Supervisory Committee

Stages of Driving Behaviour Change within the Transtheoretical Model (TM)

by

Kristina Anne Kowalski
B.Sc., University of Waterloo, 2005

Supervisory Committee

Dr. Holly A. Tuokko, (Department of Psychology)
Supervisor

Dr. Catherine A. Mateer (Department of Psychology)
Departmental Member

Dr. Ryan E. Rhodes (Department of Physical Education)
Outside Member
Abstract

The older adult population and the number of older adults who rely primarily on driving as their means of transportation in later life are increasing. Older adults experience changes due to aging and age-related diseases that may put them at increased risk of crashes and other unsafe driving behaviours. Considerable evidence has demonstrated that some older adults compensate for their declining abilities by voluntarily restricting their own driving to limit exposure to risky driving situations or by stopping driving altogether. Since mobility is critical for maintaining the independence and quality of life of the older adult, it is important to examine factors that influence driving behaviours of older adults and to promote their safe driving for as long as possible. It has been suggested that driving cessation might occur in discrete stages of driving restriction culminating in driving cessation. Yet, the application of TM to older driver behaviour has not been explored in detail. Thus, the purpose of this research was to explore older adults’ perceptions and experiences of the process of older driver behaviour change within the TM framework. Drivers and former drivers (both men and women) aged 71-94 years of age completed a health and demographic questionnaire and participated in either a digitally recorded semi-structured individual interview or a group discussion. Participants were asked a series of pre-determined questions and probes tailored for either current or former drivers to examine this process. The recordings were transcribed and
reviewed for themes related to driving behaviour change. The participants exhibited a wide variety of perceptions and experiences related to the process of driving behaviour change in aging. Their driving behaviour in aging could be divided into 2 general classes: those who changed their driving with age and those who did not. The spectrum of experiences ranged from those who gradually imposed restrictions on their driving with age (“the gradual restrictors”) or made plans for stopping (“the preparers”) to those who always employed driving restrictions throughout their driving history (“the consistent”) or those who made no or only minor changes to their driving behaviour with age (“the non-changers”). Some preliminary support for TM within the driving context was found and recommendations for extensions to the TM model were suggested. Further exploration of driving behaviour change within the TM framework is warranted. The findings from this study may be appropriate for use in designing educational strategies and interventions aimed at helping older adults remain on the road safely longer or stop driving, if needed.
Table of Contents

Supervisory Committee ...................................................................................................... ii

Abstract ................................................................................................................................ iii

Table of Contents ................................................................................................................. v

List of Tables ....................................................................................................................... x

List of Figures ................................................................................................................... xii

Acknowledgments ........................................................................................................... xiii

Dedication ........................................................................................................................ xiv

Chapter 1: Introduction .................................................................................................... 1

Study Background and Rationale .................................................................................. 1

Theoretical Framework of the Study: The Transtheoretical Model of Behaviour Change .......................................................................................................................... 4

Critique of the Transtheoretical Model of Behaviour Change ........................................ 9

Purpose of the Study ................................................................................................... 12

Research Questions ..................................................................................................... 14

Definition of Terms ..................................................................................................... 14

The Researcher’s Conceptualization of Older Driver Behaviour Change within TM Prior to Study Outset ........................................................................................................... 15

Chapter 2: The Literature Review ................................................................................. 18

Types of Driving Restrictions ..................................................................................... 18

Factors Associated with Driving Restriction and Cessation ........................................ 19

Reasons Given by Older Adults for Driving Restriction and Cessation ..................... 21
Consequences of Driving Cessation ................................................................. 22
Theoretical Frameworks Applied to Driving Behaviour Change ................. 24
Application of the Transtheoretical Model of Behaviour Change to Older Drivers... 30

Chapter 3: Methods .............................................................................................. 33
Participants ........................................................................................................... 33
Characteristics of the Overall Sample ............................................................... 35
Characteristics of the Sample by Type of Data Collection .......................... 37
Procedures ........................................................................................................... 37
Data Analysis ...................................................................................................... 53
Background Questionnaire .............................................................................. 53
Qualitative Data: Steps in Data Analysis ....................................................... 53
Qualitative Data: Scientific Integrity ............................................................... 57

Chapter 4: Quantitative Results ........................................................................... 60
License Status ...................................................................................................... 60
Age Started Driving ............................................................................................ 61
Driving Restriction ............................................................................................... 63
Driving Courses .................................................................................................. 65
Frequency and Length of Trips by Driving Status ........................................ 67
Age Stopped Driving ........................................................................................... 72
Health .................................................................................................................. 74

Chapter 5: Qualitative Results ............................................................................ 80
Research Question 1: Are there typical patterns or sequences of driving restrictions that precede driving cessation in older adults? If so, do they fit within TM? .......... 80
Are there typical patterns or sequences or driving restrictions that precede driving cessation in older adults? ................................................. 80

Avoidance of Difficult Driving Situations................................................................. 81
Other Self-imposed Restrictions ........................................................................... 85
Conservative Driving Strategies .......................................................................... 88
Classes of Driving Behaviour Change.................................................................. 89

Research Question 1b: If so, do they fit within the TM framework? ....................... 96

Weighing the Pros and Cons of Stopping Driving.................................................. 97
Awareness ............................................................................................................... 100
Thoughts about Stopping ...................................................................................... 107
Other TM Components ......................................................................................... 111

Research Question 2: Why do older adults restrict their driving or stop driving altogether? ........................................................................................................ 113

Reasons for Avoiding Difficult Driving Situations .............................................. 114
Reasons for Other Self-Imposed Restrictions....................................................... 115
Reasons for Stopping Driving Altogether............................................................. 117

Research Question 3: How do the reasons older adults give for restricting and stopping driving relate to specific patterns of driving restriction and driving cessation? ......................................................................................... 120

Chapter 6: Discussion ...................................................................................................... 121

Research Question 1a: Are there typical patterns or sequences of driving restrictions that precede driving cessation in older adults? ................................................. 121
Research Question 1b: If so, do they fit within the TM framework? ....................... 124
1. Individuals who Changed Their Driving as They Aged ................................. 124

2. Individuals who did not Change their Driving as They Aged ....................... 125

Weighing the Pros and Cons of Stopping Driving.............................................. 128

Awareness ........................................................................................................... 129

Thoughts about Stopping .................................................................................... 130

Other TM Components ....................................................................................... 131

General Discussion ............................................................................................. 132

Do Other Models Provide a Better Account of the Observed Results? ........... 133

Research Question 2: Why do older adults restrict their driving or stop driving altogether? ................................................................................................................. 134

Research Question 3: How do the reasons older adults give for restricting and stopping driving relate to specific patterns of driving restriction and driving cessation? ................................................................................................................. 136

Additions to TM Model to Account for the Process of Driving Restriction and Cessation in Older Adults ................................................................. 137

Study Limitations .................................................................................................. 142

Future Directions .................................................................................................. 144

References ................................................................................................................ 147

Appendices ................................................................................................................ 163

Appendix A: Review of the Existing Literature on Driving Restriction and Cessation in Older Adults ................................................................. 164

Appendix B: Recruitment Materials ....................................................................... 202

Media Tip 1 ......................................................................................................... 202
<table>
<thead>
<tr>
<th>Media Tip 2</th>
<th>203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Poster</td>
<td>204</td>
</tr>
<tr>
<td>Focus Group Poster</td>
<td>205</td>
</tr>
<tr>
<td>Radio Announcement</td>
<td>206</td>
</tr>
<tr>
<td>Newspaper Advertisements</td>
<td>207</td>
</tr>
<tr>
<td>Appendix C: Telephone Script</td>
<td>208</td>
</tr>
<tr>
<td>Appendix D: Transportation and Parking</td>
<td>209</td>
</tr>
<tr>
<td>Transportation to the Study</td>
<td>209</td>
</tr>
<tr>
<td>University for Victoria Map</td>
<td>211</td>
</tr>
<tr>
<td>Appendix E: Focus Group Materials</td>
<td>212</td>
</tr>
<tr>
<td>Introduction to Focus Group Discussion</td>
<td>212</td>
</tr>
<tr>
<td>Introduction to Interview</td>
<td>213</td>
</tr>
<tr>
<td>Appendix F: Consent Forms</td>
<td>214</td>
</tr>
<tr>
<td>Focus Group Consent Form</td>
<td>214</td>
</tr>
<tr>
<td>Individual Interview Informed Consent</td>
<td>217</td>
</tr>
<tr>
<td>Appendix G: Ethics Certificates and Amendments</td>
<td>220</td>
</tr>
<tr>
<td>Copy of Ethics Approval</td>
<td>220</td>
</tr>
<tr>
<td>Copy of June 23rd, 2006 Amendment</td>
<td>221</td>
</tr>
<tr>
<td>Copy of July 19th, 2006 Amendment</td>
<td>224</td>
</tr>
<tr>
<td>Demographic and Health Questionnaire (Current Drivers)</td>
<td>227</td>
</tr>
<tr>
<td>Demographic and Health Questionnaire (Former Drivers)</td>
<td>229</td>
</tr>
<tr>
<td>Appendix I: Additional Support for Themes Presented in Chapter 5: Qualitative Results</td>
<td>232</td>
</tr>
</tbody>
</table>
List of Tables

Table 3-1: Basic Demographic Information of the Current and Former Drivers .......... 36
Table 3-2: Current Driver Focus Group and Interview Guideline .................................. 42
Table 3-3: Former Driver Focus Group and Interview Guideline .................................. 48
Table 4-1: Licence by Driver Status ................................................................................. 61
Table 4-2: Age Started driving by Driving Status ............................................................ 62
Table 4-3: Comparison of Current and Former Driver’s Age Started Driving .............. 63
Table 4-4: Frequency of Restriction ................................................................................. 64
Table 4-5: Frequency of Driving Courses by Driving Status ........................................... 66
Table 4-6: Comparison of Current and Former Driver Participation in Driving Courses 67
Table 4-7: Weekly Driving Frequency and Length of Trips by Driving Status ............... 69
Table 4-8: Time Since Cessation ...................................................................................... 73
Table 4-9: Self-Reported Health by Driving Status .......................................................... 75
Table A - 1: Percentage of Respondents Giving Different Reasons for Driving
Restriction in Existing Research.......................................................................................... 164
Table A - 2: Percentage of Former Giving Reasons for Driving Cessation in Existing
Research............................................................................................................................... 173
Table A - 3: Summary of Consequences of Driving Cessation in the Existing Literature
.............................................................................................................................................. 193
Table I - 1: Avoiding Difficult Driving Situations ............................................................ 232
Table I - 2: Other Self-Imposed Driving Restrictions ....................................................... 242
Table I - 3: Conservative Driving Strategies .................................................................... 249
Table I - 4: Examples of “Gradual Restrictors” .............................................................. 266
Table I - 5: Examples of “Preparers” .............................................................................. 271
Table I - 6: Examples of “Non-Changers” ...................................................................... 272
Table I - 7: Examples of the “Consistent” ......................................................................274
Table I - 8: Consideration of the Pros and Cons of Stopping Driving by Former Drivers who Stopped Driving Voluntarily ................................................................. 280
Table I - 9: Consideration of Pros and Cons by Current Drivers.................................... 285
Table I - 10: Awareness of Current Drivers.................................................................... 287
Table I - 11: Awareness of Former Drivers who Stopped Driving Voluntarily ............ 291
Table I - 12: Awareness of Former Drivers who Stopped Driving Involuntarily .......... 297
Table I - 13: Current Drivers’ Thoughts about Stopping Driving .................................. 303
Table I - 14: Thoughts about Stopping from Former Driver’s who Stopped Driving Voluntarily .............................................................. 308
Table I - 15: Thoughts about Stopping Driving from Former Drivers who Stopped Driving Involuntarily .............................................................. 314
Table I - 16: Reasons Given by Current and Former Drivers for Driving Restrictions included in the Avoidance of Difficult Driving Situations Category ............................. 316
Table I - 17: Reasons Given by Current and Former Drivers for Driving Restrictions in the Other Self-Imposed Restrictions Category ......................................................... 336
Table I - 18: Reasons Reported by Former Drivers for Stopping Driving Altogether ... 355
List of Figures

Figure 1-1: Conceptualization of the Process of Driving Behaviour Change at Study Outset ........................................................................................................................................ 17

Figure 6-1: Conceptualization of the Process of Driving Behaviour Change after Study Completion ............................................................................................................................... 141
Acknowledgments

I would like to express my sincere thanks to my mentor, Dr. Holly Tuokko, for providing me with encouragement and support. Her valuable insight, expertise and advice made completion of my thesis possible. I would also like to thank my thesis committee, Dr. Ryan Rhodes and Dr. Catherine Mateer, for their direction, time commitment, and wealth of knowledge.

I would also like to acknowledge, my mother, Linda Kowalski, my father, Edmund Kowalski, and my twin sister, Andrea Baker, who provided me with unwavering love, understanding and support. I am incredibly thankful that they inspired me to dream and taught me to work hard towards reaching my goals. Without them I would not have grown to be the person I am today.

I am greatly indebted to my roommate, Kristi Fox, who has been very supportive and a dear friend, despite having to put up with me talking non-stop about my thesis for months. I would also like to thank my friends, colleagues and professors who have helped me grow and have contributed a great deal to my learning process.

I would also like to express a heartfelt thanks to all the older adults who participated in this research. I am extremely appreciative for their time commitment and their willingness to share their perspectives and driving experiences. Hearing about their driving histories was truly fascinating and enhanced my learning experience a great deal.
Dedication

This work is dedicated to Andrea and Dwight’s young boys, Ethan Alexander and Brayden Christopher Baker, who through their youth and innocence have provided my greatest inspiration. With your whole lives ahead of you, there is no limit to where your dreams can take you.
Chapter 1: Introduction

Study Background and Rationale

Mobility is critical for maintaining the health, mental health, independence, and quality of life of older adults (e.g., Azad, Byszewski, Amos, & Molnar, 2002; Rosenbloom, 2004; Vance et al., 2006). Driving continues to be the most popular means of transportation used by older adults in North America (Collia, Sharp, & Giesbrecht, 2003; Kostyniuk & Shope, 2003), even though its frequency decreases after retirement (Raitanen, Törmäkangas, Mollenkopf, & Marcellini, 2003). Adults aged 65 years and older are one of the fastest growing segments of the Canadian population (Turnbull & Mackenzie, 1997). In 2001, there were approximately 3.92 million Canadians 65 years of age and older (Health Canada, 2002). The proportion of Canadians in this age group has grown from 1 in 20 in 1921 to 1 in 8 in 2001, and is expected to reach 1 in 4 by 2041 (Health Canada, 2002). Along with this growth, there has been a corresponding increase in the number of licensed older drivers (Turnbull & Mackenzie, 1997), and it is expected that this number will continue to rise (Bess, 1999).

With the steady increase in both the aging and the older driver populations, concern for the safety of older Canadian drivers is mounting. Many studies have shown that accidents per mile driven increase with age (Rizzo, McGehee, Dawson, & Anderson, 2001; Stutts & Wilkins, 2003), especially after 80 years of age (Ontario Ministry of Transportation, 2004; Turnbull & Mackenzie, 1997). Although older adults aged 65 years of age or older have a high collision rate per miles driven, it is not the highest. Young
drivers aged 24 years of less have an even greater crash risk per miles driven (Marshall, Man-Son-Hing, Molnar, Wilson, & Blair, 2007). However, older adults appear to be more vulnerable than younger segments of the licensed population. When compared to younger adults, older adults have a greater risk of being seriously injured, killed or hospitalized (Distiller & Kramer, 1996; Turnbull & Mackenzie, 1997), and they have more difficulty recovering (Dobbs, 2000). The injury and death rates related to motor vehicle crashes of the entire population are declining, but those for adults aged 65 years of age and older continue to rise (Messinger-Rapport, 2002; Ontario Ministry of Transportation, 2004). In addition, aging, both healthy and pathological, is associated with declines in sensory/perceptual, physical/psychomotor and cognitive abilities that may compromise one’s ability to drive safely (Anstey, Wood, Lord, & Walker, 2005; Eby, Trombley, Molnar, & Shope, 1998).

In the sensory/perceptual domain, age is associated with numerous visual impairments (e.g., decreased visual acuity, contrast sensitivity, visual fields, and visual perception, and increased glare sensitivity; Eby et al., 1998), and with an increased prevalence of visual conditions (e.g., glaucoma, macular degeneration; Crocker Houde & Huff, 2003; Klavora & Heslegrave, 2002) that may negatively affect driving performance. In addition, age-related changes in physical/psychomotor abilities, such as reduced flexibility/range of motion, decreased strength, psychomotor slowing, and coordination, may also adversely impact driving ability (e.g., Anstey et al., 2005; Eby et al.; Marottoli et al., 1993; Ostrow, Shaffron, & McPherson, 1992; Stelmach & Nahom, 1992; Tarawneh, McCoy, Bishu, & Ballard, 1993). In the cognitive domain, age and age-related disease (e.g., dementia, mild cognitive impairment) are associated with declines in
cognitive abilities, such as attention, executive function, processing speed, memory, and visuospatial skills (e.g., Anstey et al.; Eby et al.; Lloyd et al., 2001) that may also influence driving ability. Studies of specific sensory/perceptual, physical/psychomotor and cognitive declines and on-road driving and crash involvement have been inconsistent. For example, several studies have shown that impaired executive function (e.g., higher order cognitive functions necessary for effective and context-appropriate behaviours, such as initiation, planning, hypothesis generation, cognitive flexibility, judgment; Spreen & Strauss, 1998) is associated with crash involvement and driving errors (e.g., Daigneault, Joly, & Frigon, 2002; Lesikar, Gallo, Rebok, & Keyl, 2002; Richardson & Marottoli, 2003), while others have not (e.g., Marottoli et al., 1998).

Despite their increased crash risk and age-related declines, many older adults remain safe drivers. In fact, older adults, if aware of their declining abilities, may compensate for their deficits by restricting their driving, avoiding difficult driving, or by stopping driving altogether. It has been found that many older adults self-impose restrictions on their driving (e.g., Charlton et al., 2003; Satariano, MacLeod, Cohn, & Ragland, 2004) or stop driving of their own accord (e.g., Brayne et al., 2000). Existing literature also suggests that some older adults may be unaware of their declining abilities may not restrict their driving appropriately (Pachana & Petriwskyj, 2006; Cotrell & Wild, 1999; Freund & Szinovacz, 2002). In addition, some research has shown that some older adults surrender their licenses prematurely. For example, Stutts, Wilkins, Reinfurt, Rodgman, & Van Heusen-Causey (2001) found that, when asked whether they felt they had stopped driving at the right time, almost one third of their former drivers reported that they had stopped driving earlier than they should have. This is concerning given the
association between driving cessation and a number of negative consequences, including limited independence, mobility and decreased out of home activities (Marottoli et al., 2000; Marottoli et al., 1997). To maintain mobility, an important factor in the health of older Canadians, it is important to help them stay on the road safely for as long as possible. It has been suggested by some that one way to reduce their crash risk and to keep them driving safely longer is to encourage older adults to self-regulate (e.g., impose restrictions on) their driving (Baldock, Mathias, McLean, & Berndt, 2006a).

**Theoretical Framework of the Study: The Transtheoretical Model of Behaviour Change**

One stage theory, the Transtheoretical Model of Behaviour Change (TM; Prochaska & Velicer, 1997) has been applied to many health behaviours, including smoking cessation, regular healthy eating, regular exercising, mammography screening, and substance abuse, to name a few. Only recently has it been suggested that the process of driving cessation (e.g., the self-regulation of driving behaviour) may fit within the stages of change framework (Tuokko, McGee, & Rhodes, 2006; Sterns, Sterns, Aizenberg, & Anapole, 2001).

TM is the theoretical framework from which this study was designed. It is popular model of behaviour change from health promotion literature and is typically composed of five stages of behaviour change, including precontemplation, contemplation, preparation, action and maintenance, that are defined by intention to change (behavioural intention) and behaviours related to the problem behaviour (Prochaska & DiClemente, 1982; Prochaska & Velicer, 1997; Velicer, Norman, Fava, & Prochaska, 1999). In this model,
behaviour change is therefore seen as a process (a series of stages) rather than a single event (Cancer Prevention Research Center, n.d.; Redding, Rossi, Rossi, Velicier, & Prochaska, 2000). The model focuses on the individual’s decision making processes, rather than on the social or biological factors that might influence a person’s behaviour (Cancer Prevention Research Center). Individuals in **precontemplation** are not intending to change in the near future and typically, are unaware/under-aware of the problem and resistant or unmotivated to change (Prochaska & DiClemente; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicier, 1997). In the **contemplation** stage, individuals are intending to change in the future and are aware of the problem, but they have not committed to changing the behaviour (Prochaska & DiClemente; Prochaska et al.; Velicier et al.). Contemplators struggle with weighing the pros and cons of the problem and the solution (Prochaska et al.). Individuals in the **preparation** stage, not only intend to change in the immediate future, but they are also making small behavioural changes (Prochaska & DiClemente; Velicier et al.). In the **action** stage, individual are currently in the process of changing their problem behaviour (e.g., taking overt action; Prochaska & DiClemente). In the **maintenance** stage, individuals have changed and are trying to prevent relapse (Prochaska & DiClemente). Depending on the problem health behaviour the TM has been applied to a variety of timelines for the stages has been used. For example, in smoking cessation six months is typically used for the timeline of not intending to change in the foreseeable future (e.g., precontemplation; Prochaska & Velicier).

The current conceptualization of TM also accounts for relapse or regression into the problem behaviour (e.g., return from action or maintenance to earlier stages; Cancer
Prevention Research Center, n.d.; Prochaska et al., 1992; Prochaska & Velicier, 1997). Thus, individuals in the process of changing their problem behaviour will most likely cycle through the stages several times before they are able to maintain their behaviour change. According to TM individuals who are regressing do not return completely to where they began (e.g., prior to changing their behaviour; Prochaska et al.). This is known as the spiral model of the stages of change (Prochaska et al.). Thus, behaviour change is not seen as occurring in a linear sequence of stages (Littell & Girvin, 2002; Redding et al., 2000), but it is seen as discrete/mutually exclusive stages and said to occur in an invariable sequence without stage skipping (Littell & Girvin; Prochaska, DiClemente, & Norcross, 1992; Redding et al.; Velicier et al., 1999). A sixth stage, termination, is also sometimes included in the stages of change. Individuals in the termination stage, an ideal, but unlikely goal for most, have zero temptation to engage in the problem behaviour and 100 percent confidence that they can cope with high risk situations without regressing into the problem health behaviour (Prochaska et al.).

A second important dimension of the TM model is the independent variables known as change processes, which can be defined as overt and covert activities and experiences that individuals use to advance through the stages (Prochaska et al., 1997). According to Redding et al. (2000) change processes are the cognitive, emotional, behavioural and interpersonal strategies that an individual uses to change their problem behaviours. Research support has been found for ten change processes:

1) Consciousness raising (e.g., increased awareness; finding/learning new ideas, facts and tips that support changing the problem behaviour);
2) **Dramatic relief** (e.g., experience and expression of negative feelings about the problem behaviour);

3) **Self-reevaluation** (e.g., cognitive and affective assessment of self-image with respect to problem behaviour);

4) **Environmental reevaluation** (e.g., cognitive and affective assessment of the impact of the problem behaviour and changing the problem behaviour on one’s social/physical environment);

5) **Self-liberation** (e.g., belief in one’s ability and commitment to change);

6) **Social liberation** (e.g., increasing availability of non-problem behaviour alternatives; realization that social norms support changing the problem behaviour);

7) **Counter-conditioning** (e.g., learning alternative behaviours and cognitions for the problem behaviour);

8) **Stimulus control** (e.g., restructuring one’s environment/removing cues for the problem behaviour and adding cues for the healthy behaviour);

9) **Contingency/reinforcement management** (e.g., decreasing consequences/increasing rewards for making changes to problem behaviour and increasing consequences/decreasing rewards for maintaining the problem behaviour); and

10) **Helping relationships** (e.g., seeking out open, trusting and supportive relationships; Prochaska & Velicier; Redding et al., 2000; Velicier et al., 1999).
TM research also suggests that experiential processes (e.g., more internal experiences), like consciousness raising, dramatic relief, and self-reevaluation, are applied more by people in earlier stages; while, behavioural processes (e.g., more overt activities), like stimulus control, contingency management, and helping relationships, are applied more by individuals in later stages of behaviour change (Prochaska & Velicer; Velicer et al.).

Other independent variables, that the TM model takes into account, include other variables in the **internal and external environments specific to the problem behaviour** (Velicier, Rossi, Prochaska, & DiClemente, 1996). According to Velicer et al. (1996), the internal environment includes personality, cognitive abilities, financial resources, and personal history that might affect the problem area; while, the external environment includes interventions directed at the problem behaviour, and changes in the natural environment (e.g., policy change) or the interpersonal environment.

The last important dimension of the model is composed of the criterion measures, including decisional balance, self-efficacy, temptation and behaviours specific to the problem area (Velicier et al., 1996). **Decisional balance** involves weighing the pros and cons of changing the problem behaviour. Based on findings from 12 studies, Prochaska and Velicer (1997) suggested that progression from precontemplation to contemplation requires the pros of changing the problem behaviour to increase and that progression from contemplation to action requires the cons of changing the problem behaviour to decrease. The other two criterion measures relate to regressing back into the problem behaviour. **Self-efficacy** is defined as situation specific confidence in the ability to manage high risk situations without relapsing into the high risk habit; while, **temptation**
is defined as the intensity of the urges associated with problem behaviour (Prochaska & Velicer).

**Critique of the Transtheoretical Model of Behaviour Change**

Despite its widespread use and continued popularity in health promotion research, TM has received considerable criticism. For example, Bandura (1998), who comes at health behaviour change from the perspective of Social Cognitive Theory, is one of the strongest critics of TM. One of the key criticisms that he and others raise is that imposing artificial categories or stages on a continuous behaviour oversimplifies the complexities of human behaviour (e.g., Bandura; Littell & Girvin, 2002; West, 2005; Bunton, Baldwin, Flynn, & Whitelaw, 2000). Bandura argues that “human functioning is too multifaceted and multidetermined to be shrunk into a few discrete stages” (1998, p.9). He criticizes TM for not being a genuine stage theory because the stages are based on subdivisions of gradation or degree, rather than of differences in kind. In addition, Bandura argues that genuine stage theories require invariant sequence of stages and irreversibility. In support of the view that TM is not a genuine stage theory, one review of the empirical evidence suggests that the stages are not mutually exclusive and that evidence of ordered, cyclical progression through the stages has not been found (Littell & Girvin).

Little and Girvin (2002) also point out that feelings associated with the problem behaviour and changing it most likely influence readiness to change and the actual change process; however, TM puts little weight on affective states. West (2005) also criticizes TM for focusing on conscious decision making, but failing to account for other
important non-conscious aspects of human motivation (e.g., reward, punishment). In addition, it has been argued that people fluctuate or do not show stable progression through the sequences (e.g., quitting the behaviour abruptly rather than gradually making plans; instability in intentions to change; Bandura; West). Bandura also argues that people do not fit neatly into predetermined categories and that the stages are purely descriptive rather than explanatory, and therefore of little utility (Bandura, 1998).

According to this view, the stages classify individuals, but do little to explain how and why individuals change or do not change their problem behaviours. Proponents of the model argue that the components of TM other than the stages, such as the change processes, decisional balance, and self-efficacy, help to determine how people change (e.g., progress through the stages; Bunton et al., 2000; Prochaska & Velicier, 1997).

In addition, although proponents of the model portray TM as more effective than traditional action oriented treatments for problem health behaviours, many critics have noted that there is very little sound, empirical research demonstrating the efficacy of the TM approach (e.g., outcome evaluations, randomized control trials, comparative treatment evaluations, controlled trials, prospective studies, and pre and post evaluations of predictive qualities of stages of change; Bunton et al., 2000; Whitelaw, Baldwin, Bunton, & Flynn, 2000). In fact, Little and Girvin (2002) point out that much of the supporting evidence for the model comes from the creators of the model themselves. West (2005) argues that the flaws in the model are so problematic that it should be completely abandoned; whereas, others argue for the need for more critical review and sound research (Bunton et al.). However, recently considerable support for stage-matched TM based interventions has been found in exercise literature using randomized control
trials (Blissmer & McAuley, 2002; Jackson, Asimakopoulou, Scammell, 2007; Marcus et al., 1998; Peterson & Aldana, 1999; Woods, Mutrie, & Scott, 2002). For example, in one study it was found that both stage-matched and standard care interventions promoted greater physical activity levels than both stage-mismatched and control interventions. Other physical activity research has shown that stage matched interventions are superior to standard care interventions (Peterson & Aldana; Marcus et al.).

In response to the debate over the defining characteristics of stages and how to measure them, Weinstein and Rothman (1998) note that stage theories may fail because the process does not occur in stages, or because the stages or barriers between stages are not assessed or identified correctly. TM, despite its highly debated issues, is intuitively appealing, provides a useful heuristic on which to organize this study, and as Weinstein and Rothman (1998) note, stage models allow for the possible creation of interventions targeted at specific stages that might be more effective than a one-size fits all intervention. For further discussion of these issues the reader is directed to reviews by Button et al. (2000), Littell and Girvin (2002), and Weinstein and Rothman (1998).

As noted above, TM has been heavily criticised for the artificial staging of continuous health behaviours (e.g., healthy eating, regular exercise; Bandura, 1998). Since it appears that the process of driving cessation may involve more discrete stages than the behaviours to which TM is typically applied, it has been suggested that the process of driving behaviour change in older adults might be less susceptible to this potential confound and therefore, a more appropriate application of TM (Tuokko et al., 2006; Tuokko & Kowalski, In Press). For example, restricting one’s driving to daylight and stopping driving are clearly distinct (Tuokko et al.; Tuokko & Kowalski, In Press).
It should also be noted that the possibility exists that some of the components of TM will not be related to driving. For example, temptation, or the urges to return to the problem behaviour, may be an issue for some former drivers; while, for others it may be entirely appropriate to resume driving again (e.g., individual who stopped prematurely, the medical condition that lead to stopping driving resolves).

**Purpose of the Study**

This study is the first phase in an on-going mixed methods series of studies involving an instrument building design (Creswell, 1999, 2003). A qualitative approach was chosen because the final intent of this two phased approach is develop a questionnaire on stages of driving behaviour change that reflects the perceptions and experiences of current and former older drivers for whom the instrument is being designed (Creswell, 1999, 2003). Thus, it is anticipated that the themes and patterns identified in this study will be used to develop and design a questionnaire. Beginning this instrument building study with a qualitative phase has the advantage of generating a questionnaire that is informed by both older current and former drivers and by related research. Focus groups have been used to develop questionnaires in an increasing number of studies including studies of health and aging (e.g., Padula et al., 2002; Sarkisian, Hays, Berry, & Mangione, 2002).

The primary purpose of the current study was to explore older adults’ perceptions and experiences of the process of driving behaviour change within the TM framework. To help older adults continue to drive safely longer or to decide to stop driving if appropriate, it is important to understand those factors that might influence their driving behaviours.
The study involved an in-depth qualitative examination of driving restrictions and driving cessation using a series of focus groups and semi-structured interviews with current and former drivers. The main objective of this qualitative study was to determine if there is evidence of patterns of driving restrictions that might precede driving cessation in older adults. It has been proposed by some that driving cessation might occur along a continuum of self-imposed restrictions culminating in the decision to stop driving altogether (Dellinger, Sehgal, Sleet, & Barrett-Connor, 2001; Lyman, McGwin, & Sims, 2001; West et al., 2003). In fact, some research has shown that individuals who restrict their driving believe that there will be more changes to their driving in subsequent years and that driving cessation is an increasing likelihood (Fonda, Wallace, & Herzog, 2001; Ruechel & Mann, 2005). However, the process and possible patterns of driving restrictions that might precede driving cessation in older adults has yet to be examined. Although it has been suggested that applying TM to older driver behaviour change might be appropriate and warrant further study (Tuokko et al., 2006; Sterns et al., 2001), to the researcher’s knowledge this application of TM to older driver behaviour also has not been explored in detail. Much of the research has focused on self-reported reasons for and predictors of driving restrictions and cessation. If driving behaviour change is found to occur in stages of driving restrictions preceding driving cessation, it may be possible to design educational strategies and interventions aimed at the specific needs of older adults at different stages along this continuum.

