___ Not at all problematic ___
If you had to see family and friends less often?
   Very problematic ___ Somewhat problematic ___ Not at all problematic ___
If you were unable to complete needed errands?
   Very problematic ___ Somewhat problematic ___ Not at all problematic ___

AT THIS POINT, ASK OF ALL RESPONDENTS THE FOLLOWING QUESTIONS:

"Now I will read a series of statements to you. After I read each one, please tell me if you agree or disagree with it."

"As I grow older, things seem better than I thought they would be."
   Agree _____ Disagree _____

"I have gotten more of the breaks in life than most of the people I know."
   Agree _____ Disagree _____

"This is the dreariest time of my life."
   Agree _____ Disagree _____

"I am just as happy as when I was younger."
   Agree _____ Disagree _____

"My life could be happier than it is now."
   Agree _____ Disagree _____

"These are the best years of my life."
   Agree _____ Disagree _____

"Most of the things I do are boring or monotonous."
   Agree _____ Disagree _____

"I expect some interesting and pleasant things to happen to me in the future."
   Agree _____ Disagree _____

"The things I do are as interesting to me as they ever were."
   Agree _____ Disagree _____

"I feel old and somewhat tired."
   Agree _____ Disagree _____

"As I look back on my life, I am fairly well satisfied."
   Agree _____ Disagree _____

"I would not change my past life even if I could."
   Agree _____ Disagree _____

"Compared to other people my age, I make a good appearance."
   Agree _____ Disagree _____

"In spite of what some people say, the lot of the average person is getting worse, not better."
   Agree _____ Disagree _____

"When I think back over my life, I didn't get most of the important things I wanted."
   Agree _____ Disagree _____

"Compared to other people, I get down in the dumps too often."
   Agree _____ Disagree _____
"I have made plans for the things I'll be doing a month or a year from now."
Agree _____ Disagree _____

"I've gotten pretty much what I expected out of life."
Agree _____ Disagree _____

"Now, I am going to ask you a series of questions about how you've been feeling lately. Please follow along on the yellow sheet and answer each question after I read it to you with the number that best indicates how you've been feeling. Do you have the yellow sheet in front of you? (Pause) All right. Let's begin."

"In general, how has your health been lately?"

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<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>poor</td>
</tr>
</tbody>
</table>

"In general, how have your spirits been lately?"

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I've been in very good spirits</td>
<td>my spirits have been very low</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

"In general, how energetic have you felt lately?"

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<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>always full of energy</td>
<td>never have any energy</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

"In general, how happy would you say you have been lately?"

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<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>extremely happy</td>
<td>not at all happy</td>
<td></td>
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</tbody>
</table>

"In general, how satisfied are you with your life at this point in time?"

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<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
"In general, how satisfied are you with your friends and family at this point in time?"

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<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

"In general, how satisfied are you with your home at this point in time?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how satisfied are you with your community at this point in time?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how satisfied are you with your access to transportation at this point in time?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"I am now going to read you a list of the ways you might have felt recently. Please tell me how often you have felt this way during the past week by using the rating scale provided on the blue sheet we sent to you. Do you have the blue sheet? One means rarely or none of the time (less than 1 day); two means some or a little of the time (1-2 days); three means occasionally or a moderate amount of the time (3-4 days); and 4 means most or all of the time (5-7 days). Okay? All right, let's begin."

- I was bothered by the things that usually don’t bother me.
- I did not feel like eating; my appetite was poor.
- I felt that I could not shake off the blues even with help from my family or friends.
- I felt that I was just as good as other people.
- I had trouble keeping my mind on what I was doing.
- I felt depressed.
- I felt that everything I did was an effort.
- I felt hopeful about the future.
- I thought my life had been a failure.
- I felt fearful.
- My sleep was restless.
I was happy.
I talked less than usual.
I felt lonely.
People were unfriendly.
I enjoyed life.
I had crying spells.
I felt sad.
I felt that people dislike me.
I could not get going.

"Thank you. Now, I would like to ask you some health-related questions. First, there are two activities that people sometimes have trouble with: trouble climbing stairs and trouble getting outdoors. Do you have trouble doing either of these things?"

Yes ___ No ___

(If respondent answers "Yes" to this question, probe and ask, "Which of these things do you have trouble doing? How long have you had this trouble? Less than 6 months or more than 6 months?")

Note activity and length of trouble(s):

"Have you had to cut down or stop any activity you used to do because of some illness or injury? For example, you have had to take it easy, or cut out some sport, or you find you can't spend as many hours gardening as you used to?"

Yes ___ No ___

(If respondent answers "Yes" to this question, probe and ask, "How long have you had to cut down or stop this activity? Less than 6 months or more than 6 months?")