Thus, this qualitative study was conducted with the TM perspective in mind from the outset of the study. The TM framework was chosen, instead of other theoretical models (e.g., the Precaution Adoption Process Model (PAPM), Transitional theories),
because it has many well described, testable components (e.g., stages, internal and external factors, decisional balance) which are particularly useful in the driving context. The application of TM and other theoretical frameworks to driving will be discussed in more detail in Chapter 2: The Literature Review.

**Research Questions**

The primary research question was: Are there typical patterns or sequences of driving restriction that precede driving cessation in older adults and if so, do they fit within the TM framework? The study had two secondary research questions: 1) Why do older adults restrict their driving or stop driving altogether? and 2) How do the reasons older adults give for restricting and stopping driving relate to specific patterns of driving restriction and driving cessation?

**Definition of Terms**

1. **Self-Regulation of Driving Behaviour** refers to the ability to self-monitor driving ability and to adjust one’s driving behaviour accordingly (Balock, Mathias, McLean, & Berndt, 2006b). Others have referred to these self-initiated, voluntary changes in driving behaviour as compensatory driving behaviours (Pachana & Pertriwskyj, 2006).

2. **Self-Imposed Driving Restrictions** refers to limiting or avoiding particular driving situations. They are strategies that a person imposes on his or her own driving. This is in contrast to licensing restrictions (e.g., imposed restrictions). Imposed
restrictions will not be discussed in this thesis; thus, from this point forward, self-imposed driving restrictions will be shortened to driving restrictions.

3. *Driving cessation* refers to stopping driving altogether.

In this thesis, the terms driving restriction and driving self-regulation are not used interchangeably. Older adults may impose restrictions on their driving for reasons related to themselves (e.g., declining sensory, physical, cognitive and psychological factors that might compromise safe driving ability), to the environment (e.g., environmental impact, lifestyle changes, financial factors, road conditions, other drivers), or to the interaction between themselves and the environment (Tuokko & Kowalski, In Press). In contrast, self-regulation of driving, as defined by Baldock et al. (2006b) relates to recognizing and then compensating for declining driving ability and age-related declines that might influence an older adult’s driving ability (e.g., characteristics of the person).

**The Researcher’s Conceptualization of Older Driver Behaviour Change within TM Prior to Study Outset**

It is also helpful to understand how the researcher conceptualized the process of driving restriction and cessation within the TM framework prior to the qualitative data collection and analysis. A visual presentation of this initial conceptualization is shown in Figure 1-1. As this figure demonstrates, the researcher initially believed that an older driver would proceed through the following series of TM stages:

1. Driving without self-imposed restrictions and not intending on restricting or stopping driving in the near future (*Precontemplation*).
2. Driving without self-imposed restrictions, but intending on restricting or stopping driving in the future (Contemplation).

3. Limiting (but not complete avoidance of) driving in certain situations and intending on stopping driving in the near future (Preparation).

4. In the process of stopping driving (e.g., driving with restrictions/avoiding certain situations; Action).

5. Driving cessation (Maintenance).

The difference between the preparation and action stages was felt to reflect the number of restrictions, as well as the severity of the restrictions (e.g., more restrictions and complete avoidance rather than limiting exposure to certain situations). As figure 1 - 1 shows it was felt that typical patterns of driving restriction culminating in cessation would be seen within the preparation and action stages. It was also felt that awareness of declining abilities and associated risk would be required to progress through these stages. It was also thought that progression through the stages would involve weighing the positives and the negatives of both changing driving and maintaining the driving without change.
Figure 1 -1: Conceptualization of the Process of Driving Behaviour Change at Study Outset

- Awareness of need to change driving
- Increased pros and decreased cons of restricting/stopping
- Decreased pros and increased cons of maintaining driving without restriction

Driving cessation

Driving with restrictions/avoiding certain situations: In the process of restricting or stopping driving

Limiting driving in certain situations: Intending on stopping driving in the near future

Driving without self-imposed restrictions: Intending on restricting or stopping driving in the future

Driving without self-imposed restrictions: Not intending on restricting or stopping driving in the near future

Typical patterns of restriction preceding cessation
Chapter 2: The Literature Review

There have been numerous studies investigating driving-related issues in older adults. The main foci of this research have related to driving performance and to driving-related outcomes (e.g., crash involvement, self-imposed driving restrictions and driving cessation) in older adults. The literature relevant to driving behaviour change in older adults has focused on the types of driving restrictions, the factors and self-reported reasons associated with driving restriction and cessation, and the consequences of driving restriction and cessation. Only a few studies have investigated the actual process (e.g., how and when, in addition to why) of driving cessation in older adults. Another area of research that has been emerging in the more recent scientific literature is the application of theoretical frameworks to the process of driving cessation. Each of these relevant driving restriction and cessation topics will be briefly reviewed next.

Types of Driving Restrictions

As previously mentioned, it has been found that some older adults restrict their driving by limiting or avoiding specific driving situations. Even though a large portion of participants in some studies report restricting their driving (e.g., Ruechel & Mann, 2005), in other studies the majority of participants indicate that they never avoid specific driving situations (e.g., Baldock et al., 2006a; Baldock et al., 2006b; Charlton et al., 2003; Stalvey & Owsley, 2000). The most common situations older adults report avoiding are driving at night (Ball et al., 1998; Charlton et al.; Kostyniuk, Shope, & Molnar, 2000b) and driving at night in the rain/when wet (e.g., Baldock et al., 2006a; Baldock et al., 2006b; Charlton et al.). Older adults also commonly report avoiding other driving
situations, including: driving in bad weather (e.g., Ball et al.; George, Clark, & Crotty, 2006; Rimmö & Hakamies-Blomqvist, 2002; Stutts, 1998); driving in rush hour or heavy traffic (e.g., Ball et al.; George et al.; Rimmö & Hakamies-Blomqvist; Stutts); driving in unfamiliar areas (e.g., Charlton et al.; Raitanen et al., 2003); driving on highways/high speed roads (e.g., Charlton et al.; Ruechel & Mann; Stutts); making left turns/uncontrolled intersections (e.g., Ball et al.; George et al.; Holland & Rabbitt, 1994); and parallel parking (e.g., Baldock et al., 2006a; Baldock et al., 2006b). Restricting driving to necessary activities (George et al.; Oxley, Charlton, Fildes, Koppel, & Scully, 2004) and reducing speed (e.g., Forrest, Bunker, Songer, Coben, & Cauley, 1997; George et al.), length of driving trips (e.g., Forrest et al.; Freund & Szinovacz, 2002) and amount of driving (e.g., Charlton et al.; Kostyniuk et al.) are also fairly common in older adults. The relative frequency of driving restrictions varies across studies depending on the population being studied (e.g., healthy older adults, medical conditions, visual impairment, cognitive impairment).

Factors Associated with Driving Restriction and Cessation

It is well known that older drivers who restrict their driving are more likely to be older (e.g., Baldock, 2004; Freund & Szinovacz, 2002; Stutts et al., 2001) and female (e.g., Brabyn, Schneck, Lott, & Haegerstrom-Portnoy, 2005; Charlton et al., 2003). Many studies have also found associations between driving restrictions and visual conditions (e.g., glaucoma; Adler, Bauer, Rottunda, & Kuskowski, 2005; McGwin et al., 2004); visual problems (e.g., Charlton et al.; Keeffe, Jin, Weih, McCarty, & Taylor, 2002); poorer health (e.g., Baldock; Charlton et al.); increased prevalence of medical conditions
(e.g., Collia et al., 2003; Forrest et al., 1997); taking medications (e.g., Balock; Charlton et al.); increased functional limitations (e.g., Freund & Szinovacz; Lyman et al., 2001); decreased confidence (e.g., Balock; Charlton et al.); concerns about driving ability (e.g., Balock; Kostyniuk, Shope, & Molnar, 2000a, 2000b); and accident involvement (e.g., Ball et al.; Charlton et al.).

It is well-known that individuals who stop driving altogether are also more likely to be older (e.g., Anstey, Windsor, Luszcz, & Andrews, 2006; Brayne et al., 2000; Stutts et al., 2001) and female (e.g., Brabyn et al., 2005; Brayne et al., 2000; Campbell, Bush, & Hale, 1993). Numerous studies have shown that visual conditions (e.g., macular degeneration, retinal haemorrhaging, retinal detachment; Campbell et al.; cataracts; Marottoli et al., 1993); poorer vision (e.g., Foley, Heimovitz, Guralnik, & Brock, 2002; Marottoli et al.); poorer health (e.g., Anstey et al.; Hakamies-Blomqvist & Wahlstrom, 1998; Jette & Branch, 1992); increased medical conditions (e.g., Campbell et al.; Dellinger et al., 2001); taking medications (e.g., Gilhotra, Mitchell, Ivers, & Cumming, 2001; Oxley et al., 2004); functional limitations (e.g., Foley et al.; Marottoli et al.); concerns about driving ability/finding driving stressful (e.g., Hakamies-Blomqvist & Wahlstrom; Kostyniuk et al., 2000b); and poorer financial status (e.g., Charlton et al., 2003; Freund & Szinovacz, 2002) are associated with driving cessation.

Findings regarding relations between cognitive abilities and driving restriction and cessation have been mixed. Visual attention has consistently been associated with driving restriction and cessation (e.g., Balock, 2004; Ball et al., 1998; Stutts, 1998); in contrast, findings of the relations between driving restriction/cessation and general cognitive ability (e.g., Adler, Rottunda, & Kuskowski, 1999; Anstey et al., 2006;
Baldock; Brayne et al., 2000; Lyman et al., 2001); memory impairments (e.g., Anstey et al.; Baldock; Carr, Shead, & Storandt, 2005; Foley et al., 2002); and information processing (e.g., Anstey et al.; Baldock) have been inconsistent.

**Reasons Given by Older Adults for Driving Restriction and Cessation**

Reasons given by older adults for restricting or ceasing driving have been studied extensively. Older adults have reported a wide variety of reasons for driving restriction and driving cessation. These reasons have been classified into 11 categories: a) sensory; b) health; c) physical/functional; d) psychological, e) cognitive; f) influence from others; g) lifestyle changes/necessity; h) accidents or near misses; i) finance; j) age; and k) other (e.g., license not renewed). The percentages of older adults reporting reasons, both main and contributing factors, within these domains have varied considerably across studies. These reasons are provided in Tables A - 1 and A - 2 in Appendix A.

As Tables A - 1 and A - 2 demonstrate, visual, health, and psychological reasons, and lifestyle changes are among the most frequently reported reasons for both driving restriction and cessation. Self-reports of physical limitations as reasons for driving restriction and cessation are also fairly common; while cost, influence from others, and accidents or near misses are common self-reported reasons for driving cessation, but not for driving restriction. There were no self-reported cognitive reasons for either driving restriction or cessation identified in this review. The mixed findings may suggest that older adults have different motivations for restricting their driving than for stopping altogether. Alternatively, it may be that the process of driving behaviour change is complex and unique to each individual. It is also possible that the inconsistency within
specific categories (e.g., health, vision) and across driving-related outcomes (e.g.,
restrictions and cessation) is due to differences in the study samples (e.g., age, gender) or
methodologies (e.g., response format, specific question asked).

In several studies, current drivers reported reasons why they would consider or
know when to restrict or cease driving in the future. These studies are not included in
Tables A - 1 and A - 2. The findings from these studies suggests that older adults would
consider or know when to restrict or cease driving in response to vision, health or medical
problems, advice from others (e.g., family, friends, doctors), lost confidence or
nervousness when driving or a feeling of responsibility for others (Charlton et al., 2003;
Tuokko et al., 2006; Kostyniuk & Shope, 1998; Oxley et al., 2004).

Reasons for driving restricting and cessation have been found to vary based on
factors such as age, gender, and driving history. For example, in one study, the proportion
of individuals giving vision as their reason for driving cessation was found to increase
with age and with greater visual impairment (Keefe et al., 2002). Several studies have
found that men are more likely to give health-related reasons for driving cessation than
women (Hakamies-Blomqvist & Wahlstrom, 1998; Stutts et al., 2001). In another study,
ex-drivers with active driving histories gave significantly more health reasons for giving
up their license than the rest of the ex-drivers (Hakamies-Blomqvist & Wahlstrom).

Consequences of Driving Cessation

There is substantial literature documenting the negative consequences of driving
cessation for older adults, including limited independence and mobility (Harrison &
Ragland, 2003; Marottoli et al., 2000; Ragland, Satariano, & MacLeod, 2005), lowered
self-esteem (Horowitz, Boerner, & Reinhardt, 2002), decreased life satisfaction (Harrison & Ragland), and increased isolation, loneliness (Harrison & Ragland; Johnson, 1998), and depression (Ragland et al.). Some older adults also report positive consequences of driving cessation, including relief (Oxley et al., 2004), reduced stress, reduced costs, improved approach to life, companionship, freedom from responsibility, and increased activities (e.g., walking, activities around the house; Rosenblum & Corn, 2002).

There is evidence that older adults adjust better to the transition from driving to stopping driving altogether when the process has been gradual and planned (Charlton et al., 2003). Findings regarding whether the transition is gradual or not have been inconsistent, with many studies finding that the process is gradual for most (e.g., Bauer, Rottunda, & Adler, 2003; Dellinger et al., 2001; Hakamies-Blomqvist & Wahlstrom, 1998; Harrison & Ragland, 2003; Liddle & McKenna, 2003; Persson, 1993) and others finding that the process is abrupt for most (e.g., Adler & Kuskowski, 2003; Kostyniuk & Shope, 1998; Kostyniuk et al., 2000b; Oxley et al., 2004; Rosenblum & Corn, 2002; Stutts et al., 2001). This inconsistency may reflect different sample characteristics in each study (e.g., progressive diseases, normal aging vs. sudden changes in abilities, such as stroke). Unfortunately, it has been reported that many drivers do not plan for driving cessation (e.g., Charlton et al.; Oxley et al.; Rudman, Friedland, Chipman, & Sciortino, 2006; Stutts et al.). The consequences of driving cessation in older adults are summarized in Table A - 3 in Appendix A.
Theoretical Frameworks Applied to Driving Behaviour Change

The literature accounting for the process of driving behaviour change in older adults is scarce and that which exists is lacking in detail. Several studies have attempted to find a theoretical framework to account for the process of driving cessation in older adults (e.g., Anstey et al., 2005; Kostyniuk & Shope, 1998; Kostyniuk et al., 2000a; Liddle, Carlson, & McKenna, 2004; Rudman et al., 2006). Some of this work has focused on stage theories (e.g., Precaution Adoption Process Model; Kostyniuk et al., 2000a; Transitional Theories; Liddle et al., 2004), but not all (e.g., Anstey et al., 2005; Rudman et al., 2006).

One approach to understanding how older drivers self-regulate their driving is self-regulation theory (Ball et al., 1998; Stalvey & Owsley, 2000). The theory suggests that self-regulation of driving behaviour is adaptive and that older drivers require self-awareness to make appropriate adjustments to their driving behaviour to reduce their risk (Stalvey & Owsley).

Based on their recent review of the literature and their understanding of age-related changes in cognition, sensory and physical abilities, Anstey et al. (2005) proposed a model to explain the factors enabling safe driving behaviour in older adults. These authors view the capacity to drive safely and driving behaviour as two separate entities (Anstey et al.). They suggest that an individual’s driving capacity is determined by three enabling factors: the individual’s cognitive, sensory and physical function. They suggest that self-monitoring and beliefs about driving capacity involve the capacity to evaluate or to have insight into one’s cognitive, sensory and physical function and to compensate
accordingly. Self-monitoring and beliefs about driving capacity, therefore, interact with driving capacity (e.g., the three enabling factors) to influence safe driving behaviour. Thus, with their theory, as with self-regulation theory, awareness is needed to compensate or adjust for self-perceived deficits.

Rudman et al. (2006) also suggest a preliminary model of the process of driving self-regulation in older adults. Their preliminary model of self-regulation in aging was based on qualitative findings they obtained through focus groups with three groups of adults: 29 pre-senior drivers aged 55-64 years of age, 24 senior drivers aged 65 years of age and older and 26 ex-drivers aged 65 years of age who stopped driving voluntarily. Their model of self-regulation, in contrast to the theories already discussed, highlights the influence of interpersonal and environmental factors, in addition to intrapersonal factors, on the ability of older adults to self-monitor and adjust their driving (Rudman et al.). Their model also describes a progression from little awareness or experience with the influence of aging on driving to the decision to stop driving (Rudman et al.). They found that pre-seniors had given little or no thought to age-related changes in their driving. In contrast, older adults described how intrapersonal factors (greater awareness of physical, visual and cognitive changes, the importance and meaning of driving to them), environmental factors (e.g., availability of other forms of transportation) and interpersonal factors (e.g., feedback from family, advice from doctor) influenced decisions about how and when to self-regulate and thoughts about stopping. The ex-drivers also acknowledged the influence of interpersonal and environmental factors on their decision to stop driving. Rudman et al.’s model also emphasized the influence of
subjective level of comfort on older drivers’ self-regulatory changes to their driving and ex-drivers decision to stop driving altogether.

Adler and Rottunda (2006), although they did not come up with a theory per se, took another approach to describing the process of driving cessation. Based on the themes that emerged from their focus group study, they came up with two groups of former drivers that they called the “proactives” and the “reluctant accepters”. The “proactives” included older adults who decided to stop voluntarily and then told their family members of their intention to stop driving; while, the “reluctant accepters” included older adults who reluctantly made the decision to stop driving, but did not make specific plans to stop. These two groups were aware of declining driving skills. In contrast, a third group of former drivers, the “resisters”, were described by the former drivers in the study as those who had unrealistic views of their driving and continue to drive until they are forced to quit (Adler & Rottunda).

Another approach to understanding older adults driving behaviour was proposed by Liddle and colleagues (2004). Using transitional theories, which have a focus on the triggers for change and the individual’s perceptions of and coping with triggers, Liddle et al. found that the process of driving cessation occurs in stages. Transitional theories, like TM, acknowledge the role of personal decision making, but place more emphasis on triggers for change and perceptions of and coping with these triggers (Liddle et al.). In their qualitative study involving face-to-face semi-structured interviews with nine retired drivers, three family members and six health professionals and service providers, Liddle et al. identified five thematic categories, one of which was process and was defined as the steps involved in driving cessation. The process of driving cessation revealed four time
phases related to the decision to cease driving including driving in the past, pre-decision, decision, and post-decision (Liddle et al.). **The driving in the past** time stage involved early driving history prior to difficulties with driving and thoughts of quitting, and the **pre-decision** time phase involved life and driving prior to making the decision to cease driving, and could include some general thoughts about driving cessation (Liddle et al.). The **decision** time phase included the experiences surrounding the time of actively making the driving cessation decision; while **the post-cessation** time phase involved the experiences of the driver after their driving cessation (Liddle et al.). According to the authors, their time phases resemble the stages of the TM model most closely (Liddle et al.).

Others have attempted to apply stage theories drawn from health behaviour change research to driving. Kostyniuk and Shope (1998) suggested that, based on their findings from 16 focus groups, drivers pass through a series of stages. Specifically, they described the following sequence: reducing/limiting driving; not thinking about driving cessation; acknowledging the possibility of driving cessation; starting to think about driving cessation sometime in the future; planning for driving cessation sometime in the future; driving cessation; hoping to drive again; and finally, accepting not driving (Kostyniuk & Shope).

More recently, a stage model of health behaviour change, the Precaution Adoption Process Model (PAPM; Weinstein, 1988; Weinstein & Rothman, 1998; Weinstein & Sandman, 1992) has been adapted by the same group of researchers to driving self-regulation (Kostyniuk et al., 2000a). The PAPM involves 7 stages. In **stage 1** individuals are unaware of the problem. In **stage 2** individuals are becoming aware of a
health issue that may cause harm, but are not engaged by it; while, in stage 3 individuals are engaged by the health issue and considering how to respond to the health issue. At this point, individuals either decide not to take the precaution at least for the time being (stage 4) or decide to adopt the precaution (stage 5). Stage 6 involves initiating the new behaviour and Stage 7 is the maintenance of the adopted behaviour. Weinsten and Rothman note that the stages are similar to TM, except the model distinguishes between people who are unaware and those who are aware, but not thinking about changing. In addition, it distinguishes between people who decided not to change after considering it (e.g., progressed to Stage 4) and those who are not changing because they have not seriously considered it (e.g., Stages 1 and 2). In this model, awareness of a health issue is required before contemplating changing can occur (Kostyniuk et al.)

In justifying their use of PAPM, Kostyniuk et al. (2000a) note that driving only becomes a risky behaviour, which requires behaviour change, when other factors, such as declining health, adversely affect driving ability. They argue that many of these factors are uncontrollable and cannot be overcome. As such, they suggest that a model that emphasizes not only readiness to change in response to declining abilities, but also coping with declining abilities may be more fruitful than TM.

Their description of the process of driving self-regulation begins with acknowledgement of future problems with driving ability, followed by awareness of increasing difficulties with driving, and eventual avoidance of difficult driving situations (Kostyniuk et al., 2000a). In their model, drivers modify their driving behaviour periodically, and eventually this leads to driving cessation (Kostyniuk et al.).
In support of their model, the authors found that degree of recognition or anticipation of problems was related to driving cessation (Kostyniuk et al., 2000a). It was also suggested that the degree of problem anticipation could mark transitions along the process from driving restriction to driving cessation. However, some studies have shown that self-regulation is not related to driving ability (Baldock et al., 2006a; Charlton, Fildes, & Les, 2001) or declining functional skills (Baldock et al., 2006b). Another study demonstrated that recognition of some functional abilities (e.g., spatial visual function, depth perception) are associated with driving restrictions, but not others (e.g., visual attention; West et al., 2003).

Their adaptation of the PAPM was only briefly described and it was difficult to determine how the study results translated into their model. Moreover, their model failed to acknowledge that driving restriction and cessation are not always in response to declining abilities which compromise safe driving ability. As the research presented in Table A - 1 and A - 2 (Appendix A) demonstrates, the reasons given by older adults for restricting their driving or stopping driving altogether relate not only to intrapersonal factors (e.g., sensory, health, cognitive or physical problems), but also to extra-personal factors (e.g., finance or general lifestyle changes).

Other studies have also suggested that self-imposed (e.g., voluntary) driving restrictions may occur in stages that precede driving cessation and that Transtheoretical Model (TM), also designed for use in health promotion research, may be particularly relevant for use with older drivers (Tuokko et al., 2006; Sterns et al., 2001). The application of TM to driving behaviour change in older adults is discussed next.
Application of the Transtheoretical Model of Behaviour Change to Older Drivers

A comprehensive literature review briefly suggested that older drivers pass through the stages of change in the TM model (Sterns et al., 2001). Specifically, they described a process that at-risk older drivers progress through including precontemplation (e.g., denial of problem driving and resistance to modifying driving behaviours/driving cessation), contemplation (e.g., re-evaluation of driving), and action (e.g., safe driving patterns or driving cessation is substituted for problem driving). Sterns et al. also noted that family and friends are an important influence on this process.

Although some have suggested that driving behaviour change may be an appropriate TM application, few studies have actually investigated whether driving behaviour change occurs in TM stages. Stalvey and Owsley (2003) considered TM in designing an educational intervention to address the impact of awareness on driving behaviour change. Their educational intervention included three components: information about the risks and benefits, skill building and confidence building. Consistent with TM, the group of visually impaired older drivers who received usual care and participated in the educational intervention were more likely to acknowledge that their vision was less than excellent, and more likely to report avoiding difficult driving situations and other self-regulatory practices than a group of visually impaired older drivers who received only usual care (Owsley, Stalvey, & Phillips, 2003; Stalvey & Owsley). Consistent with TM, the educational intervention promoted increased awareness that moved the education group closer to the preparation and action stages.
In another study, preliminary support for the application of TM to driving
behaviour change was found. In a pilot study, the decisional balance component of the
TM model was investigated in a sample of older adults using a short questionnaire
assessing driving-related thoughts, beliefs and actions (Tuokko et al., 2006). Their
findings revealed that individuals reporting more negative attitudes towards driving were
more likely to be actively restricting their driving, while individuals who reported that
their driving positively influenced others were less likely to be actively restricting their
driving (Tuokko et al.).

More recently, Tuokko, McGee, Gabriel and Rhodes (2007) had older adults who
were attending a driving education session complete a driving questionnaire about their
perceptions of risk, beliefs and attitudes, and openness to change. They found that 60
percent of their sample would be willing to consider changing their driving. Meanwhile,
of those drivers who noted that changing their driving was not possible, 40 percent
reported that the inconvenience of public transportation and/or lifestyle demands and 15
percent that it would take too much thought to change as reasons why changing when and
where they drove was impossible (Tuokko et al.). Ninety-five percent of participants
indicated that if they became aware of unsafe driving habits, they could reduce their
accident risk by changing their driving behaviours (Tuokko et al.). This latter finding is
consistent with TM, in which willingness to change relates to awareness of the need to
change. It should be noted that intention to change, does not actually mean these
participants would change their driving under these circumstances.
Although it has been suggested that TM might be appropriate for the older driver context, studies have not looked at how the stages or other TM components might be related to older drivers, hence this study.
Chapter 3: Methods

Participants

To thoroughly explore the process and possible patterns of driving restrictions that precede driving cessation in older adults, six semi-structured focus groups and 18 interviews were conducted. The inclusion criteria for the study were that participants were 75 years of age or older and either a current or a former driver. For this study, current drivers were defined as individuals who had a valid driver’s license and were still driving. Former drivers included those individuals who were once drivers and who either voluntarily or involuntarily stopped driving. In this study, former drivers were determined based on driving activity, rather than license status. Thus, former drivers may have possessed a valid driver’s license.

The sample recruited for this study was restricted to individuals aged 75 years and older because research has shown that driving restriction and cessation are age related (e.g., Dellinger et al., 2001). Since driving restriction and cessation are age-related, the likelihood of having older adults who were either currently restricting their driving or no longer driving was increased with this age minimum. Approximately equal proportions of men and women were recruited to ensure that the driving-related perceptions and experiences of both genders were accounted for as the process of driving behaviour change may differ for men and women. Due to recruitment challenges with former drivers, any interested former drivers who met the age restriction and 1 former driver who did not (e.g., 71 years), regardless of the timing of their driving cessation, were recruited. At the time of their focus group (or interview), seventy percent of the former
drivers in this sample had stopped driving within the previous 24 months. Time since
driving cessation was not recorded for three former drivers (e.g., 1 former driver who
began driving again between time of recruitment and time of interview, 1 former driver
who despite not currently driving considered herself a current driver, and 1 former driver
who despite extensive questioning regarding his driving status attended a current driver
focus group).

The convenience sample of current and former drivers was recruited from the
Greater Victoria area through local media (e.g., radio announcements, newsletters,
posters on bulletin boards at local senior’s centers, and newspaper articles and
advertisements; See Appendix B). Interested participants contacted the researcher via
telephone. In this conversation, individuals were given a detailed description of the study,
screened for inclusion, and interested participants who met inclusion criteria were
classified as either current or former drivers and, based on their group, given a choice of
predetermined focus group dates and times (See Appendix C). With current drivers, this
recruitment process continued until three focus groups of current drivers with 7 to 9
participants (Current Driver Focus group 1: n = 8, Current Driver Focus group 2: n = 9,
and Current Driver Focus Group 3: n = 7) were formed. Fewer former drivers expressed
an interest in the focus groups; thus recruitment continued until three focus groups with
only 3 to 4 participants (Former Driver Focus Group 1: n = 4, Former Driver Focus
Group 2 and 3: n = 3) were formed. Focus group participants were also asked if they were
willing to participate in an individual interview at a later date in case, based on the
researcher’s discretion, the topics addressed or their expressed views needed further
exploration.
Semi-structured individual interviews were conducted with 9 current and 9 former drivers, who did not participate in the focus group discussions. All participants were sent a personalized letter and map (See Appendix D) and received a reminder phone call to increase attendance (Kreuger & Casey, 2000).

**Characteristics of the Overall Sample**

Participants (N=52) ranged in age from 71 to 94 years with a mean age of 82.45 years (SD = 4.793). Approximately 53 percent (52.91) of the participants were male. The sample was well-educated. Almost half of the participants (46 %) had a College or University education; while 96 percent had at least a High School education. An independent sample t-test revealed that the current drivers were significantly younger than the former drivers, t (49) = -2.068, p< .05. A 2 (driver status) X 2 (gender) chi-square analysis revealed no significant gender differences between the current and the former drivers, $\chi^2 (1) = .298$, p> .05. Another 2 (driver status) X 2 (level of education) chi-square analysis revealed that the two groups also did not differ in level of education, $\chi^2 (1) = 6.83$, p> .05.

Table 3 - 1 presents basic demographic information for the current drivers and former drivers. There was 1 male former driver who began driving between the time of recruitment and the time of interview. He was 83 years of age and had a post-secondary education. His data was not included in the driving status group comparisons due to his unique circumstances.
Table 3-1: Basic Demographic Information of the Current and Former Drivers

<table>
<thead>
<tr>
<th></th>
<th>Current Driver&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Former Drivers&lt;sup&gt;2&lt;/sup&gt;</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>N=32</td>
<td>N=19</td>
<td>.044</td>
</tr>
<tr>
<td>M</td>
<td>81.38</td>
<td>84.16</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>4.133</td>
<td>5.419</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>75-93</td>
<td>71-94</td>
<td></td>
</tr>
<tr>
<td>Level of Education&lt;sup&gt;3&lt;/sup&gt;</td>
<td>N (%)</td>
<td>N (%)</td>
<td>ns</td>
</tr>
<tr>
<td>Elementary School</td>
<td>2(6.5)</td>
<td>0(0)</td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>6(19.4)</td>
<td>7(36.8)</td>
<td></td>
</tr>
<tr>
<td>Post-Secondary</td>
<td>23(74.2)</td>
<td>12(63.2)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>N (%)</td>
<td>N (%)</td>
<td>ns</td>
</tr>
<tr>
<td>Male</td>
<td>16(50)</td>
<td>11(57.9)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>16(50)</td>
<td>8(42.1)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> One male current driver did not complete the brief demographic and health questionnaire. For group mean comparisons his data has been replaced by the mean of the current driver group.

<sup>2</sup> One male participant from the former driver group began driving again between time of recruitment and time of interview. His data is not included in the Table 3 - 1 due to his unique circumstances.

<sup>3</sup> To satisfy the assumption in chi-square analyses that all expected frequencies should be greater than five, the level of education variable was dichotomized (High School or less and more than High School). This was used to compare the two groups on level of education.
Characteristics of the Sample by Type of Data Collection

Participants who took part in individual interviews (N=18) and focus groups (N=34) did not differ significantly in age, \( t(50) = .281, p>.05 \), gender, \( \chi^2 (1) = .038, p>.05 \), or level of education, \( \chi^2 (1) = .280, p>.05 \). Although there were considerably more current drivers who participated in the focus groups, a \( \chi^2 (1) = 1.438, p>.05 \) chi-square analysis revealed no significant difference in driving status across interview types.

Procedures

In this study, exploratory qualitative data (e.g., focus groups and semi-structured individual interviews) was collected and analyzed to determine whether the process of driving behaviour change fits within the TM. Qualitative methods, which use open ended techniques, were chosen because they allowed the researcher to conduct an in-depth examination of the process of driving restriction that precedes driving cessation, a topic that has not been explored in detail. Similar investigations of the process of driving cessation have used qualitative approaches to explore the process of and perspectives on driving cessation in older adults (Adler & Rottunda, 2006; Rudman et al., 2006), suggesting it is appropriate in this context. Through this qualitative process, the opinions, attitudes and experiences expressed by older current and former drivers directly enlightened the researcher’s understanding of the process of driving behaviour change. This is an important advantage over quantitative techniques where broad comparisons between groups are made without a deep understanding of the reasons and processes behind the decision older adults make to stop driving. Moreover, the questions posed to
participants in qualitative studies are flexible (e.g., qualitative data is emergent; Creswell, 1999) and thus can be modified as themes and patterns emerge to get closer to the issues of interest.

The focus groups were held at the Centre of Aging at the University of Victoria and the participants’ costs for transportation and/or parking were reimbursed. Three focus groups with 7 to 9 participants with current drivers and three focus groups with former drivers with 3 to 4 participants were conducted. Three focus groups with each type of participant (e.g., current and former drivers) resulted in the emergence of a full range of ideas relevant to driving behaviour change without novel information being generated from subsequent discussions (e.g., nothing new was emerging). As such, it was felt that additional focus groups would not yield any or at best few new insights into the process of driving behaviour change in older adults. A reasonable period of time was scheduled between each focus group to allow for focus group questions to be modified and to consider if additional probes were needed. The first five focus groups were conducted over a 3-week period with at least 1 week scheduled between focus groups with the same type of participant. Due to recruitment difficulties, the final former driver focus group was held approximately 6 months after the preceding former driver focus group. Time was scheduled for modifications to the original semi-structured question guide, but they did not appear warranted.

Individual interviews were intended for focus group participants who had discrepant views from other focus group participants, for those whose opinions were not heard, or to provide clarification in areas, based on the researcher’s discretion, where more information was needed. These situations never arose; however, semi-structured
individual interviews were conducted for another purpose. Since former drivers were
difficult to recruit, the former driver focus groups consisted of fewer participants than
desired; thus, individual interviews at the Centre on Aging at the University of Victoria
or at the participant’s home were conducted with interested participants as an alternate
method of gathering information from former drivers. These interviews may have been
more appealing to former drivers than group discussions for several reasons. First, former
drivers may have been less mobile or had more difficulty finding transportation to the
University of Victoria. Second, they may have been more sensitive than current drivers to
issues relevant to their driving history or more uncomfortable discussing their driving-
related attitudes, beliefs and experiences with others. Although these interviews were
intended to gather sufficient information about the opinions and experiences of former
drivers, who were under-sampled in the focus groups, an equal number of interviews
were conducted with current and former drivers. This was done to attempt to maintain
relatively consistent numbers across driving status in at least one type of data collection.
Individual interviews were conducted with 9 current and 9 former drivers. The data
collection stopped after 18 interviews as a wide variety of driving-related perceptions and
experiences had been elicited and it was felt that conducting further interviews would
provide minimal new information relating to driving behaviour change.

All focus groups and all but one interview were conducted in person (e.g., face to
face). One semi-structured interview was conducted with a former driver via the
telephone because the participant’s home was not within reasonable traveling distance for
either the participant or the researcher.
Five of the six focus groups, held in July 2006, were led by the same experienced focus group moderator. All individual interviews were conducted by the current researcher. To maintain consistency across focus groups, it was hoped that the same focus group moderator could be hired for the final focus group, held in February 2007, but she was unavailable at that time. Instead another experienced focus group moderator was hired.

At the beginning of each focus group or interview, the focus group moderator or the interviewer performed introductions (See Appendix E), provided an overview of the topic and explained how the remainder of discussion would be conducted. Participants were encouraged to speak freely and to express their views. Participants were informed that the session would be digitally recorded to ensure that the discussions would be accurately recalled by the researcher. The researcher obtained informed consent (See Appendix F) from all the participants. The study was conducted in accordance with the Office of Research Services, University of Victoria and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (See Appendix G). After consent was obtained, interviews and focus groups were recorded using a Sony ICP Digital Recorder.

For the focus groups, as Kreuger and Casey (2000) suggest, an experienced moderator led the discussion and kept the conversation flowing and on topic; while, assistant moderator(s) took detailed notes, were responsible for digitally recording the discussion, providing a short oral summary of the discussion to the participants, and asking additional questions if needed. As recommended by Kreuger and Casey, discussion questions were designed to be easy to say, clear, short, open-ended and one-dimensional, and questioning was sequential (e.g., questions naturally flowed from each
other), moved from general to more specific, and involved opening, introductory, transition, key and ending questions.

Specific questions were developed within a TM framework including stages of change, decisional balance, the change processes and self-efficacy (See Table 3 - 2 and Table 3 - 3; Padula et al., 2003). Questions served as a guide for the moderator to lead the discussion, but the moderator probed further into each participant’s responses to gain more specific and detailed information from respondents. At the end of each focus group, an assistant moderator summarized main points and asked respondents for feedback/additional comments (Kreuger & Casey, 2000). The same questions and similar methods were used for individual interviews.
<table>
<thead>
<tr>
<th>Question</th>
<th>TM Component (s)</th>
</tr>
</thead>
</table>
| **Question 1:** We are interested in the importance of driving to older adults. Is driving important to you? If so, why? | • Non-specific opening question  
• Has some relevance to pros and cons of changing, particularly relevant to the contemplation stage  
• Some relevance to change processes (e.g., self-reevaluation) |
| **Question 2:** What are the advantages or positive aspects of driving for you? | • Factors that influence behaviour change (internal and external)  
• Pros and cons of behaviour change and decisional balance  
• Early stages of TM (e.g., precontemplation and contemplation)  
• Self-efficacy |
| Probe: What factors or circumstances enable you to drive? |  

<table>
<thead>
<tr>
<th>Question 3: What are the disadvantages or negative aspects of driving for you?</th>
<th>What factors or circumstances make it difficult (or impossible) for you to drive?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probes:</td>
<td>• Factors that influence behaviour change (internal and external)</td>
</tr>
<tr>
<td>What feelings or emotions have you experienced in relation to your driving or the possibility of not driving?</td>
<td>• Pros and cons of behaviour change and decisional balance</td>
</tr>
<tr>
<td></td>
<td>• Early stages of TM (e.g., precontemplation and contemplation)</td>
</tr>
<tr>
<td></td>
<td>• Self-efficacy</td>
</tr>
<tr>
<td></td>
<td>• Change processes (e.g., consciousness raising, dramatic relief, self-reevaluation, environmental reevaluation)</td>
</tr>
</tbody>
</table>
| Question 4a. | We are interested in ways older drivers change their driving. Tell me about how you have changed your driving over the last few years. | • Main question of interest:  
• Stages of change, particularly later stages of behaviour change (e.g., preparation and action)  
• Patterns of driving restriction that may precede driving cessation and that might fit within the TM stages  
• Awareness needed to progress through stages  
• Change processes (e.g., counterconditioning, stimulus control)  
• Self-efficacy |
| --- | --- | --- |
| Probes: | If any, what strategies have you used to change or adjust your driving?  
When and in what order did you start using these strategies?  
Has anything increased your awareness that you might need to change your driving habits? | |
| Question 4b. | If any, what strategies have you adopted to foster your continued driving? | • Stages of change, particularly later stages of behaviour change (e.g., preparation and action) |
Probes: When and in what order did you start using these strategies? 

Has anything increased your awareness that you might need to use these strategies to continue driving?

• Patterns of driving restriction that may precede driving cessation and that might fit within the TM stages
• Awareness needed to progress through stages
• Change processes (e.g., counterconditioning, stimulus control)
• Self-efficacy

Question 5

Are there any people who come to mind when you think about your driving?

• Factors that influence behaviour change (internal and external)

Probes: In your opinion, are there any people who are encouraging you to stop driving?

In your opinion, are there any people who particularly want you to continue
| Question 6 | **Are there any reasons why you must continue to drive (even if you do not want to)?** | • Factors that influence behaviour change (internal and external)  
• Pros and cons of behaviour change and decisional balance |
| --- | --- | --- |
| Question 7: | **What might lead you to stop driving?** | • Stages of change, especially early stages (e.g., precontemplation, contemplation, preparation)  
• Pros and cons of behaviour change and decisional balance |
| Probe: | Are you thinking about stopping driving? Tell me about this. | --- |
| Question 8: | **Are there any other issues that come to mind when you think about older drivers** | • Non-specific closing question.  
• Probe questions have some relevance to change processes (e.g., self-reevaluation, counterconditioning) |
| Probes: | How confident are you in your driving ability? | --- |
How might you get around if you stopped driving? and stimulus control)

• Probe questions may have some relevance to pros and cons of behaviour change and decisional balance
<table>
<thead>
<tr>
<th>Question</th>
<th>We are interested in why you stopped driving. Tell me about why you stopped driving.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Some people indicate a main event that led to their driving cessation.</td>
</tr>
<tr>
<td></td>
<td>Other contributing events may also be identified. If any, what was the main event that led you to decide to stop driving?</td>
</tr>
<tr>
<td></td>
<td>If any, what were the contributing events that led you to stop driving?</td>
</tr>
<tr>
<td>Question 1:</td>
<td>Factors that influence behaviour change (internal and external)</td>
</tr>
<tr>
<td></td>
<td>Pros and cons of behaviour change and decisional balance</td>
</tr>
<tr>
<td></td>
<td>Stages of change, especially contemplation, preparation and action</td>
</tr>
<tr>
<td>Question 2:</td>
<td>Factors that influence behaviour change (internal and external)</td>
</tr>
<tr>
<td></td>
<td>Pros and cons of behaviour change and decisional balance</td>
</tr>
<tr>
<td></td>
<td>Later stages of TM (e.g., action and</td>
</tr>
</tbody>
</table>
Question 3: **What are the disadvantages or negative aspects of not driving for you?**

Probes: What feelings or emotions have you experienced in relation to stopping driving?

What factors or circumstances made it difficult (or impossible) for you to drive?

- Factors that influence behaviour change (internal and external)
- Pros and cons of behaviour change and decisional balance
- Later stages of TM (e.g., action and maintenance)
- Self-efficacy
- Change processes (e.g., consciousness raising, dramatic relief, self-reevaluation, environmental reevaluation)

- Self-efficacy
- Change processes (e.g., consciousness raising, dramatic relief, self-reevaluation, environmental reevaluation)
| Question 4a. | **We are interested in ways older drivers change their driving before they quit. Tell me about how you changed your driving before you decided to stop driving.** |
| | **Main question of interest:** |
| | • Stages of change |
| | • Patterns of driving restriction that may precede driving and cessation that might fit within the TM stages |
| | • Awareness needed to progress through stages |
| | • Change processes (e.g., counterconditioning, stimulus control) |
| | • Self-efficacy |
| Probes: | When and in what order did you start using these strategies? |
| | Was there anything that increased your awareness that you might need to change your driving habits? |

| Question 4b | **If any, what strategies did you adopt to foster your continued driving (Before you stopped)?** |
| | **Main question of interest:** |
| | • Stages of change |
| | • Patterns of driving restriction that may |
Probes: When and in what order did you start using these strategies? precede driving cessation and that might fit within the TM stages

Was there anything that increased your awareness that you might need to use these strategies to continue driving?

- Awareness needed to progress through stages
- Change processes (e.g., counterconditioning, stimulus control)
- Self-efficacy

Question 5: Are there any people who come to mind when you think about stopping driving?

- Factors that influence behaviour change (internal and external)

Probes: In your opinion, are there any people that encouraged you to stop driving?

In your opinion, are there any people that particularly wanted you to continue driving?

Question 6: Might you begin driving again? Under Cycling
### Question 7:

| Probes: |  |
|---------|  |
| **Are there any other issues that come to mind when you think about older drivers?** |  |
| How confident were you in your driving ability? |  |
| How important was driving to you? |  |
| How do you get around now that you’ve stopped driving? |  |

- Non-specific closing question.
- Probe questions have some relevance to change processes (e.g., self-reevaluation, counterconditioning and stimulus control).
- Probe questions may have some relevance to pros and cons of behaviour change and decisional balance.

Stages of change, especially maintenance.
The main differences between the two forms of qualitative data collection were that the interviews were conducted with single participants rather than groups, typically took place in the respondent’s home, and were led by a single interviewer rather than a focus group moderator and assistant moderator(s). Following each interview or group discussion, participants were asked to complete a brief demographic and health questionnaire (See Appendix H). Each focus group lasted approximately 2.5 hours and each interview lasted approximately 45 minutes.

**Data Analysis**

**Background Questionnaire**

The current and former drivers were compared on variables from the health and demographic questionnaire. Independent sample t-tests were used to compare the groups on continuous variables; while chi-square tests were used to compare the two groups on categorical variables. Frequencies were calculated for questions that were specific to only one driver type (e.g., Within 6 months of stopping driving, how many days did you drive in the average week?).

**Qualitative Data: Steps in Data Analysis**

Immediately following each focus group or semi-structured interview, the research team (moderator and assistant moderator(s)) briefly discussed how well the group interacted and whether the questions elicited relevant discussion, and verified data for completeness and accuracy (e.g., questionnaires were completed properly, digital recorders functioned properly, all questions were asked; Kreuger & Casey, 2000; Padula et al., 2003). Although detailed notes were taken by assistant moderators, it was
determined, after quick review, that they did not augment the information provided in the focus group and interview transcriptions, so they were not examined further. Next, the digital recordings from the focus groups and structured interviews were transferred onto a computer and transcribed verbatim using Sony Digital Voice Editor 2 in preparation for data analysis. The transcripts were imported into the NVivo 7 (QSR International Pty. Ltd., Melbourne, Australia) software program, which was used for data management purposes. This software program, one of several methods of qualitative data management, facilitated coding and organization of emerging themes. It enabled the user to create and modify categories and subcategories using a network of trees and branches. Computer programs, such as NVivo, make it easier than manual systems (index cards, sticky notes, flow charts) to flexibly store, define, write about, organize and revise and revisit ideas (Morse & Richards, 2002).

Extensive data analysis occurred in several stages. First, the transcripts were compared to the digital recordings to ensure that they were accurately transcribed. Next, the transcripts were skinned briefly to get a sense of the data and then edited so that only relevant and meaningful driving-relevant information was abstracted. The transcripts were also reviewed and responses were categorized under specific focus group questions (Padula et al., 2003) using auto-coding and then manually checked for accuracy of the auto-coding. The auto-coding allowed the user to have the computer mechanically code sections of text into categories based on sections of text that has been formatted in the same way (Richards, 2005). This was used initially to organize the data in a structure that facilitated further exploration. Subsequently, transcripts were read thoroughly to identify interesting statements and patterns and factors related to driving behaviour change.
(Richards). The researcher’s thoughts and reflections regarding the data and records of daily activities were documented with NVivo using annotations and memos (Richards). An annotation is a method of storing an idea that is linked specifically to particular section of text, while, a memo stores ideas in a separate document and was used to log daily analysis activities.

As transcripts were reviewed and re-reviewed, the data was coded and categorized, recurring concepts were identified, memos and annotations documenting procedures and the researcher’s thought process when identifying emerging themes were written and clusters of codes were created to focus and organize the data (Onwuegbuzie & Teddlie, 2003). More specifically, coding involved generating categories from the data and then linking the data to the idea and all other statements that pertained to that idea (Morse & Richards, 2002; Richards, 2005). Coding using NVivo allowed for coded information to be easily accessed, reviewed, and revised, and thoughts regarding the categories to be continually developed and modified (Richards). Three types of coding were used: descriptive, topic, and analytical (Richards). Descriptive coding was used to store attributes about the participants (e.g., driving status). Topic coding was used to organize information by topic with very little interpretation of the topics, while analytical coding was used to interpret and reflect on the meaning of similarly coded text (Richards).

In summary, the data was reviewed to identify preliminary categories representing themes and re-reviewed several times to find support for each of the themes. As the transcripts were re-reviewed, existing categories were re-defined and new categories and themes were created. Major themes that emerged were subdivided into sub-themes in the
form of networks of trees and branches. NVivo facilitated this organizational process and facilitated the development of logical catalogue of categories and coding to be created and modified. This organization facilitated the development, review and strengthening of ideas (Richards, 2005). In this fashion, the data analysis moved from describing the data using descriptive and topic coding and categorizing to interpretation in which themes and understanding were generated (Richards).

Visual models were created throughout the analysis to document the progression of the researcher’s ideas regarding driving behaviour change. The stages of qualitative data analysis were cyclical rather than linear, such that analysis involved cycling through stages of analysis, rather than progressing from one stage to the next. A second researcher independently verified the coding and themes generated by the primary researcher. Matrices were created to allow for tabulation of themes across driving status (non-restricting driver, restricting driver, former driver) to facilitate comparisons and identification of possible patterns of driving restriction that precede driving cessation in older adults.

Last, the data were integrated into a coherent whole (Onwuegbuzie & Teddlie, 2003). The objectives of the research study were used to guide the analysis and interpretation (Kreuger, 1998; Kreuger & Casey, 2000; Richards, 2005). Thus, the themes that emerged from the focus groups and interviews were interpreted in light of the three research questions outlined earlier. First, the qualitative data was reviewed to see if there were typical patterns or sequences of driving restriction that precede driving cessation. Then the patterns and themes were reviewed to determine if they fit with the testable components of the TM (e.g., stages, self-efficacy, temptation, internal and external
environment). For example, do the themes and patterns identified in the data analysis support a five staged sequence of driving behaviour change (precontemplation, contemplation, preparation, action, maintenance) and is it possible to categorize factors affecting driving behaviour change into variables in the external and internal environment. Next, the qualitative data was reviewed for factors that influence the decision to restrict or cease driving. Last, the data was reviewed to find evidence of relations between reasons given by older adults for restricting and stopping driving and specific patterns of driving restriction and driving cessation. To facilitate this process and testing of ideas, coding and text searches were conducted using NVivo. Although search tools can be used for a variety of purposes, in this study coding search tools were used specifically to find relationships and patterns in the coding; while, text searches were used to check and expand on coding (Richards).

**Qualitative Data: Scientific Integrity**

Several steps were also taken to ensure that the data quality (e.g., reliability, validity) was adequate.

**Reliability:**

The reliability of the qualitative data was ensured by plotting a decision trail to ensure consistent application of procedures throughout the study (e.g., documentation of decisions about recruitment, question development and implementation, data analysis and evidence that these decisions were followed) and by having the transcripts analyzed by the primary researcher and verified by a second researcher (Padula et al., 2003).
Validity:

According to Richards (2004), validity in qualitative research applies to the arguments and conclusions, not the research design and analysis processes. As suggested by Richards, the validity of the findings was demonstrated by consistent and detailed documentation of what was studied, how it was studied, how the researcher questioned and arrived at the final conclusion, and why the researcher is confident that the findings are valid. The content validity was assessed by determining if similar themes consistently emerged from the different focus groups and interviews (Padula et al., 2003). The content validity of the data was also assessed by having a second researcher independently confirm the coding of the first researcher. The researcher also attempted to be reflexive, such that she studied and evaluated her handling of data and her ideas, her prior knowledge and assumptions regarding the process of driving restriction and cessation in older adults. Reflexivity refers to the “self-study…and need to question the taken-for-granted knowledge [researchers] take into a study and the many ways [researchers] influence what they record as data” (Richards, 2005). Reflexivity was used to guide and document data interpretation and minimize the influence of the researcher’s bias on data interpretation. Based on her literature review, the researcher acknowledges that she began the qualitative research process with a preconceived notion that stages of driving behaviour change may fit within a TM framework. With this kept continually in mind, she attempted to allow the interpretation and conclusions to follow directly from the data, rather than forcing the findings to fit within the TM structure. Thus, the researcher attempted to minimize the influence of her beliefs and assumptions on data analysis and
interpretation through careful and detailed documentation of the process and evidence supporting the conclusions she made.

**Triangulation:**

Triangulation is a method of checking validity and refers to a process in which multiple perspectives on a topic are gained through different sorts of data or methods of handling the data (Richards, 2005; Morse & Richards, 2002). In this study, two forms of data collection were used: focus groups and interviews. In addition, the perspectives of both current and former drivers were obtained. Through these multiple perspectives and different data collection methods triangulation was achieved.
Chapter 4: Quantitative Results

In this section, the descriptive results from the current and former driver’s Health and Demographic Questionnaires are presented. Only the driving and health measures are discussed. Demographics, such as gender, age and level of education, were previously described in the Characteristics of the Overall Sample section of Chapter 3: Methods.

License Status

Both current and former drivers were asked if they had a valid driver’s license. Majority (78.4%) of participants had a valid driver’s license. Forty-one participants were licensed; whereas, only 11 did not have a valid drivers license. Despite no longer driving, approximately 42 percent of former drivers still had a valid driver’s license. Table 4 - 1 summarizes the results regarding participants who report having a valid drivers’ license by driver status (e.g., current, former or former driver recently re-licensed).
Table 4 - 1: Licence by Driver Status

<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>(N=31)</td>
</tr>
<tr>
<td>Do you have a valid driver’s licence?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31 (100)</td>
</tr>
<tr>
<td>No</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>1</sup> One male current driver did not complete the brief demographic and health questionnaire.

<sup>2</sup> One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. His data is only available for questions that were common to both the current and former driver questionnaires.

Age Started Driving

Participants were also asked at what age they started driving. Approximately 43 percent of participants started driving between 16 and 20 years of age. About 48 percent of current drivers and 37 percent of former drivers began driving between 16 and 20 years of age. A t-test of independent samples revealed that the current and former drivers did not differ significantly in their mean age of starting driving, t (49) = .298, p > .05. The
frequencies of age started driving by driving status and the comparison of current and former drivers on age started driving are presented in Tables 4 - 2 and 4 - 3.

Table 4 - 2: Age Started driving by Driving Status

<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Current (N=31)</th>
<th>Former (N=19)</th>
<th>Re-licensed (N=1)</th>
<th>Total (N=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age started driving?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 16</td>
<td>3 (9.7)</td>
<td>6 (31.6)</td>
<td>1 (100)</td>
<td>10 (19.6)%</td>
</tr>
<tr>
<td>16-20</td>
<td>15 (48.4)</td>
<td>7 (36.8)</td>
<td>0 (0)</td>
<td>22 (43.1%)</td>
</tr>
<tr>
<td>21-25</td>
<td>3 (9.7)</td>
<td>3 (15.8)</td>
<td>0 (0)</td>
<td>6 (11.8)</td>
</tr>
<tr>
<td>26-30</td>
<td>4 (12.9)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>4 (7.8)</td>
</tr>
<tr>
<td>≥31</td>
<td>6 (19.4)</td>
<td>3 (15.8)</td>
<td>0 (0)</td>
<td>9 (17.6)</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1 One male current driver did not complete the brief demographic and health questionnaire.

2 One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.
Table 4 - 3: Comparison of Current and Former Driver’s Age Started Driving

<table>
<thead>
<tr>
<th>Driving Status</th>
<th>Current¹ (n=32)</th>
<th>Former (N=19)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age started driving?</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>22.17 (7.652)</td>
<td>21.29 (13.541)</td>
<td></td>
</tr>
</tbody>
</table>

¹ One male current driver did not complete the brief demographic and health questionnaire. For group comparisons his missing data was replaced by the mean of the current driver group.

Driving Restriction

Current drivers were asked if they *currently* restricted their driving; while, former drivers were asked if they *ever* restricted their driving. In this study, driving restriction was defined as limiting or avoiding difficult driving situations, reducing number of days driven each week, driving speed, or distance driven. Almost 53 percent of current drivers reported that they were not currently restricting their driving and approximately 67 percent of former drivers reported not ever restricting their driving. A summary of driving restriction by driver status is provided in Table 4 - 4.
Table 4 - 4: Frequency of Restriction

<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Current(^1) (N=31)</th>
<th>Former(^2) (N=19)</th>
<th>Re-licensed (N=1)</th>
<th>Total (N=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you currently restrict your driving?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14 (46.7)</td>
<td>n/a</td>
<td>1 (100)</td>
<td>15 (48.4)</td>
</tr>
<tr>
<td>No</td>
<td>16 (53.3)</td>
<td>n/a</td>
<td>0 (0)</td>
<td>16 (51.6)</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Have you ever restricted your driving?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>n/a</td>
<td>6 (33.3)</td>
<td>n/a</td>
<td>6 (33.3)</td>
</tr>
<tr>
<td>No</td>
<td>n/a</td>
<td>12 (66.7)</td>
<td>n/a</td>
<td>12 (66.6)</td>
</tr>
<tr>
<td>Missing</td>
<td>n/a</td>
<td>1</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) One male current driver did not complete the brief demographic and health questionnaire.

\(^2\) One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.
Driving Courses

Participants were asked if they had ever taken any courses or educational programs regarding driving. Only 37 percent of the overall sample reported ever taking any courses or educational programs regarding driving. Approximately 39 percent of current drivers and 32 percent of former drivers reported taking any course or educational program regarding driving. Of the 19 participants who reported taking a driving relevant course or educational program, 6 indicated they had taken two driving courses and 12 reported they had taken one driving course and 1 participant did not answer the question. Approximately 41 percent of those who took a driving relevant course reported completing the class within the previous 24 months. About 49 percent of current drivers and none of the former drivers who took a driving relevant course reported completing their driving courses within the previous 24 months.

The current and former drivers did not differ significantly in the proportion taking a course or educational program regarding driving, $\chi^2 (1) = .260, p > .05$, in the number of courses taken, $t (15) = .818, p > .05$, or in the time since course was taken, $t (14) = -.839, p > .05$. The frequency of driving courses by driving status and the comparison of current and former driver’s participation in driving courses are presented in Tables 4-5 and 4-6, respectively.
Table 4 - 5: Frequency of Driving Courses by Driving Status

<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Current</th>
<th>Former</th>
<th>P Value</th>
<th>Re-licensed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=31)</td>
<td>(N=19)</td>
<td></td>
<td>(N=1)</td>
<td>(N=51)</td>
</tr>
<tr>
<td>Have you taken any courses or educational programs regarding driving?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (38.7)</td>
<td>6 (31.6)</td>
<td>ns</td>
<td>1</td>
<td>19 (37.3)</td>
</tr>
<tr>
<td>No</td>
<td>19 (61.3)</td>
<td>13 (68.4)</td>
<td>0</td>
<td>32 (62.7)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 One male current driver did not complete the brief demographic and health questionnaire.

2 One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.
Table 4-6: Comparison of Current and Former Driver Participation in Driving Courses

<table>
<thead>
<tr>
<th>Driving Status</th>
<th>Current (N=32)¹</th>
<th>Former (N=19)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many courses have you taken?</td>
<td>N=12</td>
<td>N=5</td>
<td>Ns</td>
</tr>
<tr>
<td>M (SD)</td>
<td>1.42 (.515)</td>
<td>1.20 (.447)</td>
<td></td>
</tr>
<tr>
<td>How long ago (in months) did you take the program(s)?</td>
<td>N=12</td>
<td>N=4</td>
<td>Ns</td>
</tr>
<tr>
<td>M (SD)</td>
<td>99.63 (159.205)</td>
<td>180.00 (188.213)</td>
<td></td>
</tr>
</tbody>
</table>

¹ One male current driver did not complete the brief demographic and health questionnaire. For group comparisons his missing data was replaced by the mean of the current driver group.

Frequency and Length of Trips by Driving Status

When asked how many days they drove in the past week, about 10, 26 and 65 percent of current drivers reported driving 1-2 days a week, 3-5 days a week, and 6-7 days a week, respectively. In addition, when current drivers were asked how long most of their trips were each way, almost 55 percent reported less than 30 minutes each way and about 45 percent reported over 30 minutes each way; while, none of the current drivers reported over 60 minutes each way. The current drivers were also asked overall,
compared to 10 years ago how much they drove. Twenty-nine percent of the current drivers reported driving much less often, 29 percent a little less often and 29 percent the same as 10 years ago; while approximately 13 percent reported driving more often than 10 years ago. The former driver who was re-licensed between time of recruitment and interview, reported that he drove between 1-2 days a week, that most of his trips were less than 30 minutes and that overall, he drove much less than often than 10 years ago.

The former drivers were asked slightly different questions. When asked within 6 months of stopping driving, how many days they drove in the average week approximately 7, 50, and 43 percent of participants reported driving 1-2 days in an average week, 3-5 days in an average week, and 6-7 days in an average week, respectively. The former drivers were also asked within 6 months of stopping driving, how long were most of their trips each way. Forty percent of former drivers reported that within 6 months of stopping driving, most of their trips were less than 30 minutes each way, 47 percent reported that most of their trips were more than 30 minutes each way and 13 percent reported that their trips were over 60 minutes each way. These results are summarized in Table 4 - 7.
<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Current $^1$</th>
<th>Former $^2$</th>
<th>Re-licensed</th>
<th>Total $^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=31)</td>
<td>(N=19)</td>
<td>(N=1)</td>
<td>(N=51)</td>
</tr>
<tr>
<td>How many days did you drive in the past week?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2</td>
<td>3 (9.7)</td>
<td>n/a</td>
<td>1 (100)</td>
<td>4 (12.5)</td>
</tr>
<tr>
<td>3-5</td>
<td>8 (25.8)</td>
<td>n/a</td>
<td>0 (0)</td>
<td>8 (25)</td>
</tr>
<tr>
<td>&gt;6</td>
<td>20 (64.5)</td>
<td>n/a</td>
<td>0 (0)</td>
<td>20 (62.5)</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>n/a</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Within 6 months of stopping driving, how many days did you drive in the average week?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;2</td>
<td>n/a</td>
<td>1 (7.1)</td>
<td>n/a</td>
<td>1 (7.1)</td>
</tr>
<tr>
<td>3-5</td>
<td>n/a</td>
<td>7 (49.9)</td>
<td>n/a</td>
<td>7 (49.9)</td>
</tr>
<tr>
<td>&gt;6</td>
<td>n/a</td>
<td>6 (42.8)</td>
<td>n/a</td>
<td>6 (42.8)</td>
</tr>
<tr>
<td>Missing</td>
<td>n/a</td>
<td>5$^3$</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>n/a</td>
<td>0</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
### How long are most of your trips (each way)?

<table>
<thead>
<tr>
<th>Duration</th>
<th>Count</th>
<th>Percent</th>
<th>N/A</th>
<th>Ex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 min</td>
<td>17</td>
<td>54.8</td>
<td>n/a</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Over 30 min</td>
<td>14</td>
<td>45.2</td>
<td>n/a</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Over 60 min</td>
<td>0</td>
<td>0.0</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Within 6 months of stopping driving, how long were most of your trips (each way)?

<table>
<thead>
<tr>
<th>Duration</th>
<th>Count</th>
<th>Percent</th>
<th>N/A</th>
<th>Ex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 min</td>
<td>6</td>
<td>40.0</td>
<td>n/a</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Over 30 min</td>
<td>7</td>
<td>46.7</td>
<td>n/a</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Over 60 min</td>
<td>2</td>
<td>13.3</td>
<td>n/a</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>31</td>
<td>0</td>
<td>1</td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>

### Overall, compared to 10 years ago, do you drive:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percent</th>
<th>N/A</th>
<th>Ex</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much less often</td>
<td>9</td>
<td>29.0</td>
<td>n/a</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>A little less</td>
<td>9</td>
<td>29.0</td>
<td>n/a</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>The same</td>
<td>9</td>
<td>29.0</td>
<td>n/a</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>More often</td>
<td>4</td>
<td>12.9</td>
<td>n/a</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td></td>
<td>n/a</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>--------</td>
<td>------</td>
<td>-----</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. *One male current driver did not complete the brief demographic and health questionnaire.*

2. *One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.*

3. *Three former drivers did not complete the questions that began with within 6 months of stopping driving, because they received an old copy of the questionnaire and were unable to be reached at a later date.*

4. *See note 3.*
**Age Stopped Driving**

When asked when they stopped driving, approximately 18 percent of the former drivers reported that they stopped driving between 70-75 years of age, 12 percent between 76-80 years of age, 35 percent between 81-85 years of age, and 29 percent between 85-90 years of age. Time since cessation was calculated by subtracting the age stopped driving from age at interview. Majority (64.7%) of the former drivers stopped driving within the previous 12 months and another 18 percent stopped driving within 24 months of the interview. The data regarding age stopped driving and time since driving cessation are presented in Tables 4 - 8.
Table 4 - 8: Time Since Cessation

<table>
<thead>
<tr>
<th>Age stopped driving?</th>
<th>Frequency (%)</th>
<th>N = 191</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-75</td>
<td>3 (17.6)</td>
<td></td>
</tr>
<tr>
<td>76-80</td>
<td>2 (11.8)</td>
<td></td>
</tr>
<tr>
<td>81-85</td>
<td>6 (35.3)</td>
<td></td>
</tr>
<tr>
<td>86-90</td>
<td>5 (29.4)</td>
<td></td>
</tr>
<tr>
<td>&lt;90</td>
<td>1 (5.9)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time since cessation</th>
<th>Frequency (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1 year</td>
<td>11 (64.7)</td>
<td></td>
</tr>
<tr>
<td>13 months – 2 years</td>
<td>3 (17.6)</td>
<td></td>
</tr>
<tr>
<td>25 months – 3 years</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>37 months – 4 years</td>
<td>1 (5.9)</td>
<td></td>
</tr>
<tr>
<td>&gt; 48 months</td>
<td>2 (11.8)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

1 One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.

2 One female participant who met criteria for a former driver in this study, did not complete the age stopped driving question, despite not driving for several years, because she did not consider herself a former driver.