Note length of trouble(s):

"I am now going to read to you a list of medical conditions that usually last for some time. Have you had any of these conditions during the past 12 months?"
(Interviewer circle Y for "yes" or N for "no".)

<table>
<thead>
<tr>
<th>Question</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Blood Pressure?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Trouble?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic bronchitis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arthritis or rheumatism?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epilepsy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes?</td>
<td></td>
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<tr>
<td>Cancer?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuberculosis?</td>
<td></td>
<td></td>
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<tr>
<td>Stomach ulcer?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic gallbladder trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic liver trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Hernia?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

"I am going to read a list of physical impairments. Do you have any of these?"

<table>
<thead>
<tr>
<th>Question</th>
<th>Y</th>
<th>N</th>
<th>If yes, ask...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble with hearing?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...even with a hearing aid?</td>
<td></td>
<td></td>
<td>N/A (don't use)</td>
</tr>
<tr>
<td>Trouble with seeing?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...even with glasses?</td>
<td></td>
<td></td>
<td>N/A (don't use)</td>
</tr>
<tr>
<td>Trouble walking?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...even with a cane or walker?</td>
<td></td>
<td></td>
<td>N/A (don't use)</td>
</tr>
</tbody>
</table>

"Now I am going to read a list of physical ailments to you. Have you had any of these during the past 12 months?"

<table>
<thead>
<tr>
<th>Question</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent cramps in the legs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain in the heart or tightness or heaviness in the chest?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble breathing or shortness of breath?</td>
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<tr>
<td>Swollen ankles?</td>
<td></td>
<td></td>
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<tr>
<td>Pains in the back or spine?</td>
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</tr>
<tr>
<td>Repeated pains in the stomach?</td>
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<td></td>
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<tr>
<td>Frequent headaches?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant coughing or frequent heavy chest colds?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paralysis of any kind?</td>
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<td></td>
</tr>
</tbody>
</table>
Stiffness, swelling, or aching in any joint or muscle?  Y  N
Getting very tired in a short time?  Y  N

Do you take any medications which specifically mention their interaction with driving on the label?  Yes ___  No ___

Note any particular comments made:

Thank you very much for your cooperation in answering the questions. Do you have anything that you want to add?

SUMMARY:

Do you have any questions for me?

SUMMARY:

"Before we conclude, I would like to remind you to send us your drawing using the blank piece of paper provided. We have sent you a postage-paid return envelope for your convenience."

"Also, let's review the directions for the drawing. They are: Using the blank paper provided please draw a pictorial map of the places you visit in a typical week. Your map does not need to be an exact replica of the area as is a conventional road map. It need only be a sketch of how you view your travels. There is no time limit, and it should be possible to complete your map in about 15 minutes. You aren't expected to have an artist's talent, and there are no wrong or right ways to draw your map. However, please label all buildings, main streets, and landmarks in your pictorial map which may not be easily recognizable."

"This concludes the interview. (Pause) We will be sending you two short questionnaires to fill out along with a postage paid envelope. Please return them to us at your earliest convenience. If you remain interested in this study, we may contact you once again in a few months for participation in a follow-up study. (Pause) Thank you very much for your cooperation and participation. If, later on, you have any questions about this research, please feel free to contact us. You should receive a short report about this research in a few months, along with notification about your results in the free drawing. We have included our number in the materials sent to you. Your participation has been crucial to the success of this project. Goodbye."

A.M.

RECORD END TIME: ___ ___: ___  P.M.
POST-INTERVIEW QUESTIONS TO BE ANSWERED BY INTERVIEWER:

In general, was the respondent's attitude toward the interview: (Please circle one)

Friendly and eager  Cooperative, but not eager
Indifferent, bored   Hostile, angry

Did the respondent have difficulty at times understanding or comprehending the questions? [For example, did you have to repeat questions: respond to their queries: get answers that seemed to indicate confusion.] (Please circle one)

Very Often  Fairly Often  Sometimes  Almost Never  Never

Which questions were especially difficult for the respondent to answer? [BE SPECIFIC]

Other "observations" about respondent?
PAGE FOR RESPONDENTS WHO NO LONGER DRIVE:

"If you no longer drive yourself or drive other people in your car, please tell me why not."

Verbatim answer:

And, circle one:

_____ Advice from doctor
_____ Increased nervousness behind the wheel
_____ Trouble seeing pedestrians and cars
_____ Medical conditions
_____ Advice from family/friends
_____ Difficulty in coordinating hand/foot movement
_____ Transportation provided by retirement center
_____ Cost of upkeep/age of vehicle
_____ Involvement in minor accidents
_____ License revoked
_____ Other, please specify: ________________________________

"Would you say that:

This reason was completely my own ____
This reason was forced me ____

"Would you say that (Interviewer, circle one or other answer):

This reason happened slowly over time ____
This reason happened suddenly ____

"When did you stop driving?" ________________
month/year

"How have you dealt with no longer being a driver?"