3 See note 2.
Health

Participants were asked to rate their general health. Approximately 24 percent of the overall sample reported that in general, they would rate their health as excellent, 51 percent as very good and 24 percent as good; while, only two percent (one participant) reported that in general, they would rate their health as fair and none as poor. More specifically, about 26 and 21 percent of current and former drivers respectively reported their health as excellent, 52 and 47 percent as very good, and 23 and 26 percent as good. Only one former driver rated his health as fair. A 2 (health) by 2 (driver status) chi-square analysis revealed that the current and former drivers did not differ in their self-reported health, \( \chi^2 (1) = .496, p > .05 \). When asked to rate their health compared to 1 year ago, almost 81 percent of current drivers reported that in general their health was about the same as 1 year ago.

Former drivers were asked to rate their health at the time they stopped driving. Approximately, 33 percent of former drivers reported that their health at time of cessation was excellent, 33 percent reported that their health was very good and 27 percent reported that their health was good. When asked to rate their health now compared to when they stopped driving, 80 percent of the sample reported that their health was about the same as when they stopped. The self-reported health of the current and former drivers is summarized in Tables 4 - 9.
### Table 4 - 9: Self-Reported Health by Driving Status

<table>
<thead>
<tr>
<th>Driver Status</th>
<th>Current (N=31)</th>
<th>Former (N=19)</th>
<th>P Value</th>
<th>Re-licensed (N=1)</th>
<th>Total (n=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general, would you say your health is³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>8 (25)</td>
<td>4 (21.1)</td>
<td>ns</td>
<td>0 (0)</td>
<td>12 (23.5)</td>
</tr>
<tr>
<td>Very Good</td>
<td>16 (53.1)</td>
<td>9 (47.4)</td>
<td>1 (100)</td>
<td>26 (51)</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>7 (21.9)</td>
<td>5 (26.3)</td>
<td>0 (0)</td>
<td>12 (23.5)</td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td>0 (0)</td>
<td>1 (5.3)</td>
<td>0 (0)</td>
<td>1 (2.0)</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Compared to 1 year ago, how would you rate your health in general now?**

<p>| | | | | | |
|                      |                |         |         |                   |              |
|----------------------|----------------|---------|---------|                   |              |
| Much better than 1 year ago | 3 (9.7)       | n/a     | 0 (0)   | 3 (9.4)            |
| Somewhat better than 1 year ago | 1 (3.2)       | n/a     | 0 (0)   | 1 (3.1)            |</p>
<table>
<thead>
<tr>
<th>Health Status</th>
<th>Count (% of Total Count)</th>
<th>n/a Count</th>
<th>Yes Count</th>
<th>Total Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>About the same as 1 year ago</td>
<td>25 (80.6)</td>
<td>n/a</td>
<td>1 (100)</td>
<td>26 (81.3)</td>
</tr>
<tr>
<td>Somewhat worse than 1 year ago</td>
<td>2 (6.5)</td>
<td>n/a</td>
<td>0 (0)</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not applicable</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**When you stopped driving, how would you say your health was?**

<table>
<thead>
<tr>
<th>Health Status</th>
<th>Count (% of Total Count)</th>
<th>n/a Count</th>
<th>Yes Count</th>
<th>Total Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>n/a</td>
<td>5 (33.3)</td>
<td>n/a</td>
<td>5 (33.3)</td>
</tr>
<tr>
<td>Very Good</td>
<td>n/a</td>
<td>5 (33.3)</td>
<td>n/a</td>
<td>5 (33.3)</td>
</tr>
<tr>
<td>Good</td>
<td>n/a</td>
<td>4 (26.7)</td>
<td>n/a</td>
<td>4 (26.7)</td>
</tr>
<tr>
<td>Fair</td>
<td>n/a</td>
<td>1 (6.7)</td>
<td>n/a</td>
<td>1 (6.7)</td>
</tr>
<tr>
<td>Poor</td>
<td>n/a</td>
<td>0 (0)</td>
<td>n/a</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Missing</td>
<td>n/a</td>
<td>4⁴</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>31</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
One year before you stopped driving, how would you say your health was?

<table>
<thead>
<tr>
<th>Response</th>
<th>N/A</th>
<th>Count (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much better than when I stopped driving</td>
<td>n/a</td>
<td>1 (6.7)</td>
</tr>
<tr>
<td>Somewhat better than when I stopped driving</td>
<td>n/a</td>
<td>1 (6.7)</td>
</tr>
<tr>
<td>About the same as when I stopped driving</td>
<td>n/a</td>
<td>12 (80.0)</td>
</tr>
<tr>
<td>Much worse than when I stopped driving</td>
<td>n/a</td>
<td>1 (6.7)</td>
</tr>
<tr>
<td>Missing</td>
<td>n/a</td>
<td>4^5</td>
</tr>
<tr>
<td>Not applicable</td>
<td>31</td>
<td>0</td>
</tr>
</tbody>
</table>

^1 One male current driver did not complete the brief demographic and health questionnaire.

^2 One male participant who participated in a current driver focus group was actually a former driver. He did not fill out a former driver questionnaire for this reason. Data is only available for questions that were common to both the current and former driver questionnaires.
To satisfy the assumption in chi-square analyses that all expected frequencies should be greater than five, the self-reported health variable was dichotomized: 1) very good or excellent and 2) fair or good. This was used to compare the two groups’ self-reported health.

Three former drivers did not complete the questions that began with within 6 months of stopping driving, because they received an old copy of the questionnaire and were unable to be reached at a later date.

Same as note 4.
Chapter 5: Qualitative Results

Many themes and sub-themes emerged from the analysis, including topics unrelated to the process of driving behaviour change. These themes and sub-themes were reviewed for findings relevant to the three research questions outlined below. To present these findings, a single or a few example quotes that are representative of the typical types of comments made by participants regarding each theme has been highlighted below. A few additional supporting quotes for each theme can be found in Appendix I. Full tables with all supporting quotes are also available upon request.

Research Question 1: Are there typical patterns or sequences of driving restrictions that precede driving cessation in older adults? If so, do they fit within TM?

To address this research question, current drivers were informed that the researcher was interested in learning about ways older drivers change their driving habits and older former drivers were informed that the researcher was interested in ways older drivers change their driving before they stop. The current drivers were asked questions regarding whether they had changed their driving habits over the last few years and former drivers were asked questions regarding whether they had changed their driving habits before they decided to stop. In this section, themes related to patterns of driving restriction and strategies of driving behaviour change are presented.

Are there typical patterns or sequences or driving restrictions that precede driving cessation in older adults?

First, the themes pertaining to whether there are typical patterns or sequences of driving restriction are discussed. Based on the qualitative results from this study, there
does not appear to be any typical patterns of driving restriction that precede driving cessation. Although the patterns of driving restrictions reported by each participant were extremely varied and could not be grouped into any typical patterns or sequences of driving restriction (e.g., timing, order of restrictions, common groups of restrictions), a number of driving restrictions were frequently reported. Some participants indicated that they were unaware of any change in their driving habits with age, leaving the possibility that some changes are employed subconsciously. For example, when the researcher asked one current driver if he/she felt he/she had changed his/her driving over the last few years, he/she responded with: “Not consciously, but I know that I know that I’m not as crisp as I was”. Others reported difficulty reflecting on the sequencing of their driving restrictions. In this section, the driving restrictions employed by current and former drivers are divided into three groups of strategies: 1) avoidance of difficult driving situations, 2) other self-imposed driving restrictions (other than avoidance strategies), and 3) conservative strategies (not driving restrictions) employed by older adults to enable continued safe driving.

**Avoidance of Difficult Driving Situations**

Although the strategies employed by participants were variable, many older drivers and former drivers reported avoiding specific difficult driving situations, such as avoiding bad weather (e.g., icy/snowy conditions and heavy rain), distractions (e.g., listening to the radio, driving with talkative friends), driving with others, driving at night and driving at night when wet, left turns and intersections without lights, rush hour and heavy traffic, highway driving, and unfamiliar routes.
Both current and former drivers indicated that avoiding bad weather was a strategy they employed to keep themselves driving safely as they age. For example, one current driver provided a detailed account of this common scenario:

I mean we used to, back, there was a time when we were young, we wouldn’t let things like a snowstorm stop us if we had somewhere to go to. When we were in Cambridge living about ten miles south of Cambridge and over a particularly harsh winter, that part of England is very flat, and the snow doesn’t fall, it drifts horizontal, but that wouldn’t stop us from going to dinners and other social events at the university because we perceived them to be important things that we wanted to do, unique experiences in some cases and so on. Were we faced with the same situation now, if we had to go, if we were due to go to a concert downtown and it was in the middle of a snowstorm, we’d give serious consideration to not going.

However, avoidance of driving in bad weather was not a uniform experience for the participants. A few participants indicated that they would not avoid such situations. One former driver who made the decision to stop driving voluntarily pointed out, “Because of my pig-headedness, I would never let anybody think that bad roads would stop me from driving”. While another participant noted that there was no need to avoid driving in the rain due to considerable experience driving in Victoria’s frequently rainy weather.

Current drivers also frequently mentioned that they tried to avoid distracting situations, such as driving with talkative passengers or driving with the radio on. For example, one current driver reported:

Another thing, I don’t know whether it comes under this question, but I don’t drive friends anymore. It’s sounds hard-hearted, but they like to chatter and I’m better if I keep my mind on my what I’m doing and not participate with my friends… So, I drive myself and I say I’ll pick things up, but I won’t take anyone with me.

One current driver exemplified the uniqueness of the driving experience when he/she reported driving with the radio as a safe driving strategy he/she said:
I like to play music when I’m driving because I think it helps my concentration. I don’t know if there’s any evidence to support that theory. It may be bunk. It may not be a good theory at all. … It gives you something pertinent and something you enjoy and serves as a background. Call it elevator music if you like. I don’t think it’s quite the same mode as that but it possibly relieves tension to a degree.

There were no instances of avoiding distracting situations reported by the former drivers.

Participants also commonly reported avoiding driving with others, but not for the purpose of avoiding distraction. For instance, one current driver indicated that:

If I go anywhere in my car with somebody I ask for them to do the driving because I know if I had somebody in the driver, as you’ve said, grey hair and wrinkles, they would be a little more critical.

Both current and former driver frequently reported avoidance of rush hour and heavy traffic. One current driver provided a detailed description of his/her avoidance of rush hour traffic:

… Because I’m independent I try to drive at off hours. If I have to make a medical appointment, I take an early morning one, after the business traffic and before the people who have been doing their chores get out on the road. And I find that very helpful. …And I don’t go after 4 or 4:30.

Likewise, many current and former drivers indicated that they avoided highway driving.

For example, one former driver described this strategy:

… I’d offer to take you to the ferry, but I didn’t say how I’d get you there. I wouldn’t go out on the highway; I’d go down on the back road. And everything I used, just me, I would use different routes and I’d use them because I think it’s either to your advantage.

As in previous research, instances of avoidance of night driving and/or night driving when wet were very common. For example, one current driver noted:

If it’s not an important matter. If we decided we want to go and see a movie early in the day and then by the time it comes to see the movie it’s chucking it down with rain and it’s dark, we’ll say, “Oh to hell with it.” And we’ll go tomorrow.
Former drivers, especially those who indicated that they stopped driving of their own accord, often described gradually avoiding driving at night before they stopped driving. For example, one former provide his/her account of this common transition, “I would do just do casual driving. I wouldn’t drive at night ... that sort of tapered down I would say about eight years ago”.

Both current drivers and former drivers also reported having difficulty in unfamiliar areas and indicated that they attempted to avoid these situations. A current driver reported that “It also helps that you know you’re roads. If you stick to the roads that you’re familiar with, it makes you driving easier, too. If you know where the stop lights are…” A former driver described a similar difficulty and approach: “I try to stay to certain roads, follow certain roads, and when I went on a new road, I had a great deal of trouble”.

Another common instance of avoidance of difficult driving situations was noted by one current driver when he/she discussed making left turns:

And use the lights where at all possible, I mean at intersections with lights. It’s just so much easier. I think so. You gradually evolve into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens’.

Former drivers also often employed this type of avoidance strategy, as one former driver suggested that:

… always, if you are going to turn left, make sure you have the arrow to help you turn left … at an intersection and you know, even go out of your way a little bit to get to that intersection, where you have um, um an arrow. So you’ve got the time, you don’t have to worry about. And then, even if you have to go around a couple blocks, it’s worth it. It leaves a little…

The driving restrictions that were identified as avoidance of difficult driving situations and a selection of supporting quotes are summarised in Table I - 1 of Appendix
I. Examples of other less commonly reported avoidance of difficult driving situations can be found in the “other” section of this table.

**Other Self-imposed Restrictions**

Although they were reported less frequently than avoidance strategies, other types of self-imposed driving restrictions (e.g., not avoidance strategies) were also relatively common. These included restricting driving to necessary activities, advanced planning before driving, relying on significant others to do most of the driving, and reducing the distance of trips, speeding, lane changing and amount of driving.

Many current and former drivers reported that they restricted their driving to necessary activities, such as attending a medical appointment or buying groceries. For example, one former driver noted that “…I didn’t drive for the sake of driving. I didn’t drive unnecessarily” and a current driver noted that we’re “not taking the car unnecessarily out for things that we’ve forgotten to put on the list when we’re shopping. We shop just once a week now”.

Another common driving restriction, that of making preparations and planning prior to driving (e.g., going on a practice run, pulling out a map, planning route), was frequently reported by both current and former drivers. Although including this strategy in driving restrictions does not seem intuitive, it loosely fits within the driving restriction category in the sense that driving can be restricted to trips in which advanced planning was done. One current driver described using a map and planning out his/her driving route:

I make it a habit more now than I did before, if I’m going to an unfamiliar part of the Island or an unfamiliar part of Victoria, I will get out the maps before and I’ll check it out, even to the extent of writing it down. Because I don’t want to have to
try and find a certain street or a certain turn off the highway or something like that and find myself having to stop and dig out the map. We’re here now and we’ve got to go there. So I like to have it planned out in advance, just exactly what it’s going to entail navigating from A to B.

While, a former driver indicated that he/she would check out unfamiliar areas: “I would only go to certain places and certain areas and if I didn’t know where I was going I’d do a trial run”.

Some older adults, especially females, reported relying on their significant other to do most of the driving. One female current driver explained, “That’s the reason I don’t do very much driving. X does most of the driving because I intend to stay and keep my driving … in the North Saanich/Sidney area”. Only one male participant noted employing this type of strategy as he began experiencing increasing discomfort interacting with other drivers on the road before he stopped driving. This former driver noted:

We had almost decided to give it up… Actually, I uh, I uh, I was turning; I was getting nervous about driving - a little nervous. X was, I think her eyes were worse than mine …, but she was doing the driving.

The remainder of driving restrictions identified in the other driving restrictions category involved “reductions” in particular driving behaviours. Less speeding and fewer lane changing were two of the more common driving reductions reported by participants.

For instance, a current driver noted his/her change in speeding behaviour:

Well I think the only change I have made is I don’t exceed the speed limit anymore…I drive to the limit. In fact, where there’s a 90 sign, I will do 100. If it says 80, I will do 90. …Because they will give you 10 kilometres…Yes, they will give you a 10-kilometre leeway and I go for the limit. Going over the Malahat, anywhere. I will drive to the limit.

One former driver also described changing his/her speeding behaviour to compensate for his/her declining vision. He/she explained, “Well if you drive down the road and you
can’t see, I have to go slower. A current driver also described reducing lane changing with age:

If I know that like five blocks down the road that I’m going to have to be on the outside lane, have to be, then, I used, if somebody was too slow I’d dodge around them or if there was a bus dodge around. And I notice now, I’m not doing that. I’m staying because I know that I’ve got to be there… And I don’t really think I’m holding anybody up because they’re holding you up.

One former driver reported that he/she “… stopped driving um, where I would have to drive very fast. …Change lines on big highways”. Former drivers, in contrast to the higher occurrence in current drivers, seldom reported fewer lane changes as a driving restriction they employed before they stopped driving.

Although less frequent, some participants also reported restricting their driving to shorter distances and driving less often. For example, one current driver reported, “I haven’t driven any long distances for quite a while. I used to go up to Qualicum to the theatre up there, but I haven’t done that for a number of years” and one former driver noted that he/she “… tr[ied] not to drive too long”. The current and former drivers alike reported restrictions in the amount of their driving. For instance, a current driver noted that “…I’ve cut back my driving”. In addition, one former driver explained, “It’s just that I perhaps wouldn’t be as venturesome and wouldn’t go out at the spur of the moment like I used to”.

A summary of the other self-imposed driving restrictions (not including avoidance strategies) that emerged from the interview and focus group participants can be found in Table I - 2 of Appendix I.
Conservative Driving Strategies

In addition, some of the current and former drivers reported using other driving strategies, here identified as conservative driving strategies, to enable continued safe driving that were not considered driving restrictions. These included: anticipating other drivers’ behaviours, being attentive, being cautious, shoulder and mirror checking, driving an appropriate distance from the car in front of them, maintaining speed, signalling, drinking coffee to stay alert, maintaining their car’s condition, proper adjustment of their vehicle (e.g., seat, mirrors, height of steering wheel) and challenging oneself to maintain driving ability.

Although these are not driving restrictions, one aspect of how these strategies were employed by some participants is especially relevant to driving behaviour change in older adults: the notion of change in these strategies with advancing age. Some current drivers reported an increase in these conservative driving strategies as they got older. For example, one current driver stated, “…I was more careful about looking over my shoulder to see and not relying entirely on the mirrors”. Similarly, some former drivers reported an increase in these conservative driving strategies before they stopped driving. One former driver noted how “… [he/she] … became a little more cautious … than I had been maybe 5-10 years before”. Both of these examples support the idea that some driving habits change gradually as older adults get older.

These conservative driving strategies will not be discussed further because they are not relevant to whether there are typical patterns of driving restriction and driving cessation in older adults. A summary of these conservative driving strategies and a selection of supporting quotes are provided in Table I - 3 of Appendix I.
Classes of Driving Behaviour Change

Although typical patterns (e.g., timing, ordering and clusters of driving restrictions) did not emerge from the qualitative data, the participants’ driving habits over the last few years and before stopping could be grouped into two broader classes of driving behaviour change in older adults. These included: 1) Individuals who changed their driving as they aged; and 2) Individuals who did not change their driving as they aged. This latter category includes individuals who reported having not made changes to their driving and also those individuals who reported having made only very minor changes, but who consider themselves to not have changed with age. The first broad class is subdivided into two groups:

A) The “Gradual Restrictors”: Individuals who reported changing their driving by gradually employing driving restrictions as they aged. The current drivers and former drivers who reported making any self-imposed driving restrictions as they got older or before they stopped were identified as “gradual restrictors”.

B) The “Preparers”: The current drivers who reported making preparations (e.g., moving, becoming familiar with alternative transportation) for the possibility of stopping driving in the future and the former drivers who reported they made preparations for stopping driving. These “preparers” may not have employed driving restrictions.

In some cases, a participant may be both a “gradual restrictor” and a “preparer” and so these classes are not mutually exclusive. It was difficult to disentangle whether those who prepared for stopping, had also restricted. In fact, the “gradual restrictors” may be a subclass of “preparers” (e.g., they make restrictions in preparation for stopping).
The second broad class is subdivided into two categories as well:

A) **The “Non-Changers”**: The current drivers who reported that they have not made any restrictions or only minor changes to their driving as they aged. The former drivers who reported stopping driving suddenly without making any or only minor changes to their driving habits before they stopped were also included in this group. When asked about changes they had made with age, individuals who had made minor changes in their driving usually considered themselves to have made no changes with age.

B) **The “Consistent”**: The current drivers or former drivers who reported not making any changes or only minor changes as they aged or before they stopped driving. Unlike the “non-changers, the “consistent” also reported always using driving strategies throughout their driving history, rather than never employing driving restrictions or driving restrictions with age. For example, if they reported avoiding driving at night in old age, then they also reported avoiding driving at night when they were young. These strategies included, but were not limited to driving restrictions. In other words, driving restrictions and changes with age are not used interchangeably. A person can report restricting when and where they drive at any point in their driving history. This group overlaps with “gradual restrictors” because both groups employ driving restrictions, but also differs from this group because they have not gradually, but rather consistently employed these strategies.

These four subcategories of older drivers and comments representative of these groups are presented below within their broader class.
2. Individuals who Have Changed Their Driving as They Aged

A) The “Gradual Restrictors”

Although no typical patterns of driving restriction that precede driving cessation were identified, a number of individuals reported gradually making a variety of driving restrictions with age or before they stopped. Amongst these “gradual restrictors” many participants were able to outline the timing of their driving restrictions compared to the time of interview (current drivers) or time of driving cessation (former drivers). The ability to describe stages of avoidance of night driving was the most common example of this. The researcher’s dialogue with one participant provides an example of how the “gradual restrictors” identified changes in driving restrictions with age:

**Interviewer:** I’m interested in why older drivers change their driving, so tell me about how you’ve changed your driving over the past few years. Have you?

**Participant:** I don’t drive at night anymore.

**Interviewer:** Right and when did that…

**Participant:** … Oh probably maybe about three or four years ago when I realized that my eyes were not contracting to keep the light out. And I always, nowadays, I like to know where I’m going.

**Interviewer:** So you plan things out more than you used to?

**Participant:** You do, you do.

**Interviewer:** All right. Did that happen around the same time?

**Participant:** You gradually evolve into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens.

A little later in the interview, the same current driver explains,

I think it’s just part of aging; you know it really is. I think it’s part of aging. I mean when you go out and the roads are slippery and even when you’re walking, you’re cautious of where your feet go because you know that when you’re older,
when you’re in your eighties, a fall means the end of your independence. So it’s just something that comes with the years.

In some cases, the gradual restrictions culminated in driving cessation. For example, one former driver who stopped driving voluntarily explained that before he/she decided to stop, he/she remembers stages of thinking about and then stopping driving at night:

Well, with me uh, I would say about 7 or 8 years before I quit driving altogether I started, I started thinking of stopping driving at night. I quit driving 6 or 7 years before I did. I never drove at night.

Another typical example of gradually using driving restrictions before stopping driving was provided by a former driver who remembers gradually making changes before she/he was ready to stop:

I think gradually … I became concerned about driving at night. It didn’t stop me if I needed to go somewhere, but those were my concerns. And driving in heavy traffic, I’d avoid it if I could. There was no point in getting involved. And certainly heavy rain and snow were taboo. I just didn’t go. But it didn’t push me to the point where I wanted to stop. I was just aware of those bad feelings and tried to avoid any situation where I was made to drive or tempted to drive.

As previously mentioned one of the participants in the study was a former driver at time of recruitment and had failed his/her driver’s test several times. At the time of interview, he/her had recently begun driving again after taking several driving lessons and passing his/her most recent driving test. Like other “gradual restrictors”, he/she reported changing his/her driving before he/she stopped driving. The following discussion with the interviewer is evidence of some of the changes he/she employed before he/she originally lost his/her license having failed several driving tests:

**Interviewer:** Did you change your driving at all before you stopped driving?

**Participant:** Well, yes I certainly did.

**Interviewer:** Can you tell me about that?
**Participant:** I try to stay to certain roads, follow certain roads, and when I went on a new road, I had a great deal of trouble. I’m much slower than I was. I can’t see the road signs as they flash by. I’ve got to go slow on a new road. A road that I know, I know where the stop signs are and everything is. I can remember that fairly well. But I know where everything is and I can drive much easier on a road that I know. I adjusted to that.

**Interviewer:** Did you use any other strategies to adjust your driving?

**Participant:** Well I tire much easier than I used to so I try not to drive too long. I was driving that West Coast Road and that’s a terror. I mean it’s got so many curves and uphill and downhill and everything. It really plays you out.

**Interviewer:** So was there anything that increased your awareness that you might need to change your driving habits?

**Participant:** Well if you drive down the road and you can’t see, I have to go slower. You change your driving habit to, you have to adjust somehow so you can find the road. And you know that you’re going to do that, so adjustment is in order.

Other selected examples of strategies employed by “gradual restrictors” can be found in Table I - 4 of Appendix I. The supporting evidence is grouped by driver type: 1) current drivers, 2) former drivers (voluntary cessation), 3) former drivers (involuntary cessation), and 4) former drivers (involuntary cessation) who recently started driving again.

**B) The “Preparers”**

Some individuals reported making preparations for the possibility of stopping with age or before they stopped. One current driver identified as a “preparer” described his/her plans to adjust for stopping driving in the future:

It’s important for independence, but I live in the Royal Oak area; I took the bus here because I thought by the time – I’ve taken someone else here before – and by the time you drive around finding a place to park and I get lost in a phone booth … and it was so easy to find this place with walking. And if I go to start, if I have to go downtown and I’m just going to be in the centre part of town, I’m going to take the bus just so that the transition will be gradual.
When asked whether he/she made changes to his/her driving before he/she stopped, one former driver who stopped driving of his/her own accord indicated, “Not that I’m aware of. …I might qualify that a little bit. I think I became a little more cautious. … Then I had been maybe 5-10 years before”. Despite indicating that he/she had not employed driving restrictions before he/she decided to stop driving, the former driver reported moving houses in preparation for stopping. For example, one of his/her statements illustrates his/her moving as preparation for stopping:

It was just, well why have I got the car? I’m only going down and getting groceries. Well okay, from here, yeah, I can’t carry groceries, it’s too far. It’s uphill all the way; it’s okay walking down into town; it’s uphill all the way back. And then I considered, well, yeah, okay I could get a taxi and after about – I mean this is something I wasn’t thinking about all the time, it was just something that would pop into my head every few months or something. And then I started thinking, well why don’t I just move downtown? So I started looking, thinking about it.

This preparation was a gradual progression as he/she noted, “But once I sort of made up my mind, then it took time. The place didn’t sell right away. It took about five-six months or something. Yeah. It was just progression”. The participant described above only made minor changes and did not describe any driving restrictions; yet, he/she did describe a gradual progression. Selected examples of strategies employed by the “preparers” can be found in Table I - 5 of Appendix I.

2. **Individuals who Did Not Change Their Driving as They Aged**

A) **The “Non-Changers”**

Non-changers did not describe a process involving changing their driving with age. For example, one current driver when asked if he/she had made changes to his/her driving habits with age noted, “Not consciously, but I know that I’m not as crisp as I was”. Interestingly, one former driver who stopping driving voluntarily reported that
he/she had not changed his/her driving before stopping, but he/she would impose restrictions on his/her driving if he/she was still driving. The former driving explained:

… But I might have done had I continued driving because it’s about three years ago that my specialist told me I was starting to develop cataracts. And I was beginning to notice a glare, a slight glare. So possibly had I continued driving, that factor might have come into it. I might not have gone out in the dark in the rain unless I really had to sort of thing. It hadn’t restricted me up to that point, but it was something that I had begun to notice.

In addition, a former driver who had stopped driving involuntarily was classified as a “non-changer”. Not surprisingly, this former driver reported, “No, not that I can think of. I haven't changed the way I was driving”. Examples of supporting quotes of current and former drivers belonging to the “non-changer” group are provided in Table I - 6 of Appendix I.

B) The “Consistent”

In this section, individuals who have consistently employed driving strategies and restrictions throughout their driving history are discussed. The following comments from one current driver are representative of the consistent use of driving strategies throughout a “consistent’s” driving history:

I don’t honestly think I have changed at all that much. I know I’ve always had a tendency to possibly drive a little fast. And I’m very careful to watch my speed. I do check my speed limit much more than I used. And I think that’s since I did the 55 Alive course. Because it really is an excellent course, and it does make you think of all the things that you should be doing and checking. I look at my mirrors much more frequent than I used to because I know that’s something that they are going to be looking for in any test.

Well, I think I’ve always used strategies. I know my daughter gets very annoyed with me. This comes from my original instructor. If you know where you’re going, drive in that lane. And I mean, if I know I’m going to turn left I make sure I’m driving in the centre lane because I’m going to make a left turn. I mean, it’s a matter of convenience or laziness. I don’t know.
I think I probably choose to drive an easy route if there’s one. Of course it’s always madness as driving the scenic route, isn’t it? Rather than driving the busy streets, but why not…. I’ve always rather tended to do that because I don’t think I’ve ever honestly been in a hurry to get anywhere.

But I don’t drive at night. My night driving has been pulled because I’m very light sensitive so I tend not to drive at night. But then I’ve always avoided driving at night.

Well, I think I did start them all way back when.

Another participant, a former driver who stopped voluntarily, described the mentality of those identified as “consistent” well when he/she said, “When I stopped, I stopped. I can’t think of one…I think I always did it. Yeah. The business of being forced into it by age or something doesn’t really apply, not in my mentality”. These and other selected examples of the “consistent” are summarized in Table I - 7 of Appendix I.

**Research Question 1b: If so, do they fit within the TM framework?**

Despite the diversity in experience, considerable support for TM framework was found. In this section the themes relevant to the TM model are discussed. These include: 1) weighing the pros and cons of driving cessation, 2) awareness, and 3) thoughts about stopping driving. The “gradual restrictors” described in the previous section on classes of driving behaviour change also provide evidence of stages of behaviour change (e.g., stages of driving restriction that precede driving cessation) that are relevant to the TM model (Refer to Table I - 4 of Appendix I). Evidence of other minor components (e.g., cycling between stopping and driving again and also external and internal factors related to restricting and stopping driving) of the TM model are discussed briefly.
Weighing the Pros and Cons of Stopping Driving

A component of the TM model, decisional balance, involves weighing the pros and cons of changing the problem behaviour. According to the TM framework progression through the stages requires the pros of changing the behaviour to increase and the cons of changing the driving behaviour to decrease. The influence of weighing the pros and cons of stopping driving can be seen by comparing the statements made by three groups of participants: 1) the current drivers, 2) the former drivers who stopped driving voluntarily, and 3) the former drivers who stopped involuntarily (e.g., not driving due to failing driving test(s)). If the driving fits within TM then varying degrees of consideration of the pros and cons across these three groups should be seen. More specifically, the former drivers who decided to stop driving of their own accord might emphasize the pros of stopping over the cons of stopping and the former drivers who were forced off the road might show less consideration of the pros. Some evidence of this can be seen.

For instance, it appeared that former drivers who stopped driving voluntarily had considered both the pros and the cons of stopping driving and typically the pros of stopping driving seemed to outweigh the cons of stopping driving. The following thoughts of one former driver are representative of the kinds of statements relevant to weighing the pros and cons of stopping that were made by the former drivers who stopped driving voluntarily:

I don’t have to worry about having a repetition of what happened to begin with, and therefore maybe killing someone or maybe hurting someone. And there’s also the lack of expense of operating a car. And there’s also, well just generally worrying about the upkeep and the maintenance and stuff that you have to go
through every day when you’re driving a car. It takes a little getting used to when you’ve had a car at your beck and call for a number of years, but to me anyways, if you’re mature enough and you think about the positives as opposed to the negatives, there isn’t any choice.

However, a few former drivers who decided to stop driving on their own seemed to put relatively equal consideration into both the pros and the cons of stopping driving. One former driver’s description of the financial implications of travelling outside of Victoria with and without a car provides an example of relatively equal weight being placed on both the pros and cons of stopping driving:

If I’m travelling, well there’s plus and minus to this. Every year I go to England because my mother’s still there. It means going the day before because it can take you pretty well, from Duncan it’s a terrible place to go anywhere. It’s really bad to go anywhere from. So it takes you pretty well all day to get over to Vancouver so you might just as well stay the night and fly out the next day, even if it’s late afternoon when you fly. … But then I’ve only got the cost from Duncan to Victoria because that’s Greyhound and you have to pay that; otherwise, I’ve got a bus pass. If I had a car, I’d probably drive it over like I used to and leave it in Park and Fly. So that would be an extra $50-$60 on the ferry, $100 and something, depending on how long I’m gone for the parking. It pays for the hotel there and back. … Well you know, either way, it costs me about the same, but it’s more comfortable.

Surprisingly, there was one former driver who had difficulty coming up with any pros of stopping driving, despite having made the decision to quit on his/her own. When asked about the advantages of not driving, he/she described great difficulty adjusting:

Well, at this moment I’m not sure. Other than a clear conscience, is there an advantage of not driving? It’s um; I’m working on it - the whole thing. It takes much more physical energy um and uh, much more time. I’m quite active and I am lucky living not too far from the university because there are buses that come out of here. But um, there are some places that the buses just don’t go to. And uh, the number 7, which right goes down Fairfield to go into, goes down Foul Bay to Fairfield to go into town, only runs Monday to Friday. I mean it’s primarily for UVic and Camosun and it interests me about all the people who live down in that section because it means that on Saturday and Sunday that there is no one, no bus for them. So, I’m, I’m quite fortunate and able, being able to get a bus from that way. And as I say, I do, I am considered handicapped in the sense that I have my card and I can use the uh, Handy Dart, which of course the demand is greater than
the supply. They are very good uh, but it’s a little hard to get it when you really want it. And I do have taxi savers, but I’m afraid I belong to a generation that is not accustomed to using taxis.

These and several other selected examples of considerations of the pros and cons of stopping by former drivers who stopped driving voluntarily are summarized in Table I - 8 of Appendix I.

In contrast to former drivers who stopped driving voluntarily, the process of weighing the pros and cons of stopping by former drivers who stopped driving involuntarily was uniformly and extremely one-sided. Only a few of the former drivers in this study were forced off the road, but when asked about the advantages of stopping driving they all responded with statements such as, “It’s the most negative thing that’s happened to me since I retired” and “I might just as well stopped saying thank you because they’ve taken it all away and I didn’t think driving was that important, but it sure as hell is to me”.

In this study, statements made by current drivers that were relevant to decisional balance were mixed. Many current drivers made statements that emphasized both the pros and the cons of stopping driving, demonstrating that many current drivers consider the pros and cons of maintaining their driving and of stopping their driving. For example, one current driver stated:

Well, pretty important. It’s the difference between independence and you know, depending on the kindness of strangers who offer and family and far too many people for rides or taxis. It’s very limiting I would imagine if you couldn’t just hop in your car and go and do something. I can walk a lot of places, like to here, because I live in Gordon Head. Luckily I can do a lot of walking, but it’s generally take away... I don’t know what I’ll do, but I’ll have to adjust, I suppose, when the time comes.
However, some current driver’s statements seemed to consider only the cons of stopping driving. These current drivers made statements like “Oh, I think it’s fine. It can’t hope to compete. There’s no way it can put itself forward as a substitute for older people when they’re unable to drive”. This comment may reflect someone who is further away from stopping driving. Selected examples of quotes made by current drivers involving consideration of the pros and cons of stopping driving can be found in Table I - 9 of Appendix I.

**Awareness**

According to TM, for a person to progress through the stages of behaviour change, from precontemplation to action, they must be aware of the need to change the problem behaviour. The influence of awareness of these factors on driving restriction and cessation is presented by comparing the statements made by three groups of participants: 1) the current drivers, 2) the former drivers who stopped driving voluntarily, and 3) the former drivers who stopped involuntarily. If driving behaviour change fits within the TM framework, awareness of a need to change should be required to progress from driving without restrictions to stopping altogether. In this section, the three types of awareness’ themes that emerged are discussed: 1) recognition of age-related limitations that may influence driving; 2) awareness of the risk and responsibility associated with driving, and 3) awareness of driving ability. Within the TM framework, former drivers who stopped driving voluntarily should be more aware of these three factors because they decided to change their driving behaviour; while, former drivers who stopped driving involuntarily should be less aware of these factors because they did not decide to change their driving behaviour.
Many current drivers, who described making restrictions to their driving, appeared to recognize their age-related limitations that may have influenced their ability to drive safely. Both current and former drivers reported a variety of declining sensory, physical and cognitive abilities as age-related limitations that might affect their driving. As discussed in a previous section (Question 1a), many current drivers reported imposing their own restrictions on their driving. Some of these drivers also reported that their reason for these driving restrictions was to compensate for age-related declines and to maintain their safe driving ability. For example, one current driver described his/her general awareness of age-related declines and the restriction he/she placed on his/her driving to compensate:

*You have to realize that you are not 100% and you work around that.* For instance, as you said…I come down to Victoria once a week to work with my daughter in her business. And I don’t leave until I know the traffic is not the commuter traffic because that’s horrendous.

Some current driver also described a need to be aware of age-related declines that would push them to stop driving in the future. For instance, when discussing stopping one current driver pointed out, “It’s something which is inevitable. It’s only a matter of time before we have to recognize that we cannot continue to drive because it’s no longer safe”.

In a similar manner, current drivers’ awareness of the risks and responsibilities associated with driving appeared to influence both their driving restrictions and their thoughts about stopping driving. For example, one current driver reported that he/she avoids driving other people because he/she worries about the risk of injuring his/her passengers and the responsibility he/she has for ensuring he/she does not. When talking about the possibility of stopping driving, he/she provides this account: “I find it will be
very difficult; however, responsibility comes into this and one would not want to endanger first of all, my wife, friends. I don’t drive other people. Very rarely.” Another current driver, although not thinking about stopping driving, is aware of the risk of injury that could result from poor driving and feels that he/she will know when to quit in the future. He/she explained, “Well I would rather not stop because of the inconvenience, but it’s not an emotional thing with me. If I felt I was getting dangerous I would sure quit right away because I don’t want to hurt anybody else or myself.

In addition, awareness of one’s driving ability might also influence current drivers’ thoughts about stopping driving. One responsible current driver expressed his/her concerns about staying aware and maintaining his/her driving ability:

I don’t ever want to, it’s not a criticism of you personally, but I don’t want to ever feel I’m so confident I know I can go on driving. I always want to be aware that I could have a problem and that’s why I go to Young Driver’s. And if I ever got to the point where I began to feel agitated when I drove, then I would know I have to quit.

With the current drivers, instances of a lack of recognition of age-related limitations that might influence driving, driving ability, and the risks and responsibility associated with driving were not identified. Selected quotes from current drivers related to awareness of age-related limitations that might influence driving, of risks and responsibilities of driving and of driving ability are summarized in Table I - 10 of Appendix I.

Awareness of age-related limitations appeared to factor into the decision to stop driving and into turning down the possibility of starting again. For example, one former driver consideration of starting to drive again provides a representative example of many of the former drivers’ statements regarding age-related declines:
Well you know when I saw my driver’s; I didn’t know it was still good. I thought it expired but it doesn’t expire until next April and when I looked at it I thought, “Gee you know, I could drive.” And the next thing I said is, “Don’t be an ass. You couldn’t drive. Your reflexes are dull; your vision isn’t that good. How can you even think about it?” This is just me talking to me.

Awareness of age-related limitations on driving also appeared to affect the driving restrictions former drivers made while they were still driving. For example, another former driver, who stopped driving of his/her own accord, demonstrated how awareness of declining sensory abilities affected his/her avoidance of night driving:

It uh, it’s not an absolute you can’t drive at night. It’s just you feel very uncomfortable that is. … There is some sort of grey areas to it. And then I think, as time goes on, I mean do realize it, but you will become more accustomed. Your habits change a little bit. This just the way it is.

Some former drivers, who stopped driving voluntarily, also seemed to lack awareness of their age-related limitations that might influence their safe driving ability. For instance, one former driver who was unaware he/she had suffered a stroke and whose doctor suggested he/she stop driving described his/her lack of awareness of any need to stop:

I was still driving, with my wife's shopping here and there, going Sunday to church and weekdays. I said, nothing happened. I would say, “I feel normal. Why should I stop?” But until he said, “Should anything happen, I can lose my driver’s license anyway.”

Another former driver with Multiple Sclerosis provided some contradictory statements that suggested that he/she only had some awareness of his/her disease-related limitations. For example, he/she made statements that suggested there was no reason he/she shouldn’t be driving:

Oh no, I can still drive. But it’s the left leg is the one that’s originally involved in the MS and it looks like the right leg might have kicked in along a similar nature. Because the left leg drags a little bit and the right leg has been my main standby, but it started to act up here about oh, two or three months ago. Yeah, I was advised by my doctor to just stop driving. So that was the reason for it. It’s strictly – I can still drive no problem.
As far as I’m concerned, I’d still be driving now. I still have a lot of faculties as far as the driving is concerned. No problem driving, parking, whatever”.

The man/woman also noted that the reason he/she could drive for as long as he/she did was that he/she was in “… terribly good health, good faculties as far as eyesight was concerned, hearing was concerned. Basically healthy. Physically healthy”.

At the same time, the man/woman appeared aware of physical limitations that made stopping driving, as suggested by his/her physician, the appropriate decision:

I had a couple of situations with the right leg giving out. That’s the one you use for the gas and for the brake there, so with my little buddy there riding with me in the car, I can’t take a chance on her life and my own life too.

No, because I think with MS, you know, you’re fooling around with the brain and that and I think even hand controls…actually I’m not interested in driving. We’ve made our final decision. No problem.

The man/woman seems to be aware of the risk and responsibility of driving, but less aware of the physical limitations that may influence his/her driving ability. Typically, former drivers, who stopped driving on their own accord, seemed aware of the risks and responsibility of driving. For example, one former driver noted, “Now my mind is made up and I thought I’m being reasonable, and not making judgements and hell, I can do this and ignoring it, that I know what the risks are”. Selected examples of awareness related statements by former drivers who stopped driving voluntarily are provided in Table I -11 of Appendix I.

In contrast, former drivers who were forced to stop driving seemed to be unaware of the age-related limitations on driving. In this study, only a few former drivers stopped driving involuntarily, but they uniformly showed a lack of recognition of the age-related declines that might affect an older adult’s driving. For example, they made statements
like “Seniors are all good drivers” or “No, it’s not fair at all. Three of us here, we’re all good drivers. We’re seniors”. A former driver who participated in a focus group with two other former drivers he/she had never met before made the latter statement. Their lack of recognition of the age-related limitations that may affect driving is demonstrated by their assumption that every senior is a good driver.

As a group, the involuntary former drivers’ lack of awareness of their driving ability was even more evident. For example, one former driver whose driving ability was questionable seemed completely unaware of any problem. This can be seen clearly from a selection of comments he/she made about how he/she failed his/her driver’s test.

So I go out and I take my test and I flunk it. Now why did I flunk that test? I flunked that test because no where in the book, no one ever said anything to me, in all the years I’ve been driving, well I guess somebody did once, about looking over your right shoulder. So if you see a bicycle that’s coming up on the right hand side, you can stop or move. I thought, well, okay I’ve heard about that, but that’s it. So I’m flunked for that again – or not again, but I’m flunked for it by the guy. I thought I was doing great, you know, coming up to the stop sign and all the rest of it. I thought I was doing, hey, hey, we’re going to pass today. That wasn’t the case. I flunked it. So he told me that what I did, once again. Right, turn your head to the right so you can see the bicycle guy coming up on the right hand side.

Well my God, if that flunks you, and I’ve been driving, watching bicycles and God knows what else, all my life, you know, what other little trick are they going to have up their sleeve you know?

Now the only thing is, I haven’t received, or my doctor, if he had, he never said anything, received a report on the health report. I never received anything on that. Well I don’t know whether he has or whether he hasn’t. He’s never said anything to me. So I thought well, probably it has something to do with this test. So I thought well, we’ll wait and see. So when we finished this test, the guy said – he was very nice about the whole thing – but the point is, that if you’re going to take a test and they test you on something, completely, well you’re not familiar with it, I mean you do it automatically, you know. I don’t know. It’s a very strange way. I don’t know whether they’re trying to catch you or not. The idea as far as I am concerned about a driving test, is to see whether you can drive your car or not, and what you do if somebody pulls up in front and so forth, etc. etc.
The statements demonstrate that the man/woman was unaware of the importance of shoulder checking and believed that drivers should be warned if they are going to be tested on something unexpected, even though checking blind spots is a technique that everyone should know about and is required to perform to drive safely. Another former driver made similar statements showing he/she was unaware of the need to increase speed to merge onto a highway. Thus, these former drivers seemed unaware of their driving abilities and of any age-related limitations that might influence their driving and also did not make the decision to stop voluntarily. In fact, all of the former drivers who were no longer driving because they failed multiple driving tests showed lack of awareness of these issues as demonstrated by their strong determination to regain their license. For example, one man failed his driver’s test six times and still felt there was any reason he should not be driving. Refer to Table I - 12 of Appendix I for selected examples of the lack of awareness of former drivers who stopped driving involuntarily.

The unique case of a former driver, who started driving again between the time of recruitment and time of interview, provides an interesting example of a moderate level of awareness. For example, the man/woman explained that he/she had made several restrictions to his/her driving:

I try to stay to certain roads, follow certain roads, and when I went on a new road, I had a great deal of trouble. I’m much slower than I was. I can’t see the road signs as they flash by. I’ve got to go slow on a new road. A road that I know, I know where the stop signs are and everything is. I can remember that fairly well. But I know where everything is and I can drive much easier on a road that I know. I adjusted to that.

Well there’s going to be times when the roads are slippery and I’m not going to be as good – I’m not near as good a driver as I used to be. I’ll admit that right off the bat. So if the roads are icy, I’m going to have to take the bus. But the plain ordinary roads, I can drive very well yet.
Well if you drive down the road and you can’t see, I have to go slower. You change your driving habit to, you have to adjust somehow so you can find the road. And you know that you’re going to do that, so adjustment is in order.

Thus, the man/woman was aware that he/she needed to restrict his/her driving to compensate for his/her declining driving ability (e.g., avoiding icy driving) and for his/her declining sight (e.g., driving on familiar roads). However, he/she seemed unaware of the fact that relying on his/her memory to compensate for his/her declining sight might not be sufficient. He/she was not accounting for any unexpected events that could occur and the danger of not being able to see them; thus, demonstrating some lack of awareness of the risk and responsibility driving involves.

**Thoughts about Stopping**

TM’s stages of behaviour change are defined by intentions to change in early stages of change (e.g., precontemplation, contemplation, and preparation) and by actual behaviour change in later stages (e.g., action and maintenance). In this section, the participants’ thoughts about stopping driving are reviewed to see how intentions to stop driving varied across the three driver groups (e.g., the current drivers, the former drivers who stopped driving voluntarily, and the former drivers who stopped driving involuntarily). Two types of thoughts about stopping emerged from the data: 1) inevitability of stopping driving, and 2) plans for stopping driving. The latter was included in this section because plans for stopping driving imply a serious consideration for the possibility of stopping driving. Some participants expressed these types of thoughts, while some did not.
Although support for intentions or thoughts about stopping driving in the future (e.g., linked to a specific timeline) was not seen, many of the current drivers made comments that demonstrated that they knew the time could come when they would need to stop driving. These statements did not involve any consideration for when they would need to stop. For example, one driver made a comment about his/her thoughts about stopping driving that was representative of other current drivers who had thought or felt that driving cessation was inevitable with increasing age. He/she noted:

Um …When it comes time that I can’t drive anymore, I won’t drive anymore. Um, I certainly will miss my car. I will miss the independence. There is no doubt about that. But no, I really don’t have more than I certainly have thought about it, but I don’t dwell on it.

Some current drivers demonstrated a more serious consideration of stopping driving in the future by making preparations for stopping or for planning to make preparations to stop driving in the future. Again, these statements did not involve any consideration for when the driving cessation would occur. This can be seen through another current driver’s thoughts about stopping driving:

Well, it’s very important to me especially now that I’m on my own. One of the reasons, I lived in Dean Park for 16 years but I bought this place a year and a half ago simply because I realized I might need to be close to Thrifty’s grocery store and shopping and all the rest of it. I had to face the fact that maybe I will lose my licence one day though I think I’m in better shape than most octogenarians. That was the whole reason for buying this place.

In contrast, there were some current drivers who had put little or no thought or preparation into stopping driving. Some of these participants noted that they would not consider stopping driving until their driving declined. For example, one participant reported, “I haven’t really thought too much about it, although it’s clearly an inevitability. Despite your prognostications in the test last week, I still think I’m reasonably
competent”. He/she is referring to another study he/she participated in where he/she exhibited poor performance on a computer driving self-assessment tool. One current driver provided a detailed explanation of how neither he/she nor his/her partner had made or given any serious consideration to planning for the possibility of stopping. The following comments by this man/woman demonstrate his/her thought process:

I don’t think there was any life-changing event. It’s not quite the way of responding perhaps, but in preparing for and planning for retirement, it was, neither my [partner] nor I factored in that we might not be able to drive for very long. We took it for granted that we’d be able to do that, that we’d be able to continue driving. So it became pretty well an extension of what we’d been doing for many years. We’ve been a two-car family for as long as I can remember. And as such, we’ve been able to do things together and do things separately and in the later years since I retired, there has been, it’s always been a given that we’d be able to drive with little consideration that we’d not be able to do it. And to that extent, we have not really prepared anything by way of a strategy I don’t believe for the event that one or both of us having to stop driving.

I thing it’s, one of the things that we’ve been able to do over the last ten years or so is to have more discussions with our friends about the business and the process of driving and to see how our friends have reacted to it. And in some cases, they’ve given up driving for a variety of reasons; finances may be one, physical ability may be another. But some of our friends like us, say, well if the weather’s really bad, we won’t go out. We won’t go to whatever it was that we were planning to do. So I will say that they will prefer not to drive at all after dark because of the various constraints that they see and so on. And I guess the fact of seeing other people change their driving habits, has sort of registered. Not really made a big impact, but we’re still pretty well taking it for granted that we can continue to drive and continue to drive safely. So I don’t think we’ve tried to plan for what would happen if we were unable to continue driving.

Interestingly, the man/woman notes that despite having noticed the changing driving behaviour of his/her friends in response to aging, he/she and his/her partner had not given any serious consideration to planning for the possibility of stopping. Selected examples of the thoughts of current drivers regarding the possibility of stopping driving can be found in Table I - 13 of Appendix I.
Like the current drivers, many former drivers commented on the inevitability of stopping driving with age, and in addition made the decision to stop driving on their own accord. For example, one former driver described how he/she knew he/she would need to stop driving due to declining visual and cognitive abilities. He/she commented:

All my uh, reflexes are certainly a lot slower. My sight is not as good. I can’t think of any other reasons. It was coming. And uh, you know, I did get my license again, but I haven’t been using it. I used it for a bit.

His/her comment also demonstrated a gradual process of stopping driving in which he/she drove for some time after renewing his/her license and then stopped driving after some thought about his/her declining abilities.

Many former drivers who stopped driving voluntarily made preparations for stopping driving. For example, one couple’s plans demonstrate not only serious consideration for stopping driving, but also intention to stop driving. The following comment shows their thought process:

Well the cost came into that. The cost didn’t warrant having it. It didn’t make sense. And it meant that I sold my house there and moved downtown where I don’t need it. … Yeah, I mean that’s why I moved.

Some former drivers who stopped driving voluntarily did not show much or any thought about stopping driving before they made the decision. For example, one former driver noted that he/she had not thought about stopping driving and added, “When I stopped, I stopped”. Selected examples of quotes documenting the thoughts about stopping from former drivers who decided to stop driving voluntarily are provided in Table I - 14 of Appendix I.

In contrast to the current drivers and to the former drivers who stopped driving voluntarily, the former drivers who stopped driving involuntarily showed little evidence
of any type of thought about stopping driving. In fact, the focus of much of their discussions centered on resuming driving. For example, the former driver who had recently started driving again noted that not only had he/she not put any thought into stopping before he/she failed his driving tests, he/she had also put all his/her effort into getting his/her driver’s license back. Another former driver, who had failed his/her driver’s test multiple times, noted that he/she had “no reason to give up my, stop my driving at all”. Refer to Table I - 15 of Appendix I for selected statements regarding the lack of thought about stopping driving seen in former drivers who stopped driving involuntarily.

**Other TM Components**

In this section, evidence of other minor components of the TM model, including cycling from stopping to starting driving and the internal and external factors specific to the problem behaviour, are presented briefly. According to TM, cycling through the stages of behaviour change is possible. To investigate this possibility, former drivers were asked if they might start driving again and if so, under what conditions. Several participants provide examples of actual cycling through stopping driving and starting again, rather than just thoughts about resuming driving. One former driver who failed his/her driving test but was recently re-licensed provides an example of someone who had cycled between stopping driving and driving again several times. One former driver who stopped driving voluntarily provided another concrete example of cycling between driving and stopping driving. Interestingly, he/she indicated that he/she had no intention of buying another car, but that he/she planned on renewing his/her license again. Moreover, he/she had actually driven other people’s cars on three separate occasions.
Many other participants, but not all, could describe circumstances although sometimes very unlikely in which they would resume driving. For instance, the former drivers who stopped driving involuntarily all indicated a strong desire to be re-licensed and to resume driving again. However, their efforts thus far have been unsuccessful. One of these former drivers reported, “Well personally, I’d like to begin driving right away and they can set any conditions they want, as long as I can move the car”. Many former drivers who stopped driving voluntarily reported that driving again was unlikely, but surprisingly, noted they would drive again in the case of an emergency. Other former drivers who stopped driving voluntarily reported seriously considering starting to drive again. For example, one former driver noted, “We have been toying with the idea that maybe we might buy a car again seeing as I still have a driver’s license”. Thus, the possibility of driving again was a consideration for many of the participants, although only in extreme circumstances for some.

Although there was considerable evidence from former drivers of the possibility of cycling between stopping and driving again, other former drivers reported that they had either no plans or no intentions to resume driving. For many of these individuals awareness of the risk and responsibility of driving seemed to play a major role. For example, when one former driver was asked whether he/she might start driving again, he/she made the following statement:

Well, because I have stuck to my original decision that I can’t risk killing somebody to get – I’ve still got an active driver’s license but I’ve never used it since that day. I’ve never driven since that day. Somebody said, “Oh, you’re just obsessed.” But it isn’t that. It’s that I honestly do believe I don’t have the right to threaten somebody else because I have a problem.
Another component of TM involves the internal and external factors specific to the problem behaviour. When asked about their reasons for restricting and for stopping driving altogether, the current and the former drivers described many factors in their internal (e.g., within them) and external (e.g., external to them) environments. In addition, the relative influence of these two types of factors on a person’s driving behaviour change (e.g., restriction, cessation) seemed to vary across individuals (e.g. the contribution of these internal and external factors and their combination). The specific reasons given for restricting and stopping driving altogether are discussed further in the next section (Research Question 2).

**Research Question 2: Why do older adults restrict their driving or stop driving altogether?**

In this section, the reasons older adults give for restricting their driving or stopping driving altogether are presented. These reasons have been divided into two groups of factors: those in the internal and external environment. External factors are factors outside of the individual, such as finance, unsafe driving incidents (e.g., accidents or near misses), the influence of others (e.g., family members, doctors, other drivers), the environment, and lifestyle changes. Internal factors are factors from within the individual, such as declining abilities (e.g., sensory, cognitive and physical declines), health (e.g., medical conditions), and psychological factors (e.g., concern about safety, discomfort, lack of pleasure/enjoyment).

The findings related to the reasons for restricting driving or stopping driving altogether are grouped by driver type and are discussed within three sections:
1. The reasons given by current and former drivers for driving restrictions that were identified as avoidance of difficult driving situations (Question 1a);

2. The reasons given by current and former driver for driving restrictions that were identified as other self-imposed driving restrictions (Question 1a); and

3. The reasons given by former drivers for stopping driving altogether.

Reasons for Avoiding Difficult Driving Situations

Both current and former drivers provided a wide variety of reasons for avoiding difficult driving situations. There did not appear to be any unique reasons reported for specific avoidance strategy (e.g., avoiding night driving, avoiding heavy traffic). The discussion of visual reasons for driving restrictions illustrates this point. Although declines in visual abilities were frequently reported by participants as reasons for avoiding driving at night, they were also reported as reasons for avoiding driving in rush hour or heavy traffic, on the highway, and in unfamiliar areas. For example, once current driver described visual reasons for avoiding driving at night: “I think they’re health related. Eyesight. … Hearing. … As they get worse, driving is more trouble, become more trouble. So you have to avoid situations. Not drive at night, if you can”.

Meanwhile, one former driver reported visual-related reasons for avoiding driving in heavy traffic and rush hour. Psychological factors, such as discomfort, concerns about safety, and lack of pleasure, were also commonly reported by participants for a variety of avoidance strategies. For example, one current driver described his/her lack of pleasure and desire to drive in heavy traffic:

Well I think it’s the same sort of thing as not feeling like going driving down in heavy traffic. I have probably stopped driving in downtown Vancouver now, or rather all over the island, in Victoria anywhere I like apart from the ferries really.
But I think I could do it. I could do it if I had to do it, but I wouldn’t enjoy doing it now.

External factors, such as the poor driving of others and less need to drive, also influenced many of the participants’ avoidance strategies. For example, many current drivers reported that they avoided driving in bad weather because there was no need for them to drive. For example, one current driver noted:

… Bad weather. Poor road conditions, for example, if we’ve had a snowstorm and the roads haven’t been cleared, that sort of thing. We don’t need to do this now, let’s wait until the road’s clear and then we’ll go.

Many former drivers and current drivers alike reported that the poor driving of others influenced their avoidance of certain driving situations. For example, one former driver explained that he/she avoided highway driving because “…I wouldn’t trust the people unbeknown just by a license number or vehicle colour and they got some fools on the road, and I don’t want to be subject to that”.

Often combinations of factors were reported as reasons for avoiding specific driving situations. Table I - 16 of Appendix I provides several examples of the wide spectrum of reasons reported by older current and former drivers for avoiding difficult driving situations. For each type of driving avoidance, only one example of each type of reason is provided.

**Reasons for Other Self-Imposed Restrictions**

When reasons for driving restrictions identified as other self-imposed driving restrictions (Question 1a) are examined, similar findings to the reasons for avoidance of difficult driving situations can be seen. Once again, a wide variety of internal and
external factors are reported as reasons for these other self-imposed restrictions. In addition, the reasons for restrictions do not appear to be specific to particular driving restrictions. Many of the same reasons for restricting are provided for multiple driving restrictions.

There were many external factors reported by older current and former drivers for their self-imposed driving restrictions. These reasons included reducing environmental impact, lifestyle (e.g., less need, other alternatives to driving available, more time available), the influence of others (e.g., driving courses/instructors, driving behaviour of other drivers, significant other available to drive), and the rules and regulations of driving. For instance, one former driver described environmental reasons for advanced planning for his/her driving trips:

I plan in order to save distance. For instance, this morning I had five places I had to be, and I timed it so that I could be at the one that was going to take quite a bit longer, but so that I wouldn’t have to retrace my steps. And I do that probably more than I used to because I was not as aware of the impact on the environment when driving.

The suggestions of driving instructors are another example of reasons in the external environment for making driving restrictions. For example, one former described why he/she drives shorter distances:

Well, if you go and do that course that the AMA, or AAA have for seniors, I believe, 55 Plus or something, they will tell you there that an hour is all that a senior should be driving. I think that’s practically right on the money.

The participants also reported a number of reasons for self-imposed restrictions that were internal to the person. These included declining cognitive, sensory and physical abilities, health factors, and psychological reasons. For instance, one current driver indicated that he/she restricted driving to necessary activities because he/she was aware of the risk of
driving. He/she noted “As much as I enjoy driving, I don’t want to be another car on the road, perhaps causing trouble”. While one former driver reported that fatigue influenced the length of his/her driving trips:

Well I tire much easier than I used to so I try not to drive too long. I was driving that West Coast Road and that’s a terror. I mean it’s got so many curves and uphill and downhill and everything. It really plays you out.

As with reasons reported for avoidance of difficult driving situations, multiple reasons were often given for the driving restrictions identified in the other self-imposed driving restrictions category. Table I - 17 of Appendix I lists other examples of internal and external factors reported by older adults for these restrictions. Close examination of this table reveals a broad spectrum of reasons for these driving restrictions. For each other self-imposed driving restriction listed in the Table I - 17, only one example of each type of reason is provided.

**Reasons for Stopping Driving Altogether**

When asked why they had stopped driving, the former drivers reported a variety of reasons, both internal and external to them, for their driving cessation. Former drivers who stopped driving involuntarily all stopped driving because they failed one or multiple drivers’ tests. Thus, they all had external pressure to stop and as noted previously, all expressed a desire to continue driving.

External factors for driving cessation were also reported by older adults who made the decision to stop driving on their own. For example, some participants with age-related diseases that might compromise their ability to drive safely were advised by their doctors to stop driving. One former driver, who was unaware of any reason he/she should stop driving, noted:
I didn’t know why, but I had an appointment November, over a year ago with my doctor. While he was checking me out, he said, “You should….” … did he say take my car home and get somebody to take me to the hospital. I guess he must have felt that I had a stroke coming up.

Other former drivers reported that an accident or near miss was the main reason for their stopping driving. One former driver indicated that a combination of two external factors, an accident she experienced as a pedestrian and her husband’s influence, were behind her decision to stop driving. She explained:

I had an accident. Actually I wasn’t driving, but I crossed the street. My husband and I were walking and the dog, and we had to cross the street. There was no crosswalk, but I started across because I saw a couple of cars coming, but one stopped. So I went, I walked across, and the car behind came around and hit me. … And I was knocked out and spent the night in the hospital, but I was okay. But my husband thought I was too nervous to drive after that… He thought it did. I think he didn’t want me to drive in the first place. You know how men are. They used to be. I don’t think they’re that way now but… I didn’t want to and I was really upset, but I thought well, to keep peace and I didn’t need to drive that much anyhow so I just quit because he could still drive.

Another external factor, finance, also played an important part of many of the former drivers’ decision to stop driving.

…We found it necessary to sell our car. We wanted to raise some money quickly. And we thought, “Wait a minute. Could it be done that way?” And that was the first thing that came to mind – ready cash, ready cash. So we drove it over to the dealership and said, “We don’t want it any more, thank you.” And we dropped it off. And we had not thought about it before that necessity came up. We hadn’t thought about stopping, because I was driving perfectly within the law and within the realms of safety the day before I sold it.

In addition, many internal factors were identified as reasons for deciding to stop driving. These reasons included visual, physical, cognitive and psychological factors and medical conditions. As with reasons reported for driving restrictions, declining visual abilities or age-related visual conditions were among the most frequently reported
reasons for stopping driving. For example, when asked why he/she stopped driving one former driver stated:

Well, mine, really, is medically, um, in that I knew I had macular degeneration amongst other things and I knew it was coming. And then I did have one cataract done, which in itself was alright, the implant, but um, um, as I said to my doctor I don’t think my eyes like being interfered with (chuckle). And um, so that really finished me for driving. Um, I knew it was coming, but um, when you really can’t it does make a big difference. There is no doubt about it. And I also have an older car. It’s uh, it’s a Volvo. It’s a very good car, but it’s 30 years old and it’s getting old the way I am. And at the moment my daughter has it. I haven’t formally signed it over, but she has it and uses it um, not for work, but just on occasion and takes me to do my food shopping once in awhile. So, we’re still sort of working all of this out. I did it myself. I knew that I shouldn’t be on the road.

Physical factors and psychological factors for stopping driving were also fairly common. For example, one former driver noted that physical disability was his/her main reason for stopping. Lack of enjoyment and concerns about the driving of others were among the most common psychological reasons for stopping driving. For example, one former driver explained that lack of pleasure due to other drivers was the primary reason for stopping driving:

Mainly there was no more pleasure in it... Because there’s just too many people on the road who really don’t know the rules of the road, which I find frustrating. … Well, taking that into main consideration, the rest was – and I thought about it over about two years – I was basically using my car to go and get groceries and I only lived on the edge of town at that time, maybe three or four kilometres from downtown.

Cognitive and health-related reasons for stopping driving were much less common. Selected examples of the main reasons former driver gave for stopping driving are provided in Table I - 18 of Appendix I. Other contributing reasons for stopping driving are identified in the parentheses following each supporting quote.
Research Question 3: How do the reasons older adults give for restricting and stopping driving relate to specific patterns of driving restriction and driving cessation?

The third research question was meant to address the relationship between the reasons participants give for restricting and stopping driving and the typical patterns or sequences of driving restriction and cessation. In brief review, there were no typical patterns or sequences of driving restriction and driving cessation identified (Research Question 1a). In addition, an individual’s pattern of driving restrictions seemed to be dependent on the person’s unique circumstances (e.g., on both the internal and external factors that existed in each individual’s life (Research Question 2). Refer to Tables I - 16, I - 17 and I - 18 of Appendix I for a summary and selection of the external and internal factors or reasons reported by older adults for why they restrict or stopped driving. Thus, given the complexity of the experience of driving restriction and driving cessation, the lack of evidence of typical patterns of driving restriction, and the multitude of factors affecting each participants driving restrictions and/or driving cessation, it is not possible to determine whether the reasons older adults give for the restricting and/or stopping driving relate to any specific, typical patterns of driving cessation.
Chapter 6: Discussion

Research Question 1a: Are there typical patterns or sequences of driving restrictions that precede driving cessation in older adults?