(Respondents reaction to this question is VERY IMPORTANT. Write detailed answer.)
Verbatim:

"Suppose one of your friends tells you that they lost their license and can no longer drive. What advice would you give them?"
Verbatim:
Appendix L

Two Additional Questionnaires

DRIVING SKILLS QUESTIONNAIRE

This questionnaire concerns your confidence in your ability to handle certain driving tasks. The following items describe various actions you may take while driving. For each item estimate the likelihood - anywhere from 0% to 100% - that you could successfully perform each driving task using the percentage scale below.

The estimates concern your confidence in your ability to perform the actions and not how often you perform them. For instance, you may or may not always drive within the speed limit, but you will probably have a high likelihood of being able to stay within it.

<table>
<thead>
<tr>
<th>likelihood of successful performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
</tr>
<tr>
<td>high uncertainty</td>
</tr>
</tbody>
</table>

1. Being aware of the speed limit.

2. Being able to control your auto when a cat runs right in front of you.

3. Maneuvering your car from the #1 left lane to the right shoulder during a tire blowout.

4. Being aware of traffic behind you.

5. Driving at night in a dark area with no street lights.

6. Parallel parking in a space that is barely bigger than your car.

7. Maintaining control of your auto while coming to a stop on a dirt road.

8. Parking in a tight space in a parking structure.

9. Backing out of a driveway directly on to a street with oncoming traffic.
<table>
<thead>
<tr>
<th></th>
<th>likelihood of successful performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>high uncertainty</td>
<td>0%  10%  20%  30%  40%  50%  60%  70% 80% 90% 100%</td>
</tr>
<tr>
<td>intermediate certainty</td>
<td></td>
</tr>
<tr>
<td>complete certainty</td>
<td></td>
</tr>
<tr>
<td>likelihood of</td>
<td></td>
</tr>
<tr>
<td>successful performance</td>
<td></td>
</tr>
</tbody>
</table>

10. Staying in your lane while making a tight turn on a freeway offramp going 30 mph.  
11. Using freeway signage to make a freeway interchange you have never made before.  
12. Checking the oil level.  
13. Completing a familiar interchange.  
14. Passing a truck on a two lane road.  
15. Making a lane change during bumper-to-bumper traffic.  
16. Being aware of pedestrians.  
17. Knowing how fast you are going.  
18. Gaining access to a freeway when there is little room to accelerate and traffic flow is very rapid.  
20. Making a freeway lane change during moderate congestion.  
21. Knowing who has the right of way when three cars arrive at a 4-way intersection at the same time.  
22. Knowing what to do in case you are involved in an accident.  
23. Knowing when something is wrong with your car.  
24. Maneuvering away from someone who is following too closely.
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Likelihood of successful performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>high uncertainty</td>
</tr>
<tr>
<td>10%</td>
<td>intermediate certainty</td>
</tr>
<tr>
<td>20%</td>
<td>complete certainty</td>
</tr>
<tr>
<td>30%</td>
<td></td>
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<tr>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>50%</td>
<td></td>
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<td>60%</td>
<td></td>
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<tr>
<td>70%</td>
<td></td>
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<tr>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

25. Knowing whether you are traveling north, south, east, or west.  
27. Completing a three point turn (also called a "wide turn").  
29. Coming to a complete stop in traffic during the rain of the season.  
30. Staying within your lane during a thick fog.
LIFE EXPERIENCES QUESTIONNAIRE

Below is a list of life experiences which require some amount of change in one's regular life pattern. Drawing on your own background, please rate each item by using the following scale.

If I had to face this experience, I would say it is:

5  4  3  2  1
not at all somewhat very
stressful stressful stressful

How stressful would this be to you? Have you ever experienced this? (mark yes or no)

Rating          Check one
_____ 1.  Retirement  ___. yes ___ no
_____ 2.  Major personal injury or illness  ___. yes ___ no
_____ 3.  Death of spouse  ___. yes ___ no
_____ 4.  Divorce  ___. yes ___ no
_____ 5.  Death of a close family member  ___. yes ___ no
_____ 6.  Losing driver's license  ___. yes ___ no
_____ 7.  Death of a close friend  ___. yes ___ no
_____ 8.  Child got divorced  ___. yes ___ no
_____ 9.  Loss of independence  ___. yes ___ no
_____ 10. Loss of home through fire, flood, or other disaster  ___. yes ___ no
_____ 11. Took a cut in income  ___. yes ___ no
_____ 12. Decreased social activities  ___. yes ___ no
_____ 13. A decrease in the frequency of family get-togethers  ___. yes ___ no
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>Feeling of slowing down</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Moved into nursing home or hospital</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Physical health declined</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Unable to get treatment for an illness or injury</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Eyesight failing</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Hearing failing</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Painful arthritis</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Major change in usual type and amount of recreational activities</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Robbed/assaulted</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Marital separation from mate</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Argument with children</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Argument with spouse</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Stopped going to church or synagogue</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Knew someone who committed or attempted suicide</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Lost pet</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Other: ___________________________</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Other: ___________________________</td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>

*Your comments:*
Appendix M

Introductory Letter for Former Drivers

<date>

<address>

Dear <name>:

Thank you for volunteering to participate in the study on transportation and older adults. Your willingness to assist in this project is appreciated very much.