Contrary to expectation, typical patterns of driving restrictions that precede driving cessation were not revealed. The lack of typical patterns likely reflects the complexity of human behaviour. An individual probably imposes (or does not impose) driving restrictions based on whether they feel specific driving restrictions are appropriate for his or her unique circumstances. Therefore, typical patterns may not have emerged because restrictions that the person deems as appropriate likely differ due to the wide variety of factors that might be influencing a person’s driving behaviour at any one time in a person’s life. This will be discussed further in subsequent sections (Question 2 and 3). In support of this explanation, the participants described some similarity, but considerable differences in their life circumstances.

Another possibility may be that participants had difficulty recalling the type, timing and sequencing of restrictions that they may have imposed on their driving as they aged or before they stopped. It is well known that retrospective self-report is inaccurate (i.e. restrictions reported may be incomplete/under-reported) and coloured by subsequent experiences (Gorin & Stone, 2001; Schwarz & Oyserman, 2001; Stone & Shiffman, 2002; Stone et al., 2000). In fact, when many of the participants were asked to reflect on this process they indicated that either the question was very difficult to answer or that they had not really thought about it before being asked. Others could not come up with examples of strategies they used to adjust their driving when asked initially, but when
provided with a common example of a strategy that other older adults used, they would agree that they also employed that strategy.

The quantitative descriptive results also reveal a similar issue. Almost 67 percent of former drivers indicated *not ever restricting* their driving before they stopped and about 53 percent of current drivers indicated that they *did not currently restrict* their driving. However, many drivers (e.g., the “gradual restrictors”, the “consistent”, and some of the “preparers”, excluding the “non-changers”) reported making restrictions to their driving with age or before they stopped when questioned and probed during interviews and focus groups. This suggests these frequencies may be underestimating the true level of restriction in the participants. It may also be that the terms “restrictions” and “strategies” do not actually trigger discussion in older adults of the driving behaviour changes that researchers consider driving restrictions. Self-report of behaviours can be influenced by question wording (Schwarz & Oyserman, 2001).

Also, if driving cessation occurs along a continuum of self-imposed restrictions (though not necessarily typical patterns) culminating in the decision to stop driving altogether as has been proposed (Dellinger et al., 2001; Lyman et al., 2001; West et al., 2003), one would expect that a greater number of former drivers would report ever restricting their driving than current drivers would report currently restricting. However, this was not found: Forty-seven percent of the current drivers reported restricting their driving; while thirty percent of the former drivers reported ever restricting their driving. Again, this may reflect difficulty with understanding the term restriction. For example, when asked if they make any restrictions to their driving a participant may indicate that
they do not, but then if asked if they avoid or prefer not driving at night, they may indicate that they do. In sum, older drivers may not see these behaviours as restrictions.

It is also possible that there was no evidence of typical patterns of driving restriction because the study sample was not sufficiently large and too dissimilar to reveal typical patterns. Those who have very similar combinations of internal and external factors interacting in their lives may in fact have quite similar patterns of driving restriction that precede cessation. Previous literature (Tables A - 1 and A - 2 of Appendix A) and the current study (Question 2) demonstrate that a wide variety of reasons are reported for restricting one’s driving to certain situations or times. One might see patterns of driving restriction and driving cessation if a large enough sample was recruited to find individuals with similar life circumstances and intrapersonal characteristics (e.g., personality, age-related declines, level of discomfort). Alternatively, if one recruited samples of people with similar characteristics or medical conditions it may be that they do proceed through similar patterns of driving restriction prior to driving cessation. For example, if a sample of visually impaired individuals was recruited one might find that they proceed through similar sequences of restrictions, such as first avoiding night driving, then avoiding night driving when wet, then avoiding bad weather at any time of day and so on, until eventually they decide to stop driving.

Although typical patterns of restriction were not found, many self-imposed restrictions were commonly reported. As can be seen by examining Table I - 1 and I - 2 of Appendix I, many of the avoidance strategies and other self-imposed restrictions reported by the current and former drivers are similar to the types of restrictions reported in existing literature (e.g., avoiding driving at night, bad weather, heavy traffic/rush
hours, highways; Baldock, 2004; Charlton et al., 2003). Restricting driving to necessary activities was very common in the current study, but is not as common in the existing literature. This strategy was often reported in combination with other strategies (e.g., avoiding night driving if there is no need).

Research Question 1b: If so, do they fit within the TM framework?

Although typical patterns were not found, two broad classes, those who changed their driving with age and those who did not, each involving two subclasses were identified. In many respects, these classes appear to fit within the TM framework. The subclasses in some ways appear to be at different stages along the continuum from precontemplation to maintenance. Alternatively, these two broad classes and four subclasses may reflect different profiles of driving behaviour change that can be grouped into similar classes, rather than a series of stages of driving restriction preceding driving cessation. In fact, the gradual restrictors are the only group that truly demonstrated progression from driving without restriction to driving with restrictions to stopping driving altogether. The fit of these four subclasses of driving behaviour change within the TM framework is discussed next.

1. Individuals who Changed Their Driving as They Aged

A) The “Gradual Restrictors”

The first subclass of individuals who changed, the “gradual restrictors” provide evidence of people who have gradually imposed restrictions on their driving progressing from precontemplation to action or maintenance. The current drivers belonging to this
group likely fall in the preparation or action stages of driving restriction and the former
drivers in the maintenance stage of driving restriction and describe gradually changing
their behaviour before stopping in a manner consistent with the TM stages. In fact, one
former driver described a gradual progression across several years from thinking about
stopping driving at night to stopping driving at night and then finally stopping driving
altogether. The progression from thought to restriction to stopping fits will with the TM
concept of moving from behavioural intention to action.

B) The “Preparers”

The second subclass, the “preparers” also show intention of stopping driving in the
future because they are making or have made specific plans for driving cessation. The
current drivers classified as “preparers” appear to fit into the preparation stage of TM;
while, former drivers demonstrated intention to stop driving in the future though
advanced preparation (e.g., moved, sold car, practiced taking bus) and they are now in the
action or maintenance stages of TM. It has been found that the majority of older adults do
not plan for cessation (Charlton et al., 2003; Oxley et al., 2004; Rudman et al., 2006;
Stutts et al., 2001); however, there were a considerable number of “preparers” in this
study that intended (current drivers) on making or did make (former drivers) preparations
or plans (e.g., moved, sold car, arranged Handy Dart) before stopping.

2. Individuals who did not Change their Driving as They Aged

A) The “Non-Changers”

The first subclass of individuals who did not change, the “non-changers” reported
never or only making minor restrictions or changes to their driving before stopping. The
current drivers appeared to be in the precontemplation or contemplation stages of TM. These drivers may not have been intending on stopping driving in the future (e.g., precontemplation; Prochaska & Velicer, 1997) or they may intend on doing it in the future, but are not currently taking any action (contemplation; Prochaska & Velicer). The former drivers who stopped suddenly without ever intending to stop driving or making any changes to their driving appear to have skipped through the stages. Stage skipping is not expected to occur in TM (Littell & Girvin, 2002; Prochaska, DiClemente, & Norcross, 1992), but seems to be a likely possibility for this subclass of drivers. Although not progressing through the stages appears to be evidence against the use of TM in the driving behaviour change context, it is also plausible that these individuals were never aware of a need to change their driving. According to TM, awareness is a prerequisite for progression through the stages of change (Prochaska & Velicer); thus, lack of progression without increased need to change fits with the model.

The interaction of internal and external factors in a person’s life prior to sudden cessation, may have not lead to an increased awareness (or need, desire, intent to change) until sudden internal or external cue(s) came into play and forced a decision or a quick thought process. West (2005), in his criticism of TM, points out a relevant limitation of TM: “behaviour change [can] arise in response to a trigger or event in apparently unmotivated individuals”. One possibility is that prior to an unexpected sudden trigger or event the individual had no reason to consider stopping driving.

One issue concerning whether applying TM to driving behaviour in older adults is appropriate relates to the fact that driving is not necessarily a problem behaviour requiring change. Some of the non-changers may have never had reason to change their
driving before something external pressured them to stop. In fact, many older adults remain safe drivers and may not have any declining abilities requiring self-regulation of their driving. As Kostyniuk et al. (2000a) suggests driving becomes a problem behaviour needing change, when other factors such as declining abilities adversely affect driving ability. One could also speculate that former drivers who stopped driving suddenly without imposing restrictions may in fact go through thought stages, but very rapidly (e.g., minutes, hours etc), but ultimately the only behaviour change they make is cessation, without prior driving restrictions. Alternatively, one could interpret the non-changers as a group of drivers who do not progress through TM stages.

B) The “Consistent”

The second subclass of individuals who did not change, the “consistent”, like the “non-changers”, show minimal support for and some evidence against TM. The current drivers who always restricted their driving throughout their driving history could be considered in the action stage because they are actively restricting their driving. Alternatively, since they have never changed their behaviour they could be considered precontemplative or contemplative. They are restricting their driving as they always have done, with (contemplation) or without intention (precontemplation) of stopping driving in the future.

Former drivers in this subclass, on the other hand, have changed their behaviour because they are no longer driving (e.g., action or maintenance). Throughout their driving history they restricted their driving, but it was not because they were intending on stopping driving in the future, but rather a consistent approach they have always applied to their driving. If intention to stop driving was evident, despite the absence of gradually
increasing self-imposed driving restrictions, then the process of driving cessation could still be seen to occur within the TM model. For example, an individual could report that they have always driven slowly and avoided rush hour (e.g. this would be their initial behaviour; precontemplation), then some event or factor could lead them to consider stopping driving (e.g., contemplation, preparation) and then ultimately they might stop (e.g., action), but all the while they were restricting their driving.

It is impossible to determine if these individuals went through any sort of thought process about driving with or without driving restrictions earlier in their driving history. This was not asked directly and even if it was, the older drivers would likely have difficulty recalling something from that early in their driving history. However, this would be very difficult to measure in a cross-sectional study relying on self-report and internal thoughts processes are difficult to measure in the first place. Although there was no evidence of this, one could also speculate that some thought process (e.g., precontemplation, contemplation) occurred, though perhaps brief, prior to deciding to impose certain restrictions/use certain conservative driving strategies throughout life. TM requires that an individual to progress through the stages in an orderly fashion and it is impossible to tell from this study, whether the “consistent” did.

**Weighing the Pros and Cons of Stopping Driving**

The decisional balance component of TM appears to be well supported by the results from this study. The current drivers appeared to be able to consider both the pros and cons of stopping driving. Former drivers who made the decision to stop driving on their own (in many cases with prior driving restrictions or preparations) seemed to feel
that the advantages of changing their driving outweighed the disadvantages. Meanwhile, former driver who stopped driving involuntarily and suddenly due to failing driving test(s) did not show progression through the stages and also appeared to only consider the cons of stopping driving.

Awareness

According to TM, awareness is needed to progress through the stages of change. Many of the current drivers and the former drivers who stopped driving voluntarily appeared to be aware of age-related declines, their driving abilities and the risks and responsibility of driving. Many of these same individuals also made restrictions to their driving and/or decided to stop driving, suggesting that awareness of a need to change may have influenced whether individuals progressed from driving without restriction to driving with restriction and/or stopping driving altogether (e.g., action). In contrast, the former drivers who failed multiple driving tests also made a considerable number of statements suggesting that they may have lacked awareness of their driving ability and the risks and responsibilities of driving and may have not recognized age-related declines that might compromise their driving ability. At the same time these former drivers, did not report making restrictions to their driving and also did not progress through the stages (e.g., they skipped from precontemplation to action).

It should be noted that failing one driving test does not make a poor driver. In fact, many young adults require several attempts to pass their driver test and many older adults do not know what to expect the first time through. As such, one should not assume all those who have lost license are necessarily poor drivers. However, converging evidence from multiple failings, in addition to the types of comments the former drivers who
stopped driving involuntarily made about failing and their driving ability, it seems to suggest that these drivers were unaware of their poor driving abilities.

Thoughts about Stopping

Current drivers also made comments that showed they considered driving cessation to be inevitable. Thoughts or intentions for behaviour change in TM are linked to a specific time line (e.g., not thinking about changing behaviour, thinking about changing in the future, intending on changing in the near future). Contrary to TM, the current drivers made many comments that did not show evidence of thinking about stopping along a specific timeline. At the same time other individuals showed serious intent to change through their plan for cessation; however, again their plans were not linked to specific timeline that involved serious consideration of stopping driving in the future, but rather for the possibility of stopping at some point in the future. Again, this is inconsistent with TM.

Some of the former drivers also reported not seriously considering or intending to stop driving before they stopped, beyond noting that it clearly was inevitable that they would need to stop at some point. Consistent with TM, there were many former drivers that stopped driving voluntarily who reported that they thought about stopping before they decided to stop; meanwhile, the former drivers who stopped driving involuntarily did not appear to consider the possibility of stopping. Thus, evidence of thoughts about stopping (or intention to change) varied considerably across participants. The reasons for the variability again probably reflect the unique circumstances and factors influencing each
participant’s driving. Those who reported not thinking about stopping may have not had sufficient evidence of reasons to consider stopping.

**Other TM Components**

Current conceptualizations of TM allow for spiralling/cycling through the stages of change in an invariant order. It was not expected that this would occur in the context of driving cessation; however, there were a few former drivers who showed evidence of cycling and there were others who indicated that driving again in the future was plausible. As such, temptation (e.g., urges to relapse into the problem behaviour) appeared to influence some former drivers. Some former drivers were putting all their efforts into regaining their driver’s licenses, despite the possibility that multiple failures on their driving tests and lack of knowledge about appropriate techniques needed to drive safely (e.g., shoulder checking, speeding up to merge onto the highway) meant that poor driving ability was a possibility. For these drivers, driving appeared to be a problem and one could speculate that their urge to drive again is closely linked to the desire to maintain independence. This TM term only loosely fits though because driving, as noted previously, is not necessarily a problem behaviour. It also might be quite appropriate for an individual to return to driving. For instance, an individual who stopped driving for purely financial reasons and whose financial situation subsequently improved could safely resume driving again, if their driving skills and driving related abilities (e.g., physical, sensory, cognitive) were still intact. Someone who stopped due to impaired driving-relevant abilities due to a health condition may also be able to resume driving again, if their health condition resolves.
General Discussion

Another point for consideration when evaluating whether driving behaviour change in older adults fits within TM relates to whether the process of change is actually a gradual continuous process or in fact a series of discrete stages of restriction leading to cessation. In individuals who changed (prepared and/or restricted) with age, not only were the changes distinct from each other (e.g., avoided difficult driving situations differs from avoiding driving in bad weather and from selling one’s car), and from stopping altogether, some individuals were also able to put a timeline on these changes (e.g., thought about restricting night driving 7-8 year ago, then stopped driving at night 6 years ago).

In current drivers, there is also no evidence that those who are gradually imposing more restrictions on their driving are doing so in preparation for stopping driving because this was not asked directly. It seems intuitive that with an increasing number of restrictions one makes use of, eventually the ultimate restriction must be to stop driving altogether. Regardless, driving restriction is a behaviour change in itself and may promote continued safe driving and thereby, maintain quality of life and independence for longer.

TM, as it stands, does not seem to be able to account for why some individuals restrict and/or stop driving. Some interaction of internal and external factors probably influences whether driving behaviour change occurs in older adults. Awareness may play a role in this process, but does not have to. In fact, as evidenced by several participants in this study, some older adults restrict or stop driving without any consideration for the
need to compensate for declining abilities. Moreover, individuals who are in the
precontemplation stage may be resistant or unmotivated to change, or alternatively it
could be that their driving is not a problem requiring modification or the interaction of
factors and circumstances in their lives do not indicate any need to stop.

Do Other Models Provide a Better Account of the Observed Results?

In evaluating whether there is evidence for the process of driving cessation
occurring in stages within the TM framework, it is important to consider whether other
theoretical frameworks described in the literature review provide a better explanation of
the process of driving cessation observed in this study. Several of the theories have the
same issues with awareness of a problem behaviour being required for behaviour change
(Anstey et al., 2005; Kostyniuk et al., 2000a). Since the decision to restrict or stop driving
likely occurs due an interaction of internal and external factors that often, but not always,
involves awareness of declining driving ability or driving relevant abilities (e.g., sensory,
cognitive, physical functions), these models fail to account for this. A more complete
account than all three models of driving cessation would account for those individuals
who restrict or stop driving for other reasons. More emphasis on the determinants of
change, in addition to awareness, while retaining the stage structure of TM, is appealing
because it leaves the possibility of designing stage based interventions targeted at
individuals with specific needs, while focusing more on what influences a person’s
progression through the stages. As indicated by the PAPM creators, Weinsten and
Rothman (1998), their stage model is very similar to TM. Unlike TM, the PAPM
discriminates between individuals who are unaware and not changing their behaviour and
those who are aware, but still not changing. As noted earlier, Kostyniuk et al. (2000a) suggest that a model that emphasizes coping with declining abilities would do a better job than TM in accounting for driving behaviour change. However, the PAPM does not appear to provide much insight into coping with declining abilities either. Overall, the PAPM seems to provide little additional value over TM in accounting for driving behaviour change in older adults.

The preliminary model by Rudman et al. (2006) is also appealing. Although it put more emphasis on determinants of change (e.g., interpersonal, intrapersonal, environmental factors), in addition to awareness of the affect of aging on driving ability, it also placed heavy emphasis on comfort levels influencing whether an individual restricts or stops driving. The model may place too much emphasis on reducing discomfort, which did not always play a role in why the participants in the current study chose to restrict or stop driving.

**Research Question 2: Why do older adults restrict their driving or stop driving altogether?**

As can been seen by examining Tables I - 1, I - 2, and I - 3 in Appendix I, the reasons reported that older adults report for making driving restrictions and stop driving altogether are extremely diverse. The reasons reported for different types of driving restrictions appear to be consistent with self-reported reasons for driving restriction in existing literature, including visual (e.g., Charlton et al., 2003; Ragland et al., 2004), psychological (e.g., Oxley et al., 2004; Stutts et al., 2001) and lifestyle factors (e.g., Baldock, 2004; Oxley et al.). The findings are also consistent with common self-reported reasons for stopping driving altogether reported in existing literature, such as visual (e.g.,
Rosenblum & Corn, 2002; Stutts et al.), psychological (e.g., Oxley et al.; Stutts et al.), lifestyle (e.g., Hakamies-Blomqvist & Wahlstrom, 1998; Oxley et al.), and financial factors (e.g., Brayne et al., 2000; Oxley et al.), influence of others (e.g., Charlton et al.; Oxley et al.), and accidents or near misses (e.g., Charlton et al.; Oxley et al.). As found consistently in previous literature, the most common reason for both restricting driving and driving cessation in this study appeared to be declining visual function or age-related visual conditions (e.g., Ragland et al.).

The reasons reported by the participants can be divided into internal and external factors that influence behaviour change. The categories are defined as follows:

1. **Internal Factors**: characteristics of the individual such as, personality, feelings, attitudes, beliefs, thoughts, medical conditions, cognitive, physical, and sensory abilities, awareness, and psychological factors.

2. **External Factors**: factors outside of the individual, such as other drivers, road conditions, influence of others (e.g., friends, family, specialists, driving instructors), accidents and near misses, finances, lifestyle changes, and the environment.

The internal and external factors seem to interact to provide the context of an older adult’s behaviour change. In fact, many individuals reported a combination of both internal and external factors for reasons they stopped driving. For example, one participant reported that he/she avoids driving at night due to discomfort and visual-related reasons (e.g., internal factors), but also because it is less necessary for him/her to drive in such conditions (e.g., external factors). The researcher’s conceptualization of the internal and external factors affecting behaviour change differs slightly from the Veilicier
et al.’s (1996) description of the internal and external environment specific to the problem behaviour. The findings seem to support the structure proposed by Rudman et al. (2006) in which self-monitoring and self-regulation are influenced by intrapersonal and interpersonal (e.g., internal factors), and environmental factors (e.g., external factors).

**Research Question 3: How do the reasons older adults give for restricting and stopping driving relate to specific patterns of driving restriction and driving cessation?**

Since typical patterns of driving restriction and driving cessation were not found, this question is not applicable. However, it is possible to speculate briefly on the factors that influence membership to the subclasses of behaviour change described earlier (e.g., two subclasses of individuals who change their driving with age, the “gradual restrictors and the “preparers” and the two subclasses of individuals who did not change their driving with age, the “non-changers” and the “consistent”). It seems likely that one’s class of driving behaviour change depends heavily on the individual’s unique circumstance or context (e.g., internal and external factors). One can speculate that certain factors may be more prominent for each behaviour subclass. It seems likely that “non-changers” would be more likely to stop driving in response to external pressures or sudden events. For example, it may be that sudden event, such as an accident, or the onset of a sudden medical condition (e.g., stroke) leads to sudden increase in awareness of need to stop, prior to which there was no need to stop driving. Whereas, with the “consistent” it seems likely that their consistent use of driving restrictions throughout life reflects a specific personality type (e.g., conscientiousness), which also remains relatively stable throughout life. In contrast, it seems most likely that those individuals who imposed restrictions on
their driving gradually (e.g., the “gradual restrictors”) would be more influenced by increased awareness of declining abilities that require compensation to remain on the road safely. Similarly, it seems likely that those who prepare for stopping driving (e.g., the “preparers”) have some combination of internal or external factors in their lives that is sufficiently strong to suggest that driving cessation is inevitable.

**Additions to TM Model to Account for the Process of Driving Restriction and Cessation in Older Adults**

Overall, driving Behaviour change in older adults appears to fit within the TM framework. TM, as depicted in Figure 1.1, requires awareness of a problem Behaviour and intention to change. Thus, in its current form TM is able to account for the process of self-regulation (e.g., the ability to self-monitor driving ability and to adjust one’s driving behaviour accordingly; Baldock et al., 2006b), but not all driving restrictions (e.g., limiting or avoiding particular driving situations) or driving cessation. Driving restriction and cessation can be forms of self-regulation, but the terms are not mutually exclusive. Although it appears that most older adults restrict or stop driving altogether as a form of self-regulation, some individuals restrict or stop driving for other reasons.

Thus, several adaptations to the TM framework are suggested to provide a more complete account for the process of process of driving restriction and cessation in older adults based on the observed results. See Figure 6.1 for the researcher’s final conceptualization of the process of driving behaviour change within an adapted TM framework.

The modifications made to the TM to provide a more complete account for the process of driving cessation and the reasons for these modifications are described below:
1. The reasons for restricting and stopping driving are not always in response to awareness of declining ability (Question 2). For example, for some of the participants, reasons for restricting were primarily for environmental reasons and in some of the former drivers their reasons for stopping were primarily financial. The TM model would do a more complete job of accounting for the process of driving cessation, if it put more emphasis on the interaction of external and internal environment factors (e.g., the person’s context) that likely influences behaviour change. It seems probable that their interaction influences how or if someone progresses through stages. Moreover, feelings about stopping or restricting driving are likely involved, but TM puts little emphasis on the affective state (Littell & Girvin, 2002). It is suggested that, in addition to decisional balance, the interaction of these factors could lead to an increased desire, need or awareness of a need to change one’s behaviour (See bottom right-hand corner of Figure 6.1).

2. Since awareness is not the only reason why people restrict or stop driving altogether, increasing need or desire to change might also be seen as one progresses from precontemplation to maintenance (See top left-hand corner of Figure 6.1)

3. In the researcher’s conceptualization of the process of driving cessation within TM, the action stage is divided into either stopping driving or just simply restricting driving to maintain safe driving ability for as long as possible. The latter may not necessarily be in preparation for stopping, but can be seen as
significant change in behaviour in its own right (See the action stage of Figure 6.1).

4. The possibility of skipping stages in the model seems appropriate in the context of driving cessation. The “consistent” and the “non-changers” seem to have done so (See pathways from precontemplation to both preparation and to action in Figure 6.1).

5. Rather than having a more fixed timing of stages, as seen within other applications of TM (e.g., smoking cessation), it is felt that the speed of progression or timing of the process of cessation depends on the severity/strength of the internal or external factors interacting that bring an individual over the threshold of intention to changing or alternatively, simply the threshold of change, if early stages are skipped. For example, suffering a stroke and receiving advice to stop driving would probably result in skipping from precontemplation to action (See modification # 4) or moving through all of the stages very rapidly. Whereas, recognition of slowly declining sensory abilities might lead to gradual progression through the stages.

6. Although, TM does account for cycling from stopping driving to starting driving again, the researcher’s initial conceptualization did not. The possibility of cycling or spiralling through the stages several times has been added to the model (See the pathways from the maintenance stage to all earlier stages and the pathway between stopping and restricting driving in the action stage in Figure 6.1).
Otherwise the researcher’s conceptualization of the process remains unchanged from figure 1.1.
Figure 6-1: Conceptualization of the Process of Driving Behaviour Change after Study Completion

1. Awareness/need/desire
   - Driving without self-imposed restrictions: Not intending on restricting or stopping driving in the near future
   - Driving without self-imposed restrictions: Intending on restricting or stopping driving in the future
   - Limiting driving in certain situations: Intending on stopping driving in the near future

2. Increased pros and decreased cons of restricting/stopping
   - Characteristics internal to the person + External Factors = Context

3. Decreased pros and increased cons of maintaining driving with out restriction
   - Restrictions/preparations appropriate for person’s context
Study Limitations

The study had several limitations. First, one of the largest limitations was that it was extremely difficult to recruit former drivers. The majority of former drivers made the decision to stop driving on their own. The perspectives and the process of driving restriction and driving cessation experienced by former drivers, especially those who stopped driving involuntarily, may be underrepresented. As Adler et al. (2006) points out those former drivers who did not choose to participate in the study may have self-selected not to participate due to the nature of the experiences. Their perspectives and process of driving cessation might add something unique to the researcher’s understanding of the process of driving behaviour change.

Second, due to the difficulty with recruiting former drivers, the focus groups with former drivers were smaller than desirable. For this reason, the groups may not have fostered as much conversation as groups with six to eight participants.

Third, the sample used in the study was a convenience sample. Those who chose to volunteer might have considerably different experiences with process of driving cessation than those who chose not to volunteer.

Fourth, due to the group nature of some of the qualitative data, it was impossible to link some comments made by a participant to other comments made by the same participant. For example, if a participant talked about making restrictions at one point in the focus group and then later talked about thoughts about stopping driving, it was not always possible to match voices and therefore, comments. It would have been helpful to have the assistant moderator record each participant’s initials or participant numbers prior to their comments so that the comments made by the same participants could be
considered in unison. Complete confidence in these associations could only be assured in individual interviews.

Fifth, the questions and probes used in this study may have sparked certain discussions, but not discussion of other important issues related to driving restriction and cessation. Although the interviewer and moderators tried to probe for additional information and be flexible in their questioning, the fact remains that important information may have been missed by the chosen line of questioning.

Sixth, a former driver mistakenly showed up to one of the current driver focus groups. His frustrations with stopping driving dominated the conversation. The focus group moderator chose to let him remain in the group. In hindsight, it may have been more appropriate for one of the assistant moderators to gently explain the situation and gather his perspectives and experiences on driving cessation individually in another room. It was fairly obvious that some of the members were quieted by his involvement in the group and the conversation often went off track.

Seventh, as previously discussed, the participants were required to think back retrospectively and report on their reasons and patterns of driving restriction. This self-report may have been biased or subject to forgetting.

Last, the researcher came at the analysis from the TM perspective. She attempted to consider the TM model only after coding was completed several times through. Despite efforts to minimize the influence of her perspective, her analysis was likely influenced by her initial perspective. It is possible that other theories provide a better account of the process of driving cessation and restriction in older adults. Continued research will need to work at ruling out other alternatives and refining the researcher’s
current conceptualization of the process of driving restriction and cessation to arrive at
the best theory to account for the observed results.

**Future Directions**

Investigating the process of driving restriction and cessation, rather than just
looking at the factors or reasons associated with driving restrictions, is relatively new. In
this preliminary work, there appears to be sufficient support for TM in the context of
driving cessation to suggest that further exploration within a stage model is warranted.
Considering how important each older adult’s context (e.g., factors in both the internal
and external environment) was in determining driving behaviour change in this sample,
future work should also address whether a social ecological model would provide a better
account of the process of driving behaviour change in older adults. Social ecological
models provide a comprehensive approach to health behaviour that acknowledges the
interdependence of people, their environment and their behaviour and the importance of
multiple levels of influences on behaviour (Fleury & Lee, 2006).

This qualitative exploration was the first phase in a proposed two phase, mixed
methods design. Although patterns of driving restriction that precede driving cessation
were not identified in this first phase, some of the findings were consistent with stages of
driving behaviour change suggesting that moving onto the second phase of the study may
be appropriate. In a future study, the themes and patterns identified in the qualitative
phase will be used to design an instrument aimed at identifying the subclasses of
behaviour change and stages of driving behaviour change in older drivers. The purpose of
developing this survey is for use in a future study to estimate how many older adults
belong in the four subclasses of behaviour change (e.g., the “gradual restrictors”, the “preparers”, the “non-changers” and the “consistent”) and are at the different stages of change (e.g., pre-contemplation, contemplation, preparation, action, and maintenance) in relation to driving restriction and cessation. After the survey is developed based on the qualitative findings, it will be pre-tested with five to ten older adults using cognitive structuring techniques. This survey pre-testing will address whether the instrument is easily understood by the older drivers for whom it was designed and whether it is gathering the information for which it was intended.

Once the survey is developed, a number of future quantitative directions for research could be considered. For example, the survey could be administered to individuals in different age groups (e.g., young adults, middle aged adults, young-old, very old) in a cross-sectional study. Another alternative is to study the process through a large prospective longitudinal design following a sample of drivers throughout their driving history.

As other researchers have done, it is important to evaluate whether the restrictions older adults impose on their driving are appropriate for the functional declines or their unique circumstances. Several studies have shown that driving self-regulation does not relate to driving ability or functional declines (Baldock et al., 2000a, 2000b, West et al., 2003). Continued investigation of the process of self-regulation in older adults, including whether older adults are restricting their driving appropriately, is important.

Other future work should focus on developing interventions to promote appropriate driving restrictions. If further study finds continued support for TM in the
driving context, then interventions and educational strategies could be targeted at people at different points along the driving behaviour change continuum.

As Rudman et al. (2006) discuss, continued study of the factors that influence whether individuals decides to self-regulate may help to help to identify those at most risk for unsafe driving. Some people who are not changing their behaviour may need to, whereas, others may not. Many researchers agree that driving restrictions are a sign of intact self-monitoring (Coon & Pachana, 2006).

In conclusion, it is also important to continue to find better ways of assessing the driving ability of older adults and to investigate the factors that might influence driving behaviour in older adults. Better assessment of driving ability and of abilities that might compromise safe driving ability will help to identify individuals who are and who are not at risk of unsafe driving. Promoting self-regulation in individuals who are identified as at risk for unsafe driving may reduce their risk for crashes and other unsafe driving behaviours. In doing so, it may be possible to help older adults continue to drive by promoting self-regulation where appropriate, thereby improving older adult’s mobility and quality of life.
References


drivers from the state of Maryland. *Accident Analysis and Prevention, 38*(4), 823-831.