Your telephone interview has been scheduled for <date and time>. Included with this letter are 3 papers that you will need to have with you at the telephone. They are: (1) Yellow Sheet; (2) Blue Sheet; and (3) Directions for Drawing. Please have these papers with you at the telephone when we call you. Please try to keep your phone line free near the time of the interview. Also, if you have call waiting, we would appreciate it if you would disengage it during the course of the interview. As you may recall, the interview will last between 30 - 40 minutes, so please plan your day accordingly.

Also included with this letter is a blank paper for your drawing. We will review the instructions for the drawing with you at the conclusion of your interview. The enclosed postage paid envelope is for you to use to return your completed drawing. Your participation is valuable to us. If you have any concerns, comments, or questions before or after the interview, please contact me at (714) 824-7046.

Sincerely,

Beverly A. Sandeen
Director
Transportation and Older Adults Project

enclosures:

FOR TELEPHONE INTERVIEW:
Yellow Sheet
Blue Sheet
Directions for Drawing

TO RETURN:
Completed Drawing (on Blank Sheet)
Postage Paid Envelope
YELLOW SHEET

1 2 3 4 5 6 7
excellent poor

1 2 3 4 5 6 7
spirits spirits
high low

1 2 3 4 5 6 7
high low
energy energy

1 2 3 4 5 6 7
extremely not
happy happy

1 2 3 4 5 6 7
very not at all
satisfied satisfied
BLUE SHEET

1 = "RARELY OR NONE OF THE TIME"
   (LESS THAN 1 DAY)

2 = "SOME OR A LITTLE OF THE TIME"
   (1 - 2 DAYS)

3 = "OCCASIONALLY OR A MODERATE AMOUNT
    OF THE TIME"
   (3 - 4 DAYS)

4 = "MOST OR ALL OF THE TIME"
   (5 - 7 DAYS)
DIRECTIONS FOR DRAWING

Using the blank paper provided please draw a pictorial map of the places you visit in a typical week.

Your map does not need to be an exact replica of the area as is a conventional road map. It need only be a sketch of how you view your travels.

There is no time limit, and it should be possible to complete your map in less than 15 minutes. You aren’t expected to have an artist’s talent, and there are no wrong or right ways to draw your map. However, please label all buildings, main streets, and landmarks in your sketch which may not be easily recognizable.
Appendix N

Interview for Former Drivers

Date: __________________ Time interview began: ___________
Interviewer: __________ Subject number: ___________

"Hello, my name is _________ and I want to thank you for agreeing to answer
some questions about being an older adult in today's society. Did you receive the
information packet we sent to you?"

If no. reschedule appointment: ______________________________. If yes.
"That's great. Do you have the packet in front of you at this time?"

If no, "Would you please bring it to the telephone before we begin the interview?
Thank you."
If yes, "Well, let's begin."

"The interview should take less than one hour. If at any time you do not feel like
answering a particular question, you should feel comfortable to tell me that.
Also, if you don't understand a question, I will do my best to try to help you
understand it. Finally, there are no right or wrong answers, so please answer
each one as honestly as you can. Your name will not be associated with your
answers so you may remain anonymous. Do you have any questions before we
begin?"

(Please record question that respondents ask, and, also, please note any areas that
the respondents are unclear about in the introduction.)

________________________________________

A.M.

RECORD BEGINNING TIME: ___ : ___ P.M.

"All right, let's begin."

"According to the information you shared with us, you live in ____________
(city). How long have you lived there?" _____ years _____ months

"What type of residence do you live in? For example, do you live in an
apartment?" (Probe for category.)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartment?</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Detached home?</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>Condominium?</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

170
Mobile home?  Yes ___ No ___
Assisted living facility? Yes ___ No ___
Other? ___________ Yes ___ No ___
(specify)

"How many people, including yourself, reside in your household?" _____

"Do you have any children?" ____ #  "Any grandchildren?" ____ #

"How many relatives (not living in your household), live within 1/2 hours drive?" _____ #

"Getting back to where residences, where did you live before you lived in ______________________ (city)?" ____________________________

"How long did you live there?" _____ years _____ months

"Have you lived in any other places?" ____ Yes ____ No

If yes, "Could you tell me where you have lived and for how long you lived there?"
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months
_________________________ place _____ years _____ months

"Now I'd like to ask you some questions about transportation. Looking back at all of the transportation experiences you have had over your lifetime, how have you gotten around?"

(If respondent hesitates, suggest "For example, did you take the bus when you were younger, and then drove when you were older?" Try to get specific and detailed information about all modes used)

Interviewer: WRITE verbatim answers and CIRCLE categories, below, with notations:
Verbatim answer:

Circle all answers given, with notations:

| Drove myself                  | Rode with friends/relatives as passengers | Used private transit | Used public transit | Walked 
|-------------------------------|------------------------------------------|----------------------|---------------------|---------
| Drove another person or others | Bicycled                                  | Used a taxi          | Other (Specify)     | 

"Also, looking back at all of the driving experiences you have had over your lifetime, what kind of driving and how much driving did you do? For example, did you commute to work for many years and then drove for pleasure?"

(Make sure to get specific and detailed information about all driving experiences.)

Interviewer: WRITE verbatim answers and CIRCLE categories. below, with notations:

Verbatim answer:

Circle all answers given, and fill in appropriate blanks:

Committed to work               Errands and local driving Pleasure trips
# of years ______               # of years ______              Describe _________
Approximate distance to work (one way in miles) _________
Major occupation throughout life ____________

"When was the last time you drove a vehicle?" __________
"Please tell me your reason for no longer driving." Verbatim answer:

Check one:
----- Advice from doctor
----- Increased nervousness behind the wheel
----- Trouble seeing pedestrians and cars
----- Medical conditions
----- Advice from family/friends
----- Difficulty in coordinating hand/foot movement
----- Transportation provided by retirement center
----- Cost of upkeep/age of vehicle
----- Involvement in minor accidents
----- License revoked
----- Other. please specify: __________________________

"Would you say that..." (Interviewer, check one answer and note additional comments):

----- "This reason was completely on your own,
----- This reason was forced on you, OR
----- This reason was made both by myself and by others?"

"Also, would you say that..." (Interviewer, check one answer and note additional comments):

----- "This reason happened slowly over time, OR
----- This reason happened suddenly?"

"We've already established that you are no longer a driver. So, let's consider all of the transportation options you have available to you now. Regardless of your personal preferences, are you currently able to _______?" (Repeat stem, and if respondent answers "No" then probe about availability of the option versus ability to utilize the option.)

...use private transit (e.g., Super Shuttle)? Yes ___ No ___

...use public transit (e.g., OCTD bus service)? Yes ___ No ___

...use a taxi Yes ___ No ___

...walk Yes ___ No ___

...bicycle Yes ___ No ___
...ride with friends/acquaintances/relatives as passenger  Yes ___ No ___
in their car?

other? (Specify) ______________________  Yes ___ No ___

"Now, thinking about what you do right now, could you please describe your
usual mode of travel to me. That is, what type of transportation do you use most
often?"

(If respondent hesitates, suggest "For example, most of the time do you
bicycle to get where you want to go?")

Interviewer: WRITE verbatim answer and circle ONE category, below:

Verbatim answer:

Circle ONE:

<table>
<thead>
<tr>
<th>Ride with friends/</th>
<th>Use private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>acquaintances/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>relatives as</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>passengers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>Use a taxi</td>
<td>Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

"What places do you visit in an average week when you ________(use the mode
they have just described above)?"

<table>
<thead>
<tr>
<th>Place 1</th>
<th>Place 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place 2</td>
<td>Place 7</td>
</tr>
<tr>
<td>Place 3</td>
<td>Place 8</td>
</tr>
<tr>
<td>Place 4</td>
<td>Place 9</td>
</tr>
<tr>
<td>Place 5</td>
<td>Place 10</td>
</tr>
</tbody>
</table>

Others? ___________________________________________________
"Do you ever travel to a few of these places within one trip by _______ (use the mode they have just described)? For example do you go to _________ and _________ (select items, for example, the grocery store and the dry cleaners, where this might be possible) during the same trip?" Yes _____ No _____

If yes, "Could you describe to me the kind of combinations of trips you typically take within a week?"

VERBATIM ANSWER:

"I'm going to ask you a series of questions about each of the places where you travel. It takes a bit of time to answer these questions, so please don't feel rushed. Your accuracy is important to me."

"Now, thinking about going to _____ (place 1), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

__________ hours ________ minutes

******************************************************************************

"Now, thinking about going to _____ (place 2), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

__________ hours ________ minutes

******************************************************************************

"Now, thinking about going to _____ (place 3), about how many times do you go there within an average week?" ______ times

"About how far away is it from your home?" ________ miles

"And about how long does it take for you to get there from your home?"