Appendices
Appendix A: Review of the Existing Literature on Driving Restriction and Cessation in Older Adults

Table A - 1: Percentage of Respondents Giving Different Reasons for Driving Restriction in Existing Research

<table>
<thead>
<tr>
<th>Category</th>
<th>Respondents</th>
<th>Reason</th>
<th>%</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Sensory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Current drivers aged 55 + yrs. reporting avoiding night and wet night driving</td>
<td>Visual problems</td>
<td>53 &amp;</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>Adults aged 55 + yrs. who reported limiting or avoiding driving situations</td>
<td>Problems with eyesight</td>
<td>25²</td>
<td>Ragland et al. (2004), Satariano et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Vision problems/problems seeing</td>
<td>19</td>
<td>Stutts et al. (2001)</td>
</tr>
<tr>
<td>Health</td>
<td>Adults aged 55 + yrs. who</td>
<td>One or more medical</td>
<td>31²</td>
<td>Satariano et</td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Reason for Reduced Driving</td>
<td>Number</td>
<td>Source</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
<td>-----------------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Raitanen et al. (2004)</td>
<td>Active drivers aged 55 + yrs. in Finland, Germany and Italy who reported reduced driving</td>
<td>Health reasons</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Charlton et al. (2003)</td>
<td>Current drivers aged 55 + yrs. reporting driving less than 5 yrs. Ago</td>
<td>Health/age (of self or spouse)</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Stutts et al. (2001)</td>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Health problems (other than vision)</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

**Physical/Functional Limitations**

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>Reason for Reduced Driving</th>
<th>Number</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxley et al. (2004)</td>
<td>Older female current drivers who reported reduced driving over last 5 yrs.</td>
<td>Physical reasons (e.g., movement restrictions, arthritis)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Problems with the use of arms or legs, or turning head</td>
<td>6</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Preference</td>
<td>71</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 55 + yrs. who reported avoiding driving in the rain</td>
<td>Safety factors</td>
<td>66</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Enjoyment/not comfortable driving</td>
<td>46</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 55 + yrs. who reported avoiding busy roads</td>
<td>Preference/comfort factors</td>
<td>40</td>
<td>Charlton et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Demographic Description</td>
<td>Reason for Reduced Driving</td>
<td>Study Reference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Older female current drivers who reported reduced driving over last 5 yrs.</td>
<td>Enjoyment/preference</td>
<td>39</td>
<td>Oxley et al. (2004)</td>
<td></td>
</tr>
<tr>
<td>Older female current drivers who reported reduced driving over last 5 yrs.</td>
<td>Didn’t feel as safe as they used to be</td>
<td>30</td>
<td>Oxley et al. (2004)</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 65 + yrs. who reported cutting back on driving</td>
<td>Not as safe as driver as used to be</td>
<td>28</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Current drivers aged 55 + yrs. who reported avoiding merging</td>
<td>Personal preference/comfort-related factors</td>
<td>28</td>
<td>Charlton et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Active drivers aged 55 + yrs. in Finland, Germany and Italy who reported reduced driving</td>
<td>Traffic getting too hectic for me</td>
<td>19</td>
<td>Raitanen et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Adults aged 55 ± yrs. who reported limiting or avoiding driving situations</td>
<td>Concerns about crime</td>
<td>10</td>
<td>Ragland et al. (2004)</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Adults aged 55 ± yrs. who reported limiting or avoiding driving situations</td>
<td>Concerns about being in an accident</td>
<td>9²</td>
<td>Ragland et al. (2004)</td>
<td></td>
</tr>
</tbody>
</table>

**Influence from others**

| Current drivers aged 65 ± yrs. who reported cutting back on driving | Doctor advised against driving | 5 | Stutts et al. (2001) |

**Lifestyle changes/Necessity**

| Older female current drivers who reported reduced driving over last 5 yrs. | No need to drive as often | 93 | Oxley et al. (2004) |
| Older drives aged 60± yrs. who reported they had drive | Reduction in the need to drive | 90 | Baldock (2004) |
reduced the amount of
driving they did in the last 10
yrs.

<p>| Current drivers aged 65 ± yrs. who reported cutting back on driving | Have less need to go places | 69 | Stutts et al. (2001) |
| Current drivers aged 65 ± yrs. who reported cutting back on driving | Someone else is available to drive | 61 | Stutts et al. (2001) |
| Current drivers aged 55 ± yrs. reporting driving less than 5 yrs. Ago | General lifestyle changes | 38 | Charlton et al. (2003) |
| Current drivers aged 55 ± yrs. reporting driving less than 5 yrs. Ago | Employment changes | 34 | Charlton et al. (2003) |
| Older female current drivers | Use of alternative transport | 30 | Oxley et al. |</p>
<table>
<thead>
<tr>
<th>Study Authors and Year</th>
<th>Age Group</th>
<th>Reason for Reduced Driving</th>
<th>Percentage</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raitanen et al. (2003)</td>
<td>Active drivers aged 55+ yrs. in Finland, Germany and Italy who reported reduced driving</td>
<td>I can reach and do everything by car</td>
<td>28(^3)</td>
<td>Finland, Germany, Italy</td>
</tr>
<tr>
<td>Stutts et al. (2001)</td>
<td>Current drivers aged 65+ yrs. who reported cutting back on driving</td>
<td>Other forms of transportation are available</td>
<td>28</td>
<td>Finland</td>
</tr>
<tr>
<td>Ragland et al. (2004)</td>
<td>Adults aged 55+ yrs. who reported limiting or avoiding driving situations</td>
<td>No reason to drive</td>
<td>17(^2)</td>
<td>United States of America</td>
</tr>
<tr>
<td>Charlton et al. (2003)</td>
<td>Current drivers aged 55+ yrs. reporting driving less than 5 yrs. Ago</td>
<td>Use alternative transport</td>
<td>13</td>
<td>United States of America</td>
</tr>
<tr>
<td>Oxley et al.</td>
<td>Older female current drivers</td>
<td>Changed place of residence</td>
<td>12</td>
<td>United States of America</td>
</tr>
</tbody>
</table>
who reported reduced driving over last 5 yrs.

Adults aged 55 ± yrs. who reported limiting or avoiding driving situations

Active drivers aged 55 ± yrs. in Finland, Germany and Italy who reported reduced driving

| Finances |
|-----------------|-----------------|-----------------|
| Active drivers aged 55 ± yrs. in Finland, Germany and Italy who reported reduced driving | Economic reasons | 6³ | Raitanen et al. (2003) |
| Older drives aged 60± yrs. who reported they had | Cost | 5 | Baldock (2004) |
reduced the amount of

Driving they did in the last 10 yrs.

<table>
<thead>
<tr>
<th>OTHER</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Active drivers aged 55 ± yrs. in Finland, Germany and Italy who reported reduced driving in 1998</td>
<td>Getting more and more difficult to find a parking place</td>
<td>17</td>
</tr>
</tbody>
</table>

1 Note: Reasons given by more than 5% of participants are reported in Table 1. Percentages are rounded to the nearest whole number.

2 Note: Percentage is an average of the age and gender groups (Sum of % in each age and gender group/total N)

3 Note: Percentage is an average of the three countries (Sum of % in each country/total N)
<table>
<thead>
<tr>
<th>Category</th>
<th>Respondents</th>
<th>M, C, NS</th>
<th>Reason</th>
<th>%</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory</td>
<td>Former drivers with visual impairment</td>
<td>M</td>
<td>Couldn’t see well enough to continue driving</td>
<td>69</td>
<td>Rosenblum &amp; Corn (2002)</td>
</tr>
<tr>
<td></td>
<td>Former drivers aged 60 ± yrs.</td>
<td>C</td>
<td>Problems with my vision</td>
<td>33</td>
<td>Stutts et al. (2001)</td>
</tr>
<tr>
<td></td>
<td>Former drivers aged 65 ± yrs.</td>
<td>C</td>
<td>Vision problems</td>
<td>31</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>Former drivers aged 55 ± yrs.</td>
<td>NS</td>
<td>Trouble with eyesight</td>
<td>29</td>
<td>Kington et al. (1994)</td>
</tr>
<tr>
<td></td>
<td>Former drivers aged 50 ± yrs.</td>
<td>M</td>
<td>Problems with vision</td>
<td>24</td>
<td>Stutts &amp; Wilkins (2003); Stutts et al. (2001)</td>
</tr>
<tr>
<td></td>
<td>Former drivers who Trouble seeing</td>
<td>NS</td>
<td>Trouble seeing</td>
<td>20</td>
<td>Persson (1993)</td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Older adults aged 65 ± yrs. with recently expired licenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers M  Medical problems 41 Dellinger et al. (2001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aged 55 ± yrs. who stopped driving in previous 5 yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health reasons 61² Kostyniuk et al. (2000b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NS  Health reasons 61² Kostyniuk et al. (2000b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>razed 49 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers NS  Impaired vision 11 Keefe et al. (2005)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aged 44 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stopped driving pedestrians and cars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>within the previous 5 yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers NS³ Vision problems 11 Gilhotra et al. (2001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aged 49 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers NS  Impaired vision 11 Keefe et al. (2005)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aged 44 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>Gender</td>
<td>Reason for non-renewal</td>
<td>Age Group</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>--------</td>
<td>------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>aged 55 ± yrs.</td>
<td>M</td>
<td>Ill-health</td>
<td>34</td>
<td>Charlton et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Older female</td>
<td>C</td>
<td>Major health or</td>
<td>33</td>
<td>Oxley et al. (2004)</td>
<td></td>
</tr>
<tr>
<td>former drivers aged 60 ± yrs.</td>
<td></td>
<td>medical problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>NS</td>
<td>Health or medical</td>
<td>32</td>
<td>Campbell et al. (1993)</td>
<td></td>
</tr>
<tr>
<td>aged 65 ± yrs.</td>
<td></td>
<td>problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>NS</td>
<td>Health problem</td>
<td>30</td>
<td>Kington et al. (1994)</td>
<td></td>
</tr>
<tr>
<td>aged 50 ± yrs.</td>
<td></td>
<td>(other than eyesight or hearing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former aged 65 ± yrs.</td>
<td>NS</td>
<td>Health</td>
<td>29</td>
<td>O’Neill et al. (2000)</td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>NS</td>
<td>Health</td>
<td>29</td>
<td>Brayne et al. (2000)</td>
<td></td>
</tr>
<tr>
<td>aged 84 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finnish adults who did not renew their</td>
<td>C</td>
<td>Health reasons</td>
<td>27$^5$</td>
<td>Hakamies-Blomqvist &amp; Wahlstrom (1998)</td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td>Category</td>
<td>Condition</td>
<td>Study Reference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------</td>
<td>------------------------------------</td>
<td>------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 yrs.</td>
<td></td>
<td>License at age 70 yrs.</td>
<td>Keefe et al. (2005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44 ± yrs.</td>
<td>NS</td>
<td>Illness (other than vision)</td>
<td>Persson (1993)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medical conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 ± yrs.</td>
<td>M</td>
<td>Health problems (other than vision)</td>
<td>Stutts &amp; Wilkins (2003); Stutts et al. (2001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 ± yrs.</td>
<td>C</td>
<td>Dizziness or blackout problems</td>
<td>Charlton et al. (2003)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 ± yrs.</td>
<td>C</td>
<td>Problems with dizziness, blackout, or</td>
<td>Stutts et al. (2001)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
feeling light-headed

<table>
<thead>
<tr>
<th>Physical/ Functional Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older female former drivers aged 60 yrs.</td>
</tr>
<tr>
<td>Former drivers aged 65 yrs.</td>
</tr>
<tr>
<td>Former drivers aged 55 yrs.</td>
</tr>
<tr>
<td>Former drivers with dementia patients aged 51-99 yrs.</td>
</tr>
<tr>
<td>Former drivers who NS</td>
</tr>
</tbody>
</table>
stopped driving within the previous 5 yrs.

<table>
<thead>
<tr>
<th>Former drivers aged 65 ± yrs.</th>
<th>M</th>
<th>Problems with use of arms or legs, turning head or neck</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>coordinating hand/foot movement</td>
</tr>
</tbody>
</table>

### Psychological

<table>
<thead>
<tr>
<th>Older female former drivers aged 60 ± yrs.</th>
<th>C</th>
<th>Decreased confidence in driving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Oxley et al. (2004)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Older female former drivers aged 60 ± yrs.</th>
<th>C</th>
<th>Not comfortable driving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Oxley et al. (2004)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former drivers aged 65 ± yrs.</th>
<th>C</th>
<th>Enjoyment/not comfortable driving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Stutts et al. (2001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>Category</td>
<td>Reason</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>C</td>
<td>Afraid might not be able to react fast well enough in an emergency situation</td>
</tr>
<tr>
<td>Older female former drivers aged 60 ± yrs.</td>
<td>C</td>
<td>Decreased confidence in traffic</td>
</tr>
<tr>
<td>Former drivers aged 55 ± yrs.</td>
<td>C</td>
<td>Enjoyment/ feel uncomfortable driving</td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>C</td>
<td>Felt unsafe driver</td>
</tr>
<tr>
<td>Former drivers aged 55 ± yrs.</td>
<td>C</td>
<td>Felt unsafe driver</td>
</tr>
<tr>
<td>Older female former drivers aged 60 ± yrs.</td>
<td>C</td>
<td>No longer enjoyed driving</td>
</tr>
<tr>
<td>Age Range</td>
<td>Group</td>
<td>Concern</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>60 ± yrs.</td>
<td>Former drivers</td>
<td>M</td>
</tr>
<tr>
<td>55 ± yrs.</td>
<td>Former drivers</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 ± yrs.</td>
<td>Former drivers</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 ± yrs.</td>
<td>Former drivers</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dementia</td>
<td>Former drivers with dementia</td>
<td>NS</td>
</tr>
<tr>
<td>Patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-99 yrs.</td>
<td>Former drivers who</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>Reason</td>
<td>Frequency</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Former drivers aged 84+ yrs.</td>
<td>Loss of confidence or other psychological reasons</td>
<td>18</td>
</tr>
<tr>
<td>Finnish adults who did not renew their license at age 70 yrs.</td>
<td>Frightening</td>
<td>16</td>
</tr>
<tr>
<td>Older adults aged 65+ yrs. with recently expired licenses</td>
<td>Not comfortable driving anymore</td>
<td>14</td>
</tr>
<tr>
<td>Older adults aged 65+ yrs. with recently expired licenses</td>
<td>Realization that</td>
<td>10</td>
</tr>
</tbody>
</table>
65 + yrs. with recently expired licenses
Former drivers age 55 + yrs. who stopped driving in previous 5 yrs.

<table>
<thead>
<tr>
<th>Cognitive</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Former drivers with dementia patients aged 51-99 yrs.</td>
<td>NS Memory and thinking problems (collateral report)</td>
<td>76 Carr et al. (2005)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers with dementia patients aged 51-99 yrs.</td>
<td>NS Disorientation (collateral report)</td>
<td>32 Carr et al. (2005)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Influence from Others**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Former drivers C Family or friends 31 Charlton et al. (2003)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>Type</td>
<td>Advice</td>
<td>N</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>------</td>
<td>-------------------------------</td>
<td>----</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 55+ yrs.</td>
<td>C</td>
<td>Doctor’s advice</td>
<td>21</td>
<td>Charlton et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Older female former drivers aged 60+ yrs.</td>
<td>C</td>
<td>Doctor’s or other’s advice</td>
<td>18</td>
<td>Oxley et al. (2004)</td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65+ yrs.</td>
<td>C</td>
<td>Doctor’s advice</td>
<td>18</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Former drivers who stopped driving</td>
<td>NS</td>
<td>Advice from family/friends</td>
<td>16</td>
<td>Persson (1993)</td>
<td></td>
</tr>
<tr>
<td>Former drivers with visual impairment aged 60+ yrs.</td>
<td>M</td>
<td>Ophthalmologist’s advice</td>
<td>14</td>
<td>Rosenblum &amp; Corn (2002)</td>
<td></td>
</tr>
<tr>
<td>Former drivers age</td>
<td>M</td>
<td>Someone else can</td>
<td>11</td>
<td>Dellinger et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>55 ± yrs. who stopped driving in previous 5 yrs.</td>
<td>drive me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>C</td>
<td>Family or friends</td>
<td>10</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Finnish adults who did not renew their license at age 70 yrs.</td>
<td>C</td>
<td>Someone’s advice</td>
<td>8$^5$</td>
<td>Hakamies-Blomqvist &amp; Wahlstrom (1998)</td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>M</td>
<td>Doctor’s advice</td>
<td>5</td>
<td>Stutts &amp; Wilkins (2003); Stutts et al. (2001)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lifestyle changes/ Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older female former drivers aged 60 ± yrs.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Lifestyle changes/ Necessity
<table>
<thead>
<tr>
<th>Category</th>
<th>Age Range</th>
<th>Reason for Not Renewing</th>
<th>Age (%)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older female former drivers</td>
<td>60+ yrs.</td>
<td>Someone else available</td>
<td>49</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td>renew their license at age 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>65+ yrs.</td>
<td>Someone else available</td>
<td>38</td>
<td>Stutts et al. (2001)</td>
</tr>
<tr>
<td>Former drivers</td>
<td>55+ yrs.</td>
<td>Alternative transportation available</td>
<td>31</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td>Finnish adults who did not</td>
<td></td>
<td>Didn’t need a car</td>
<td>30</td>
<td>Hakamies-Blomqvist &amp; Wahlstrom (1998)</td>
</tr>
<tr>
<td>renew their license at age 70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>Change (C)</td>
<td>Reason</td>
<td>Count</td>
<td>Reference</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>---------------------------------------------</td>
<td>-------</td>
<td>----------------------</td>
</tr>
<tr>
<td>aged 65 ± yrs.</td>
<td>C</td>
<td>Alternative transportation available</td>
<td>28</td>
<td>Stutts et al. (2001)</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>Advice from doctor</td>
<td>27</td>
<td>Persson (1993)</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>Someone else available to drive</td>
<td>21</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Retired from work (no need to drive)</td>
<td>18</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Less need (moved/alternative transportation)</td>
<td>14</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>Transportation</td>
<td>9</td>
<td>Persson (1993)</td>
</tr>
</tbody>
</table>

Former drivers who stopped driving within the previous 5 yrs.
stopped driving provided by
within the previous retirement center
5 yrs.
Former drivers NS Public transit more 9 Brayne et al. (2000)
aged 84 ± yrs. convenient
Former drivers M No longer owning a 5 Stutts et al. (2001)
aged 65 ± yrs. car

**Accidents/ Near Misses**

<table>
<thead>
<tr>
<th>Former drivers</th>
<th>M</th>
<th>Crash involvement</th>
<th>21</th>
<th>Charlton et al. (2003)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aged 55 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers</td>
<td>C</td>
<td>Accident or near miss</td>
<td>21</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td>aged 55 ± yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Older female</td>
<td>C</td>
<td>Crash or close call</td>
<td>18</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td>former drivers aged 60 ± yrs.</td>
<td>NS</td>
<td>Accident (collateral</td>
<td>15</td>
<td>Carr et al. (2005)</td>
</tr>
<tr>
<td>Group</td>
<td>Stat</td>
<td>Event Description</td>
<td>N</td>
<td>Reference</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>------</td>
<td>-------------------------</td>
<td>----</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Dementia patients aged 51-99 yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>C</td>
<td>Accident or near miss</td>
<td>10</td>
<td>Stutts et al. (2001)</td>
</tr>
<tr>
<td>Former drivers aged 44 ± yrs.</td>
<td>NS</td>
<td>Accident</td>
<td>9</td>
<td>Keefe et al. (2005)</td>
</tr>
<tr>
<td>Former drivers who stopped driving within the previous 5 yrs.</td>
<td>NS</td>
<td>Minor accident</td>
<td>5</td>
<td>Persson (1993)</td>
</tr>
<tr>
<td>Former drivers age 55 ± yrs. who stopped driving in previous 5 yrs.</td>
<td>M</td>
<td>Accident</td>
<td>5</td>
<td>Dellinger et al. (2001)</td>
</tr>
</tbody>
</table>

**Finance**

<table>
<thead>
<tr>
<th>Group</th>
<th>Stat</th>
<th>Event Description</th>
<th>N</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older female</td>
<td>C</td>
<td>High cost of</td>
<td>46</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td>Study</td>
<td>Former drivers</td>
<td>Reason</td>
<td>Age Range</td>
<td>Reference</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>-----------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Brayne et al. (2000)</td>
<td>Former drivers aged 84 ± yrs.</td>
<td>Other reasons, largely financial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O’Neill et al. (2000)</td>
<td>Former aged 65 ± yrs.</td>
<td>Expense</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Hakamies-Blomqvist &amp; Wahlstrom (1998)</td>
<td>Finnish adults who did not renew their license at age 70 yrs.</td>
<td>Expensive</td>
<td>29^5</td>
<td></td>
</tr>
<tr>
<td>Stutts et al. (2001)</td>
<td>Former drivers aged 65 ± yrs.</td>
<td>Cost of owning/operating car too high</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Kington et al. (1994)</td>
<td>Former drivers aged 50 ± yrs.</td>
<td>Could not afford car &amp; accompanying</td>
<td>18 &amp; 15</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Variables</td>
<td>Changes</td>
<td>Source</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 55 + yrs.</td>
<td>Cost too high</td>
<td>17</td>
<td>Charlton et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>Former drivers who stopped driving within the previous 5 yrs.</td>
<td>Cost of upkeep/age</td>
<td>7</td>
<td>Persson (1993)</td>
<td></td>
</tr>
<tr>
<td>Older adults aged 65 + yrs. with recently expired licenses.</td>
<td>Cost of car &amp; insurance</td>
<td>7^d</td>
<td>Kostyniuk et al. (2000b)</td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65 + yrs.</td>
<td>Cost of owning a car</td>
<td>5</td>
<td>Stutts et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>Former drivers age 55 + yrs. who</td>
<td>Changes due to aging</td>
<td>19</td>
<td>Dellinger et al. (2001)</td>
<td></td>
</tr>
<tr>
<td>55 + yrs. who</td>
<td>aging</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
stopped driving in previous 5 yrs.

<table>
<thead>
<tr>
<th>Other</th>
<th>Former drivers</th>
<th>NS/NS</th>
<th>Voluntarily stopped</th>
<th>59</th>
<th>Campbell et al. (1993)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>aged 65 + yrs.</td>
<td></td>
<td>driving</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Older female</td>
<td>C</td>
<td>Concern about</td>
<td>19</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>former drivers aged 60 + yrs.</td>
<td></td>
<td>license testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Former drivers</td>
<td>M</td>
<td>License removed</td>
<td>17</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>aged 55 + yrs.</td>
<td></td>
<td>by authority</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Former drivers</td>
<td>C</td>
<td>Could not renew</td>
<td>14</td>
<td>Charlton et al. (2003)</td>
</tr>
<tr>
<td></td>
<td>aged 55 + yrs.</td>
<td></td>
<td>license</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Older female</td>
<td>C</td>
<td>License not</td>
<td>13</td>
<td>Oxley et al. (2004)</td>
</tr>
<tr>
<td></td>
<td>former drivers aged 60 + yrs.</td>
<td></td>
<td>renewed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Former drivers age</td>
<td>M</td>
<td>Licensing or license</td>
<td>12</td>
<td>Dellinger et al. (2001)</td>
</tr>
<tr>
<td>55 ± yrs. who stopped driving in previous 5 yrs.</td>
<td>renewal problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former drivers aged 65 ± yrs.</td>
<td>C License not renewed 7 Stutts et al. (2001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Older adults aged 65 ± yrs. with recently expired licenses</td>
<td>NS License not renewed 7 Kostyniuk et al. (2000b)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Reasons reported by more than five percent of participants are reported in Table A–2. The percentages are rounded to the nearest whole number.

2 M = Main/Most important/Initial Consideration, C = Contributing/Prompted, NS = Not Specified (e.g., Question was not specific. It just asked for reason(s) or was unclear).

3 NOTE: Participants were asked if they stopped due to problems with their vision.

4 NOTE: This percentage is of the total % of reasons given and not of the total respondents.

5 Percentage is an average of the gender groups (Sum of % in each gender /total N).
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Characteristics</th>
<th>Methods</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adler et al., (1999)</td>
<td>Drivers aged 60+ yrs. (N=75, mean age 74.6 yrs)</td>
<td>MMSE; questionnaire</td>
<td>Difficult; inconvenience; mental health issues; depression; loneliness; isolation; increased alcohol use; increased reliance on others; feelings of diminished self-worth (losses of pride, independence, freedom)</td>
</tr>
<tr>
<td></td>
<td>with dementia over 60 and family members (N=75, ranging from 27 to 87).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burkhardt et al., (1996)</td>
<td>Older women 70+ yrs. (N=6)</td>
<td>Literature review, series of focus groups</td>
<td>Loss of independence; loss of spouse’s independence; isolation; depressive symptoms; increased costs; limitations on activities they can do &amp; where they can go; difficulty accepting rides from friends/family</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Study Description</td>
<td>Methodology</td>
<td>Key Findings</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Corn et al., (2002)</td>
<td>Former driver with visual impairment aged 60+ yrs. including macular degeneration (N=82), glaucoma (N=22), retinitis pigmentosa (N=12), diabetic retinopathy (N=10), and other (N=34). 132 were legally blind.</td>
<td>Phone or in person interviews</td>
<td>Being a burden; not getting where they wanted to go; loss of independence; worries about relationships with friends/family; worries about isolation; worries about not having fun; comfort asking for rides</td>
</tr>
<tr>
<td>Harrison et al., (2003)</td>
<td>Studies of men and women aged 55+ yrs.</td>
<td>Literature review</td>
<td>Negative affect on maintaining household or other essential activities (grocery shopping, appointments); difficulty arranging transportation</td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Methods</td>
<td>Findings</td>
</tr>
<tr>
<td>-------</td>
<td>--------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Johnson et al. (1998)</td>
<td>Rural elders (N=60, mean age 84.2), their best friends (N=60) and some of their most influential family members (N=87)</td>
<td>MMSE; interviews</td>
<td>Alternatives; adverse affects on community activity levels &amp; social integration; increase dependence on caregivers; caregivers may suffer emotionally, physically or financially; threat to autonomy/independence; adversely affect personal identity; decreased life satisfaction</td>
</tr>
<tr>
<td>Johnson et al. (1995)</td>
<td>Rural elders (N=75, mean age 83.6)</td>
<td>Questionnaire; interviews 1 week later</td>
<td>Regret; isolation</td>
</tr>
<tr>
<td>Kostyniuk et al.</td>
<td>Older adults aged 65+ with</td>
<td>Telephone survey</td>
<td>Not very stressful; interference with</td>
</tr>
<tr>
<td>Study</td>
<td>Participants</td>
<td>Methods</td>
<td>Findings</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kostyniuk et al., (1998)</td>
<td>Drivers (mean age = 73.2), former drivers (mean age = 75.8) and driving couples (mean age = 71.2) over 65 years of age and adult children</td>
<td>16 focus groups</td>
<td>Strong emotional feelings; loss; missing driving; alternative transportation not ideal/convenient; regret for depending on someone else; impact on family members</td>
</tr>
<tr>
<td>Marottoli et al., (2000)</td>
<td>Total cohort at baseline (N=1316), never drove or stopped before 1982 (N=722), stopped driving between 1982 and 1987 (N=92) and still driving in 1988 (N=502)</td>
<td>In-home interviews every 3 years (1982, 1985, 1988) and phone interviews in intervening years; follow-up interview in 1989 and 1990; 1989 interview included questions about driving</td>
<td>Decreased out-of-home activity levels</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Description</td>
<td>Data Collection Methods</td>
<td>Outcomes</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Marottoli et al., (1997)</td>
<td>Total cohort at baseline (N=1316), never drove or stopped before 1982 (N=722), stopped driving between 1982 and 1987 (N=92) and still driving in 1988 (N=502)</td>
<td>In-home interviews every 3 years (1982, 1985, 1988) and phone interviews in other years; follow-up interview in 1989 included questions about driving practices</td>
<td>Depressive symptoms</td>
</tr>
<tr>
<td>Oxley et al., (2004)</td>
<td>Older female drivers (N=673) and former drivers (N=53)</td>
<td>Mail questionnaire</td>
<td>Loss of independence, freedom &amp; quality of life; dependence on others; difficulty/ inconvenience in getting places; sadness/ depression; lifestyle changes; relief</td>
</tr>
<tr>
<td>Peel (2002)</td>
<td>Individuals aged 75 + yrs stratified by driving status</td>
<td>Literature search, liaison with key informants and</td>
<td>Loss of independence &amp; identity; isolation; restriction in social contacts &amp;</td>
</tr>
<tr>
<td>Study</td>
<td>Population Description</td>
<td>Methods</td>
<td>Findings</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(driver, ex-driver, non-driver) and cognitive impairment (present/absence) (N=95)</td>
<td>5 people from each stratification group participated in in-depth interviews (N=30). 23 carers</td>
<td>focus groups; questionnaire; initial home interviews; in-depth interviews</td>
<td>activities; lifestyle changes; emotional reactions (e.g. frustration, stress, anger, depression); unwillingness to rely on others/be a burden</td>
</tr>
<tr>
<td>Ragland et al., (2005).</td>
<td>Current drivers at baseline aged 55+ (N=1772) who had follow-up data on driving status, depressive symptoms, and relevant control variables</td>
<td>Baseline interview and 3 year follow-up interview</td>
<td>Depressive symptoms</td>
</tr>
<tr>
<td>Ralston et al., (2001)</td>
<td>Older adults aged 65+ who recently stopped driving</td>
<td>Demographic questionnaire; 1 hour interview</td>
<td>Negative impact; burden on family members; loss of freedom,</td>
</tr>
<tr>
<td>Rosenbloom et al., (2002)</td>
<td>Former driver aged 60+ who had stopped driving because of a visual impairment (N=162) including macular degeneration (N=82), glaucoma (N=22), retinitis pigmentosa (N=12), diabetic retinopathy (N=10), &amp; other (N=34). 132 were legally blind.</td>
<td>Phone or in person interviews</td>
<td>Lifestyle changes; changes in activities</td>
</tr>
<tr>
<td>Rosenbloom et al., (2002)</td>
<td>Former driver aged 60+ who had stopped driving because of a visual impairment (N=162) including macular degeneration (N=82), glaucoma (N=22), retinitis pigmentosa (N=12), diabetic retinopathy (N=10), and other (N=34). 132 were legally blind.</td>
<td>Phone or in person interviews</td>
<td>Advantages related to traffic, cars &amp; their associated stresses; reduced costs; increased walking &amp; activities around the house; loss of spontaneity; not being able to go where &amp; when they want to go; loss of independence, control of time, social connections/ activities; difficulty with emotions associated with non-driving; not being able to help others; reduced status; help from friends/family; finding alternative transportation</td>
</tr>
<tr>
<td>Shope (2003)</td>
<td>n/a</td>
<td>Short discussion of focus groups</td>
<td>Adult children felt intense sense of responsibility; threatening; loss of psychological independence; preserving self-esteem &amp; independence</td>
</tr>
<tr>
<td>Study</td>
<td>Population Description</td>
<td>Methodology</td>
<td>Findings</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Stutts (2003)</td>
<td>Women aged 62-83 (N=15) who had stopped driving entirely or on a regular basis</td>
<td>2 focus groups (N=15); on-road driving evaluation (N=9)</td>
<td>Regret</td>
</tr>
<tr>
<td>Wilkins et al., (1999).</td>
<td>2 focus groups of former women drivers/women who drive less than 1/week (N=15, aged 62-83)</td>
<td>Focus groups; driving evaluation of 8 people who expressed an interest</td>
<td>Dissatisfaction with current level of mobility &amp; independence</td>
</tr>
</tbody>
</table>
Appendix B: Recruitment Materials

Media Tip 1

June 19, 2006

UVIC POSES A DRIVING QUESTION:

Are you 75 years of age or over? Do you drive a car? Or have you just stopped driving within the last year? If so, then researchers at the University of Victoria's Centre on Aging want to hear from you. Starting July 10, the centre is conducting 90–minute focus groups for its study, "To Drive or Not to Drive: Perceptions of Older Adults." Over the last decade, the centre has been studying elderly drivers, including their attitudes toward driving, what motivates them to change their behaviour behind the wheel, and what factors affect their decision to stop driving. "The percentage of the population over 65 is increasing, and so is the number of drivers in that group," says Wendy Lindstrom–Forneri, a research assistant at the centre who is helping to conduct the study. "Learning from older adults how they engage in safe driving is an important issue." For more information contact (250) 721–8987.

Media Contacts:
Kristina Kowalski (Centre on Aging) at 721–8987 or kkowalsk@uvic.ca
Wendy Lindstrom–Forneri (Centre on Aging) at (250) 721–8987 or wel@uvic.ca
Maria Lironi (UVic Communications) at (250) 721–6139 or lironim@uvic.ca
CURRENT AND FORMER OLDER DRIVERS NEEDED FOR STUDIES:

Are you over 70 years of age and currently driving? Or are you over 75 years of age and have recently stopped driving? If so, you could make an important contribution to research projects taking place at the University of Victoria's Centre on Aging. Over the last decade, the centre has been studying older drivers, including their attitudes toward driving, what motivates them to change their behaviour behind the wheel, and what factors affect their decision to stop driving. The latest study involves participants 70 years of age and over and evaluates computer software that provides a self-assessment of driving-relevant abilities, including vision, mobility and cognition. Researchers are also looking for additional participants for a study that began in July. The study, "To Drive or Not to Drive: Perceptions of Older Adults," involves focus group discussions and single participant interviews with individuals 75 years of age or over who have stopped driving. "This research allows us to hear first hand from the seniors on their impression of safe driving," says Dr. Holly Tuokko, professor at the Centre on Aging. "It's important for all of us to be aware of our driving skills and habits and this is especially true for the older driver." For more information contact (250) 721–8987.