__________ hours ________ minutes

******************************************************************************
"Now, thinking about going to _____ (place 4), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
________ hours _______ minutes

"Now, thinking about going to _____ (place 5), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
________ hours _______ minutes

"Now, thinking about going to _____ (place 6), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
________ hours _______ minutes

"Now, thinking about going to _____ (place 7), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
________ hours _______ minutes

"Now, thinking about going to _____ (place 8), about how many times do you go there within an average week?" _______ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
________ hours _______ minutes
"Now, thinking about going to ____ (place 9), about how many times do you go there within an average week?" _____ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
______ hours ______ minutes

"Now, thinking about going to ____ (place 10), about how many times do you go there within an average week?" _____ times

"About how far away is it from your home?" _______ miles

"And about how long does it take for you to get there from your home?"
______ hours ______ minutes

Are there other places you travel?

How do you typically travel to get there?

Are there other ways you travel to get there?

(Pause briefly.)

"What type of transportation do you use second most often?" (Interviewer, please circle one. Probe if respondent hesitates. Write verbatim answer, then circle one category, below.)

Verbatim answer:

Circle ONE:

Ride with friends/
acquaintances/
relatives as passengers

Use a private transit

Use public transit

Walk

Bicycle

Use a taxi

Other (Specify)

(Pause briefly)
"Please tell me what you think your **usual** mode of travel will be for the next four months. That is, what type of transportation do you think that you will use most often in the next four months?" (Interviewer, write verbatim answer, then circle one category, below.)

**Verbatim answer:**

<table>
<thead>
<tr>
<th>Ride with friends/ acquaintances/ relatives as passengers</th>
<th>Use a private transit</th>
<th>Use public transit</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>Use a taxi</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

"Thinking about the trips you take during a typical week, are there places you wish to go, but feel you cannot?"

Yes ___ No ___

If yes, "What places?"

**VERBATIM:**

Continue, if answered yes. "If you were still driving, would you be able to get there?"

**VERBATIM:**

"Now that you've had a chance to reflect a bit on no longer being a driver, how would you say you have dealt with this?"

**TIMING IN PORTIONS OF SECONDS FROM END OF QUESTION TO BEGINNING OF CONTENT OF ANSWER ___ ___ . ___ seconds (use stopwatch and don't disclose this to respondent!!!)"
(Respondents reaction to this question is VERY IMPORTANT. Take careful notes.)

VERBATIM:

"Without saying who it is, is there anyone you know who has had to stop driving?"
Yes ___ No ___

If yes, ask "how has that person dealt with the situation?"

(Respondents reaction to this question is VERY IMPORTANT. If respondent asks for clarification, say, "How has that person adjusted to not being able to drive." If respondent wants more information, say, "What have they done to carry on their life or have they been able to carry on with things they like to do?" Take very detailed notes.)

"Suppose one of your friends tells you that they lost their driver's license and can no longer drive. What advice would you give them?"

(Respondents reaction to this question is VERY IMPORTANT. Take careful notes.)

VERBATIM:

"People sometimes find that they have needed to modify when they drive or where they drive as they go through changes in their life circumstances. I'd like to find out if you made any modifications while you were still driving. Thinking about the period of time before you stopped driving, did you ever..."

Avoid driving on freeways? All of the time___ Most of the time___
Some of the time___ None of the time___
If answer is any but "none of the time," ask:
"How long did you do this before you stopped driving?"

Avoid nighttime driving? All of the time___ Most of the time___
Some of the time___ None of the time___
If answer is any but "none of the time," ask:
"How long did you do this before you stopped driving?"

Drive only with others? All of the time___ Most of the time___
Some of the time___ None of the time___
If answer is any but "none of the time," ask:
"How long did you do this before you stopped driving?"

Drive more slowly? All of the time___ Most of the time___
Some of the time___ None of the time___
If answer is any but "none of the time," ask:
"How long did you do this before you stopped driving?"

Avoid busy streets? All of the time___ Most of the time___
Some of the time___ None of the time___
If answer is any but "none of the time," ask:
"How long did you do this before you stopped driving?"

"Again, thinking back on the time period when you were still a driver, did the modification of your driving ___?"

Ever make getting together with others more difficult? Yes___ No___
If yes, "Could you please provide me with an example of this?"

Ever make buying groceries more difficult? Yes___ No___
If yes, "Could you please provide me with an example of this?"

Ever make visiting the doctor more difficult? Yes___ No___
If yes, "Could you please provide me with an example of this?"
Ever make visiting family and friends more difficult?  Yes___ No___
     If yes. "Could you please provide me with an example of this?"

Ever make dealing with emergencies more difficult?  Yes___ No___
     If yes. "Could you please provide me with an example of this?"

Ever make taking fun outings, such as going out to eat or going to the movies, more difficult?  Yes___ No___
     If yes. "Could you please provide me with an example of this?"

"Thinking about your life now, how has not driving changed your lifestyle?  Has it _____?"

Made getting together with others more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made buying groceries more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made visiting the doctor more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made visiting family and friends more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made handling emergencies more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___
Made taking fun outings, such as going out to eat or going to the movies, more difficult?  
   A great deal ___ Somewhat ___ A little bit ___ Not at all ___

• Has anything else changed?  
   Yes ___ No ___

   If yes, what might that be?
VERBATIM:
"How do you think not driving has affected your sense of independence?"
Very much  Somewhat  A little bit  Not at all

"How do you think not driving has affected your sense of freedom?"
Very much  Somewhat  A little bit  Not at all

"How do you think not driving has affected your feelings of control over your activities?"
Very much  Somewhat  A little bit  Not at all

"For some people, it is very problematic to have to change their lifestyle because they have stopped driving; for other people, this is not a problem. Please tell me if you have had to change your lifestyle in each of the following areas because you have stopped driving and, if so, how problematic it has been for you."

Have you had to socialize less than when you were a driver?
Yes _____  No _____

If yes, how problematic has this been for you?
Very problematic ___  Somewhat problematic ___  Not at all problematic ___

Have you had to take fewer fun outings than when you were a driver?
Yes _____  No _____

If yes, how problematic has this been for you?
Very problematic ___  Somewhat problematic ___  Not at all problematic ___

Have you had to see family and friends less often than when you were a driver?
Yes ____  No ___

If yes, how problematic has this been for you?
Very problematic ___  Somewhat problematic ___  Not at all problematic ___

Have you been unable to complete needed errands than when you were a driver?
Yes ____  No ___

If yes, how problematic has this been for you?
Very problematic ___  Somewhat problematic ___  Not at all problematic ___
"Now I will read a series of statements to you. After I read each one, please tell me if you agree or disagree with it."

"As I grow older, things seem better than I thought they would be."
  Agree _____ Disagree _____

"I have gotten more of the breaks in life than most of the people I know."
  Agree _____ Disagree _____

"This is the dreariest time of my life."
  Agree _____ Disagree _____

"I am just as happy as when I was younger."
  Agree _____ Disagree _____

"My life could be happier than it is now."
  Agree _____ Disagree _____

"These are the best years of my life."
  Agree _____ Disagree _____

"Most of the things I do are boring or monotonous."
  Agree _____ Disagree _____

"I expect some interesting and pleasant things to happen to me in the future."
  Agree _____ Disagree _____

"The things I do are as interesting to me as they ever were."
  Agree _____ Disagree _____

"I feel old and somewhat tired."
  Agree _____ Disagree _____

"As I look back on my life, I am fairly well satisfied."
  Agree _____ Disagree _____

"I would not change my past life even if I could."
  Agree _____ Disagree _____

"Compared to other people my age, I make a good appearance."
  Agree _____ Disagree _____

"In spite of what some people say, the lot of the average person is getting worse, not better."
  Agree _____ Disagree _____

"When I think back over my life, I didn't get most of the important things I wanted."
  Agree _____ Disagree _____

"Compared to other people, I get down in the dumps too often."
  Agree _____ Disagree _____

"I have made plans for the things I'll be doing a month or a year from now."
  Agree _____ Disagree _____

"I've gotten pretty much what I expected out of life."
  Agree _____ Disagree _____
"Now, I am going to ask you a series of questions about how you’ve been feeling lately. Please follow along on the yellow sheet and answer each question after I read it to you with the number that best indicates how you’ve been feeling. Do you have the yellow sheet in front of you? (Pause) All right. Let’s begin."

"In general, how has your health been lately?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>poor</td>
</tr>
</tbody>
</table>

"In general, how have your spirits been lately?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’ve been in very good spirits</td>
<td>my spirits have been very low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how energetic have you felt lately?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>always full of energy</td>
<td>never have any energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how happy would you say you have been lately?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>extremely happy</td>
<td>not at all happy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how satisfied are you with your life at this point in time?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"In general, how satisfied are you with your friends and family at this point in time?"

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>very satisfied</td>
<td>not at all satisfied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"In general, how satisfied are you with your home at this point in time?"

1 2 3 4 5 6 7
very satisfied not at all satisfied

"In general, how satisfied are you with your community at this point in time?"

1 2 3 4 5 6 7
very satisfied not at all satisfied

"In general, how satisfied are you with your access to transportation at this point in time?"

1 2 3 4 5 6 7
very satisfied not at all satisfied

"I am now going to read you a list of the ways you might have felt recently. Please tell me how often you have felt this way during the past week by using the rating scale provided on the blue sheet we sent to you. Do you have the blue sheet? One means rarely or none of the time (less than 1 day); two means some or a little of the time (1-2 days); three means occasionally or a moderate amount of the time (3-4 days); and 4 means most or all of the time (5-7 days). Okay? All right, let's begin."

___ I was bothered by the things that usually don’t bother me.
___ I did not feel like eating; my appetite was poor.
___ I felt that I could not shake off the blues even with help from my family or friends.
___ I felt that I was just as good as other people.
___ I had trouble keeping my mind on what I was doing.
___ I felt depressed.
___ I felt that everything I did was an effort.
___ I felt hopeful about the future.
___ I thought my life had been a failure.
___ I felt fearful.
___ My sleep was restless.
___ I was happy.
___ I talked less than usual.
___ I felt lonely.
People were unfriendly.
I enjoyed life.
I had crying spells.
I felt sad.
I felt that people dislike me.
I could not get going.

"Thank you. Now, I would like to ask you some health-related questions. First, there are two activities that people sometimes have trouble with: trouble climbing stairs and trouble getting outdoors. Do you have trouble doing either of these things?"

Yes ___   No ___

(If respondent answers "Yes" to this question, probe and ask, "Which of these things do you have trouble doing? How long have you had this trouble? Less than 6 months or more than 6 months?")

Note activity and length of trouble(s):

"Have you had to cut down or stop any activity you used to do because of some illness or injury? For example, you have had to take it easy, or cut out some sport, or you find you can’t spend as many hours gardening as you used to?"

Yes ___   No ___

(If respondent answers "Yes" to this question, probe and ask, "How long have you had to cut down or stop this activity? Less than 6 months or more than 6 months?")

Note length of trouble(s):

"I am now going to read to you a list of medical conditions that usually last for some time. Have you had any of these conditions during the past 12 months?"

(Interviewer circle Y for "yes" or N for "no".)

High Blood Pressure? Y N
Heart Trouble? Y N
Stroke? Y N
Chronic bronchitis? Y N
Asthma? Y N
Arthritis or rheumatism? Y N
<table>
<thead>
<tr>
<th>Condition</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epilepsy?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Diabetes?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Cancer?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Tuberculosis?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Stomach ulcer?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic gallbladder trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chronic liver trouble?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Hernia?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

"I am going to read a list of physical impairments. Do you have any of these?"

<table>
<thead>
<tr>
<th>Condition</th>
<th>Y</th>
<th>N</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble with hearing?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with a hearing aid?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
<tr>
<td>Trouble with seeing?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with glasses?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
<tr>
<td>Trouble walking?</td>
<td>Y</td>
<td>N</td>
<td>If yes, ask...</td>
</tr>
<tr>
<td>...even with a cane or walker?</td>
<td>Y</td>
<td>N</td>
<td>N/A (don’t use)</td>
</tr>
</tbody>
</table>

"Now I am going to read a list of physical ailments to you. Have you had any of these during the past 12 months?"

<table>
<thead>
<tr>
<th>Condition</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent cramps in the legs?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pain in the heart or tightness or heaviness in the chest?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Trouble breathing or shortness of breath?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Swollen ankles?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pains in the back or spine?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Repeated pains in the stomach?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Frequent headaches?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Constant coughing or frequent heavy chest colds?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Paralysis of any kind?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Stiffness, swelling, or aching in any joint or muscle?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Getting very tired in a short time?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
Thank you very much for your cooperation in answering the questions. Do you have anything that you want to add?

SUMMARY:

Do you have any questions for me?

SUMMARY:

"Before we conclude, I would like to remind you to send us your drawing using the blank piece of paper provided. We have sent you a postage-paid return envelope for your convenience."

"Also, let's review the directions for the drawing. They are: Using the blank paper provided please draw a pictorial map of the places you visit in a typical week. Your map does not need to be an exact replica of the area as is a conventional road map. It need only be a sketch of how you view your travels. There is no time limit, and it should be possible to complete your map in about 15 minutes. You aren't expected to have an artist's talent, and there are no wrong or right ways to draw your map. However, please label all buildings, main streets, and landmarks in your pictorial map which may not be easily recognizable."

"This concludes the interview. (Pause) We will also be sending you two short questionnaires to fill out at your leisure. If you have any questions about this research or the questionnaires, please feel free to contact us. We have included our number in the materials sent to you. Goodbye."

A.M.

RECORD END TIME: __:__ P.M.
POST-INTERVIEW QUESTIONS TO BE ANSWERED BY INTERVIEWER:

In general, was the respondent’s attitude toward the interview:  (Please circle one)

Friendly and eager  Cooperative, but not eager
Indifferent, bored  Hostile, angry

Did the respondent have difficulty at times understanding or comprehending the questions?  [For example, did you have to repeat questions; respond to their queries; get answers that seemed to indicate confusion.]  (Please circle one)

Very Often  Fairly Often  Sometimes  Almost Never  Never

Which questions were especially difficult for the respondent to answer?  [BE SPECIFIC]

Other "observations" about respondent?