Media Contacts:
Kristina Kowalski (Centre on Aging) at 721–8987 or kkowalsk@uvic.ca
Holly Tuokko (Centre on Aging) at 721–6576 or htuokko@uvic.ca
Maria Lironi (UVic Communications) at (250) 721–6139 or lironim@uvic.ca
Interview Poster

To Drive or Not to Drive

Current and Former Drivers Needed

• We are inviting individuals 75 years of age and older who are drivers or former drivers, who have stopped driving within the past 5 years, to participate in study on driving. This project is being conducted by researchers at the University of Victoria.

• What is required of participants?
  ➢ Participate in a single 90 minute interview about driving & stopping driving
  ➢ Complete a background questionnaire
  ➢ Option of completing the interview at the Centre on Aging, over the phone, or in a location of your choice.

• How will participants benefit?
  ➢ Your participation will help us to understand more about older driver’s attitudes and beliefs toward driving and stopping driving.
  ➢ The interview will provide you with a forum to express your opinions regarding driving or the process of stopping driving.

IF YOU WOULD LIKE TO VOLUNTEER TO PARTICIPATE, PLEASE

CONTACT KRISTINA AT 721-8987
THANK YOU FOR YOUR INTEREST!
Focus Group Poster

To Drive or Not to Drive

Participants Needed

• We are inviting individuals 75 years of age and older who are former drivers to participate in study on driving. This project is being conducted by researchers at the University of Victoria.

• What is required of participants?
  ➢ Attend a 90 minute group discussion about driving and stopping driving
  ➢ Complete a background questionnaire

• How will participants benefit?
  ➢ Your participation will help us to understand more about older driver’s attitudes and beliefs toward driving and stopping driving.
  ➢ Your participation in the group discussion will provide you with the opportunity to discuss driving issues with other older adults.
  ➢ The focus group will provide you with a forum to express your opinions regarding driving or the process of stopping driving.

IF YOU WOULD LIKE TO VOLUNTEER TO PARTICIPATE, PLEASE

CONTACT KRISTINA AT 721-8987
THANK YOU FOR YOUR INTEREST!
Radio Announcement

The Centre on Aging at the University of Victoria is looking for volunteers for their research study entitled “To Drive or Not to Drive”. The research study is on current and former driver’s attitudes and beliefs about driving and stopping driving.

Men and women, 75 years of age and over, who are drivers or former drivers, who have stopped driving within the past 12 months, are eligible.

$10 will be made available to cover the cost of transportation.

Contact Wendy or Kristina at the University of Victoria at 721-8987 for more information.
Newspaper Advertisements

TO DRIVE OR NOT TO DRIVE

Research study on current and former drivers' attitudes and beliefs about driving and stopping driving. Men and women, 75 years of age and over, who are drivers or former drivers, who have stopped driving within the past 12 months, are eligible. The study is being conducted by researchers at the Centre on Aging at the University of Victoria and $10 will be made available to cover the cost of transportation. Contact Wendy or Kristina at the University of Victoria (721-8987) for more information.
Appendix C: Telephone Script

Hi (Name)

My name is (name of research assistant). I am a research assistant that works at the Centre on Aging at the University of Victoria. I am returning your call about the To Drive or Not to Drive: Perceptions of Older Adults study. You indicated in the message that you left with us that you would be interested in participating in our study. See Note 1 at the bottom of this page.

In order to participate, you must be 75 years of age or older. Do you currently drive or did you quit driving within the previous year?

For current drivers: This study is about the attitudes and beliefs of current drivers about driving and driving restrictions.

For former drivers: This study is about the attitudes and beliefs of former drivers about the process of driving cessation.

This study involves a commitment of about 2 hours. It is important that you know you will need to come to the Centre on Aging at the University of Victoria for a single session to complete a brief questionnaire and participate in a focus group.

Do you have any questions? See Note 2 at the bottom of this page.

Your participation of course, is strictly voluntary, and you can decide to drop out of the study at any time without penalty.

Depending on whether the participant is a current driver or a former driver we will provide them with 2 alternative focus group dates and times (have yet to be determined) to sign up for.

Thank you for agreeing to participate.

NOTES:

1. First 2 sentences will vary depending on whether we are answering or returning their call.

2. The purpose of this telephone script is to set up the focus group meetings. Many issues that individuals may have questions about are addressed in the consent form. The research assistants will keep a copy of the consent form beside them to refer to when answering these questions.
Appendix D: Transportation and Parking

Transportation to the Study

Study Location: Centre on Aging, Sedgewick Building A (See Map)
Date of Study: ________________________________

A) DRIVING TO THE CENTRE ON AGING AT THE UNIVERSITY OF VICTORIA

Saanich Peninsula (e.g., Sidney, Brentwood Bay, Royal Oak)
1) Take Pat Bay Highway to McKenzie Ave. exit (UVic sign)
2) Turn left on McKenzie Ave.
3) Follow McKenzie Ave. to UVic
4) Turn right on McGill Rd.
5) Park in parking lot # 4, #8 or #10

Langford/Collwood (e.g., Sooke, Metchosin)
1) Take Trans Canada Highway (Highway 1) to McKenzie Ave. exit (UVic sign)
2) Turn left on McKenzie Ave.
3) Follow McKenzie Ave. to UVic
4) Turn right on McGill Rd.
5) Park in parking lot # 4, #8 or #10

Tillicum
1) Take Tillicum Rd., cross the Trans Canada Highway
2) Turn left on Carey Rd.
3) Turn right on McKenzie Ave.
4) Follow McKenzie Ave. to UVic
5) Turn right on McGill Rd.
6) Park in parking lot # 4, #8 or #10

Oak Bay/Downtown Victoria
1) Take Fort St. to Foul Bay Rd.
2) Follow Foul Bay Rd. to UVic
3) Continue around ring road and turn right on McGill Rd.
4) Park in parking lot # 4, #8 or #10

PARKING
• Hourly parking is available from dispensers at a rate of $1/hour
• Dispensers for parking permits accept quarters, $1 coins, $2 coins, Visa and MasterCard
B) DIRECT BUS ROUTES TO UVIC
   • The 4, 7, 11, 14, 26, 39, 51, 76 bus routes come directly to the UVic Exchange (by Campus Security)

C) TAXI SERVICE
   1. Take a Taxi to the Centre on Aging (Sedgewick Building A) at UVic
   2. Have the Taxi drop you off at Sedgewick Building B (beside the construction).

CONTACT KRISTINA AT 721-8987 IF YOU HAVE ANY QUESTIONS.
University for Victoria Map

The Centre on Aging, Sedgewick Building A is 1 of 3 short green buildings. It is highlighted in green on this map.
Appendix E: Focus Group Materials

Introduction to Focus Group Discussion

1. Moderator will welcome participants explain courtesies and procedures etc, and have the participants read consent form.

2. Make sure to stress that experiences and perceptions related to the process of stopping driving may differ for each person and that everyone can make a valuable contribution to the discussion.

3. Moderator will ask her icebreaker question to get participants to open up and talk.

4. Then, the moderator will briefly remind participants of the purpose of the study:

Current Driver Introduction:

The researchers have asked you here today to learn more about the perceptions and experiences of older drivers regarding their driving and the possibility of stopping driving. The focus of this discussion will be on your attitudes, beliefs and actions concerning the possibility of stopping driving. We are interested if and how older drivers change their driving.

Former Driver Introduction:

The researchers have asked you here today to help them learn more about the perceptions and experiences of older adults who have stopped driving. The focus of this discussion will be on your attitudes, beliefs and actions concerning the process of stopping driving. We are interested not only, in what and why, but also, how you went about stopping driving
**Introduction to Interview**

1. Introduce interviewer

2. Interviewer will explain procedures etc, and have the participants read consent form.

3. Remind participant that:
   a. There is no such thing as a stupid question
   b. They should speak freely and openly to each question
   c. Everybody has something significant to share. The experiences and perceptions related to the process of stopping driving differ for each person. No matter what their experiences or perceptions related to driving are, they can make a valuable contribution to the study.
   d. The interview should take no more than 1.5 hours

**Current Driver Introduction**

I am here to interview you today to learn more about the perceptions and experiences of older drivers regarding their driving and the possibility of stopping driving. The focus of this discussion will be on your attitudes, beliefs and actions concerning the possibility of stopping driving. I am interested if and how older drivers change their driving.

**Former Driver Introduction**

I am here today to interview you today to learn more about the perceptions and experiences of older adults who have stopped driving. The focus of this discussion will be on your attitudes, beliefs and actions concerning the process of stopping driving. I am interested not only, in what and why, but also, how you went about stopping driving.
Appendix F: Consent Forms

Focus Group Consent Form

To Drive or Not to Drive: Perceptions of Older Adults

You are invited to participate in a study where we will discuss driving-related attitudes, beliefs, and actions that is being conducted by Dr. Holly Tuokko, Dr. Ryan Rhodes, Wendy Lindstrom-Forneri, and Kristina Kowalski at the Centre on Aging at the University of Victoria. Dr. Holly Tuokko is a faculty member in the Psychology Department and Dr. Ryan Rhodes is a faculty member in the Physical Education Department at the University of Victoria and you may contact either of them if you have further questions by email or by phone at:

Email: htuokko@uvic.ca  Ph: 721-6576
Email: rhodes@uvic.ca  Ph: 721-8384.

Wendy Lindstrom-Forneri and Kristina Kowalski are graduate students in Psychology and further questions can also be directed to them via email at wel@uvic.ca and kkowalsk@uvic.ca.

This research is being funded by the Canadian Institutes of Health Research (CIHR) Institute of Aging and Canadian Driving Research Initiative for Vehicular Safety in the Elderly (CanDRIVE).

Purpose and Objectives
The purpose of this research project is to obtain information about the perceptions of older drivers who are currently driving or have stopped driving. Our focus will be on gathering information on driving and the process of stopping driving.

Importance of this Research
It is important to study driving-related attitudes, beliefs, and actions and their relationships to driving-related outcomes because a better understanding of these factors will help us design educational strategies and skills training programs to keep older adults driving safely longer. The research will also be helpful in designing programs to help former drivers better adjust to not driving.

Participants Selection
You are being asked to participate in this study because you currently drive or stopped driving within the past year.

What is involved?
If you agree to voluntarily participate in this research, your participation will include filling out a brief demographic and health questionnaire and participating in a group discussion. Interviewers will lead you through one group discussion with 6-10 current or former drivers that will last approximately 1-1.5 hours. The discussion will be audio-
taped to help the researchers recall and review important details from the discussion. The discussion will focus on the participant’s driving-related attitudes, beliefs, and actions, and on the process of restricting and stopping driving. The focus groups will be held at the Centre on Aging at the University of Victoria.

**Inconvenience**
The major inconvenience in this study is time. Other potential inconveniences that you may experience include sharing and discussing thoughts in front of a group and transportation to and from the Centre on Aging. To offset the inconveniences associated with transportation, cost of transportation and/or parking will be reimbursed.

**Risks**
There are no known or anticipated risks to you by participating in this research.

**Benefits**
The potential benefits of your participation in this research include the opportunity to discuss driving issues with other older adults. The focus group will provide you with a forum to express your opinions regarding driving and the process of stopping driving. This study will also contribute to the advancement of knowledge related to older driver’s attitudes, beliefs and actions and driving-related outcomes.

**Voluntary Participation**
Your participation in this focus group study must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data will be used because it is not possible to omit your comments from the audiotapes.

**Anonymity and Confidentiality**
Your confidentiality and the confidentiality of the data will be protected. There are limits to the confidentiality because this study is being conducted in groups. To protect your anonymity, the researchers will not ask for your name on the background questionnaire. Since your confidentiality cannot be guaranteed you are not required to disclose any information that you want to keep private. To ensure confidentiality of the data the audiotapes, consent forms, and questionnaires will be stored securely in a locked filing cabinet and the computer files will be password protected.

**Dissemination of Results**
It is anticipated that the results may be used as part of a thesis and will be shared with others through published articles and presentation at scholarly meetings. Your identity will remain confidential in all published journals, reports and presentations at scholarly meetings. A short report will be made available to you on the Centre on Aging website. You can access this website at [http://www.coag.uvic.ca/](http://www.coag.uvic.ca/).
**Disposal of Data**
The audiotapes will be erased after transcription. Other data from this study will be kept securely for 5 years. At this time computer files will be erased, and paper files and consent forms will be shredded.

**Contacts**
Individuals that may be contacted regarding this study include Dr. Holly Tuokko, Dr. Ryan Rhodes, Wendy Lindstrom-Forneri and Kristina Kowalski. Please see contact information at the beginning of this consent form.

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice-President, Research at the University of Victoria (250-472-4545) or ovprhe@uvic.ca.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

_________________________  ___________________________  ____________
Name of Participant        Signature                  Date

*An copy of this consent will be left with you, and a copy will be taken by the researcher.*
Individual Interview Informed Consent

To Drive or Not to Drive: Perceptions of Older Adults

You are invited to participate in a study where we will discuss driving-related attitudes, beliefs, and actions that is being conducted by Dr. Holly Tuokko, Dr. Ryan Rhodes, Wendy Lindstrom-Forneri, and Kristina Kowalski at the Centre on Aging at the University of Victoria. Dr. Holly Tuokko is a faculty member in the Psychology Department and Dr. Ryan Rhodes is a faculty member in the Physical Education Department at the University of Victoria and you may contact either of them if you have further questions by email or by phone at:

- Email: htuokko@uvic.ca  Ph: 721-6576
- Email: rhodes@uvic.ca  Ph: 721-8384.

Wendy Lindstrom-Forneri and Kristina Kowalski are graduate students in Psychology and further questions can also be directed to them via email at wel@uvic.ca and kkowalsk@uvic.ca.

This research is being funded by the Canadian Institutes of Health Research (CIHR) Institute of Aging and Canadian Driving Research Initiative for Vehicular Safety in the Elderly (CanDRIVE).

Purpose and Objectives
The purpose of this research project is to obtain information about the perceptions of older drivers who are currently driving or have stopped driving. Our focus will be on gathering information on driving and the process of stopping driving.

Importance of this Research
It is important to study driving-related attitudes, beliefs, and actions and their relationships to driving-related outcomes because a better understanding of these factors will help us design educational strategies and skills training programs to keep older adults driving safely longer. The research will also be helpful in designing programs to help former drivers better adjust to not driving.

Participants Selection
You are being asked to participate in this study because you currently drive or have stopped driving.

What is involved?
If you agree to voluntarily participate in this research, your participation will include filling out a brief demographic and health questionnaire and participating in an interview. The interviewer will lead you through one discussion that will last approximately 1-1.5 hours. The discussion will be audio-taped to help the researchers recall and review important details from the discussion. The discussion will focus on the participant’s
driving-related attitudes, beliefs, and actions, and on the process of restricting and stopping driving. The interview will be held at the Centre on Aging at the University of Victoria or another convenient location (e.g., the participant’s home).

**Inconvenience**
The major inconvenience in this study is time. Other potential inconveniences that you may experience include sharing and discussing thoughts in front of a group and transportation to and from the Centre on Aging. To offset the inconveniences associated with transportation, cost of transportation and/or parking will be reimbursed.

**Risks**
There are no known or anticipated risks to you by participating in this research.

**Benefits**
The potential benefits of your participation in this research include the opportunity to discuss driving issues with other older adults. The focus group will provide you with a forum to express your opinions regarding driving and the process of stopping driving. This study will also contribute to the advancement of knowledge related to older driver’s attitudes, beliefs and actions and driving-related outcomes.

**Voluntary Participation**
Your participation in this focus group study must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data will be used because it is not possible to omit your comments from the audiotapes.

**Anonymity and Confidentiality**
Your confidentiality and the confidentiality of the data will be protected. There are limits to the confidentiality because this study is being conducted in groups. To protect your anonymity, the researchers will not ask for your name on the background questionnaire. Since your confidentiality cannot be guaranteed you are not required to disclose any information that you want to keep private. To ensure confidentiality of the data the audiotapes, consent forms, and questionnaires will be stored securely in a locked filing cabinet and the computer files will be password protected.

**Dissemination of Results**
It is anticipated that the results may be used as part of a thesis and will be shared with others through published articles and presentation at scholarly meetings. Your identity will remain confidential in all published journals, reports and presentations at scholarly meetings. A short report will be made available to you on the Centre on Aging website. You can access this website at [http://www.coag.uvic.ca/](http://www.coag.uvic.ca/).

**Disposal of Data**
The audiotapes will be erased after transcription. Other data from this study will be kept securely for 5 years. At this time computer files will be erased, and paper files and consent forms will be shredded.
Contacts
Individuals that may be contacted regarding this study include Dr. Holly Tuokko, Dr. Ryan Rhodes, Wendy Lindstrom-Forneri and Kristina Kowalski. Please see contact information at the beginning of this consent form.

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Associate Vice-President, Research at the University of Victoria (250-472-4545) or ovprhe@uvic.ca.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researchers.

________________________  ______________________  ________________
Name of Participant        Signature              Date

A copy of this consent will be left with you, and a copy will be taken by the researcher.
Appendix G: Ethics Certificates and Amendments

Copy of Ethics Approval

Human Research Ethics Board
Certificate of Approval

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>Department(School)</th>
<th>Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holly Tuokko</td>
<td>PSYC</td>
<td>N/A</td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Co-Investigator(s):
- Dr. Ryan Rhodes, Co-Investigator, PHED
- Wendy Lindstrom-Forsen, Research Assistant, UVic
- Kristine Kouvalski, Research Assistant, UVic

Project Title: To Drive or Not to Drive: Perceptions of Older Adults

<table>
<thead>
<tr>
<th>Protocol No.</th>
<th>Approval Date</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-151</td>
<td>07-Jun-06</td>
<td>07-Jun-06</td>
<td>06-Jun-09</td>
</tr>
</tbody>
</table>

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Subjects.

Dr. Richard Keefer
Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the procedures. Extensions or minor amendments may be granted upon receipt of a "Research Status" form.
Copy of June 23rd, 2006 Amendment

Amendment of an Approved Project

Study Title: To Drive or Not to Drive: Perceptions of Older Adults

Date: June 23, 2006
Protocol Number: 06-151

Brief Synopsis of Progress to Date:

We are in the recruitment stages of this study. About 1 week ago, we started advertising this project through local media and have had great success recruiting our current drivers. We are having more difficulty recruiting former drivers, but are not concerned yet as we only recently started the recruitment process.

Details of Changes

We would like to make one small addition to our study procedures. Currently, we are hosting separate focus groups with current drivers and former drivers (who stopped driving within the previous 12 months). We would also like to have one-on-one interviews with single participants, using the same questions, when circumstances are not suitable for group discussion (e.g., an individual has a hearing impairment) or when participants have discrepant views from other focus group participants (e.g., their opinions and experiences are not being heard). Sample focus group questions and procedures were included in the original application and will be the same for the individual interviews.
REQUEST FOR CONTINUING REVIEW OR AMENDMENT OF AN APPROVED PROJECT
HUMAN RESEARCH ETHICS - UNIVERSITY OF VICTORIA

CURRENT PROTOCOL APPROVAL NUMBER: 96-151

Applicant Information

<table>
<thead>
<tr>
<th>PRINCIPAL INVESTIGATOR</th>
<th>Dr. Holly Tuokko</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHONE</td>
<td>721-6578</td>
</tr>
<tr>
<td>EMAIL</td>
<td><a href="mailto:htuokko@uvic.ca">htuokko@uvic.ca</a></td>
</tr>
</tbody>
</table>

MAIL CORRESPONDENCE AND APPROVAL TO

<table>
<thead>
<tr>
<th>DEPARTMENT/SCHOOL</th>
<th>HOME</th>
</tr>
</thead>
</table>

Are you

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>STAFF</th>
<th>GRADUATE STUDENT</th>
<th>UNDERGRADUATE STUDENT</th>
</tr>
</thead>
</table>

Student Supervisor

<table>
<thead>
<tr>
<th>NAME</th>
<th>EMAIL</th>
</tr>
</thead>
</table>

Co-Investigator(s) – Identify those collecting raw data. (Name, position [e.g., Graduate Student] and department)

<table>
<thead>
<tr>
<th>1. Dr. Ryan Rhodes (PHED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Wendy Lindstrom-Forneri (Psych, Research Assistant)</td>
</tr>
<tr>
<td>3. Kristina Kowalski (Psych, Research Assistant)</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
</tr>
</tbody>
</table>

Title of Project

To Drive or Not to Drive: Perceptions of Older Adults

Request for Continuation or Approval of Revisions (Check all that apply)

REQUEST FOR EXTENSION IN TIME

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>JUSTIFICATION</th>
</tr>
</thead>
</table>

THERE HAVE BEEN NO CHANGES IN THE STUDY DESIGN

| ATTACH A BRIEF SYNOPSIS OF PROGRESS TO DATE WITH AN EMphasis ON ANY PROBLEMS ENCOUNTERED DURING THE CONDUCT OF THE RESEARCH |

THERE WILL BE CHANGES

| ATTACH DETAILS OF THE CHANGES ALONG WITH A BRIEF SYNOPSIS OF PROGRESS TO DATE WITH AN EMphasis ON ANY PROBLEMS ENCOUNTERED DURING THE CONDUCT OF THE RESEARCH |

| ATTACH TWO FORMS WITH COPIES OF REVISED FORMS, ISSUES, FEEDBACK, OR QUESTIONNAIRES |

Signatures

Signature of Graduate Supervisor indicates that they understand and abide by the statements of protection of confidentiality of data and anonymity agreed to by subjects/participants in the Letter of Information. When Chief Investigator is the Principal Investigator, signature of Chief Investigator is required.

<table>
<thead>
<tr>
<th>SIGNATURE OF PRINCIPAL INVESTIGATOR</th>
<th>SIGNATURE OF SUPERVISOR</th>
<th>SIGNATURE OF CHIEF INVESTIGATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE: 23/06/06</td>
<td>DATE: 23/06/06</td>
<td>DATE: 23/06/06</td>
</tr>
</tbody>
</table>

FOR OFFICE OF RESEARCH SERVICES USE ONLY

New Approval Number: 00-06-151B

<table>
<thead>
<tr>
<th>APPROVAL DATE</th>
<th>START DATE</th>
<th>END DATE</th>
</tr>
</thead>
</table>

(Last revised: June 2006)
Human Research Ethics Board
Certificate of Approval

Principal Investigator
Dr. Holly Tuokko
Faculty

Co-Investigator(s):
Dr. Ryan Rhodes, Physical Education, UVic
Wendy Lindstrom-Forener, RA, Psychology, UVic
Kristina Kowalski, RA, Psychology, UVic

Department/School
PSYC
Supervisor
N/A

Project Title: To Drive or Not to Drive: Perceptions of Older Adults

Protocol No. Approval Date Start Date End Date
06-06-151b 29-Jun-06 07-Jun-06 06-Jun-09

Certification
This certifies that the UVic Human Research Ethics Board has examined this
research protocol and concludes that, in all respects, the proposed research meets
appropriate standards of ethics as outlined by the University of Victoria Research
Regulations Involving Human Subjects.

[Signature]
Dr. Richard Keeler
Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the
procedures. Extensions or minor amendments may be granted upon receipt of a "Research
Status" form.
Copy of July 19th, 2006 Amendment

Amendment of an Approved Project

Date: July 19, 2006
Protocol Number: 06-151

Study Title: To Drive or Not to Drive: Perceptions of Older Adults

Brief Synopsis of Progress to Date:

Over the past few weeks, we have been conducting focus groups with current and former drivers. The focus groups have generated interesting conversation concerning older adult’s perceptions and experiences with driving and the process of stopping driving. It has been difficult recruiting former drivers. We are reimbursing our participants $10 for the cost of transportation. This has been a concern for some former drivers because $10 does not completely cover the cost of their transportation (e.g., cab fares).

Details of Changes

We would like to make another small addition to our study procedures. To help with the inconvenience and cost of transportation, we would like to give our participants the option of having the one-on-one interview at the Centre on Aging, over the phone, or in a location of their choice (e.g., home). Otherwise, the procedures will be exactly as was described in the ethics application.
REQUEST FOR CONTINUING REVIEW OR AMENDMENT OF AN APPROVED PROJECT

HUMAN RESEARCH ETHICS - UNIVERSITY OF VICTORIA

CURRENT PROTOCOL APPROVAL NUMBER 06-181

Applicant Information

PRINCIPAL INVESTIGATOR Dr. Holly Tuokko
PHONE 721-6576
EMAIL htuokko@uvic.ca

HOME ADDRESS (include postal code)

MAIL CORRESPONDANCE AND APPROVAL TO

ARE YOU

FACULTY ☑ STAFF ☐ GRADUATE STUDENT ☐ UNDERGRADUATE STUDENT ☐

Student Supervisor

NAME ☑ EMAIL ☐

Co-Investigator(s) — Identify those collecting raw data. (Name, position [eg., graduate student] and department)

1. Dr. Ryan Rhodes (PHED)
2. Wendy Lindstrom-Fornell (Psych, Research Assistant)
3. Kristina Kowalski (Psych, Research Assistant)

Title of Project

To Drive or Not to Drive: Perceptions of Older Adults

Request for Continuation or Approval of Revisions (Check all that apply)

☐ REQUEST FOR EXTENSION IN TIME

NEW DATES

FROM TO

☐ THERE HAVE BEEN NO CHANGES IN THE STUDY DESIGN

Justification

☐ THERE WILL BE CHANGES

Attach a brief synopsis of progress to date with an emphasis on any problems encountered during the conduct of the research.

Attach details of the changes along with a brief synopsis of progress to date with an emphasis on any problems encountered during the conduct of the research. Submit this form with copies of revised forms, letters, letters, or questionnaires.

Signatures

Signature of Graduate Supervisor indicates that they undertake to respect and abide by the statement of promotion of confidentiality of data and anonymity agreed to by subjects/participants in the Letter of Informed Consent. When Chair/Director is the Principal Investigator, signature of Dean is required.

Signature of Principal Investigator
DATE: 19 July 2006

Signature of Supervisor
DATE:

Signature of Chair/Director/Dean
DATE:

For Office of Research Services Use Only: New Approval Number: 06-06-151b

Human Research Ethics Board
Certificate of Approval

Principal Investigator: Dr. Holly Tsuokko
Department/School: PSYC
Supervisor: N/A

Co-Investigator(s):
Dr. Ryan Rhodes, PHD, UVic
Wendy Lindstrom-Ferneri, RA, PSYC, UVic
Kristina Kowalski, RA, PSYC, UVic

Project Title: To Drive or Not to Drive: Perceptions of Older Adults

Protocol No.: 06-06-151b
Approval Date: 28-Jul-06
Start Date: 29-Jun-06
End Date: 28-Jun-09

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Subjects.

[Signature]
Dr. Richard Keeler
Associate Vice-President, Research

This Certificate of Approval is valid for the above term provided there is no change in the procedures. Extensions or minor amendments may be granted upon receipt of a "Research Status" form.
Appendix H: Demographic and Health Questionnaires

Demographic and Health Questionnaire (Current Drivers)

Please answer each of the following questions.

1. Age ________

2. Gender (circle one): Male Female

3. What is your level of education (check one)
   a. Elementary School _____
   b. High School _____
   c. College/University _____
   d. Post-secondary _____

4. Do you hold a valid drivers license (circle one)? Yes No

5. At what age did you start driving? ______________

6. Do you currently restrict your driving (e.g., limiting or avoiding difficult driving situations, reducing number of days driven each week, driving speed, or distance driven) (circle one)? Yes No

7. a) Have you taken any courses or educational programs regarding driving (circle one)? Yes No

   b) If you have taken a course/education program:
      i) How many courses have you taken? _________________________
      ii) How long ago did you take the program(s)? ___________________
iii) What type of program(s) did you participate in (e.g., 55 Alive Program, on-road training course)?

____________________________________

____________________________________

8. How many days have you driven in the past week? (# days)

______________

9. How long are most of your driving trips (each way)?

___ less than 30 minutes ___ over 30 minutes ___ over 60 minutes

10. Overall, compared to 10 years ago, do you drive:

___ much less often ___ a little less ___ the same ___ more often

11. In general, would you say your health is:
   a. Excellent ______
   b. Very Good ______
   c. Good ______
   d. Fair ______
   e. Poor ______

12. Compared to one year ago, how would you rate your health in general now?
   a. Much better than one year ago ______
   b. Somewhat better than one year ago ______
   c. About the same as one year ago ______
   d. Somewhat worse than one year ago ______
   e. Much worse than one year ago ______
Demographic and Health Questionnaire (Former Drivers)

Please answer each of the following questions.

1. Age ________

2. Gender (circle one):  Male  Female

3. What is your level of education (check one)
   a. Elementary School  _____
   b. High School  _____
   c. College/University  _____
   d. Post-secondary  _____

4. Do you hold a valid drivers license (circle one)?  Yes  No

5. At what age did you start driving? ____________

6. At what age did you stop driving? ____________

7. Did you ever restrict your driving (e.g., limiting or avoiding difficult driving situations, reducing number of days driven each week, driving speed, or distance driven) (circle one)?   Yes  No

8. a) Have you taken any courses or educational programs regarding driving (circle one)?  Yes  No

   b) If you have taken a course/education program:
      i) How many courses have you taken? _________________________
      ii) How long ago did you take the program(s)? __________________
iii) What type of program(s) did you participate in (e.g., 55 Alive Program, on-road training course)? ___________________________ ____________________________________________________

9. Within 6 months prior to stopping driving, how many days did you drive in an average week? (# days) __________

10. Within 6 months prior to stopping driving, how long were most of your driving trips (each way)?

  ___ less than 30 minutes  ___ over 30 minutes  ___ over 60 minutes

11. In general, would you say your health is:
   a. Excellent _____
   b. Very Good _____
   c. Good _____
   d. Fair _____
   e. Poor _____

12. In general, when you stopped driving, you would say your health was:
   a. Excellent _____
   b. Very Good _____
   c. Good _____
   d. Fair _____
   e. Poor _____

13. One year before you stopped driving, how would you say your health was:
   a. Much better than when I stopped _____
   b. Somewhat better than when I stopped _____
   c. About the same as when I stopped _____
d. Somewhat worse than when I stopped

e. Much worse than when I stopped
Appendix I: Additional Support for Themes Presented in Chapter 5:

Qualitative Results

Table I - 1: Avoiding Difficult Driving Situations

<table>
<thead>
<tr>
<th>Themes</th>
<th>Example of Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoiding Bad Weather (e.g., Snow and icy conditions, Heavy rain)</td>
<td>Current Driver Now that’s another, um, you know, I have driven on ice and stuff, but I wouldn’t do it now. I mean get away from it once you can. I mean we used to, back there was a time when we were young, we wouldn’t let things like a snowstorm stop us if we had somewhere to go to. When we were in Cambridge living about ten miles south of Cambridge and over a particularly harsh winter, that part of England is very flat, and the snow doesn’t fall, it drifts horizontal, but that wouldn’t stop us from going to dinners and other social events at the university because we perceived them to be important things that we wanted to do, unique experiences in some cases and so on. Were we faced with the same situation now, if we had to go, if we were due to go to</td>
</tr>
</tbody>
</table>
a concert downtown and it was in the middle of a snowstorm, we’d give serious consideration to not going.

Bad weather. Poor road conditions, for example, if we’ve had a snow storm and the roads haven’t been cleared, that sort of thing. We don’t need to do this now, let’s wait until the road’s clear and then we’ll go.

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>I think gradually all of the above that has been mentioned… And certainly heavy rain and snow were taboo. I just didn’t go.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well, in Victoria, you don’t drive when it’s snowing…</td>
</tr>
<tr>
<td></td>
<td>Oh, the rain. It gets in the... I just, whenever, whichever it rained, when I was still driving I just didn’t, I didn’t drive, honestly.</td>
</tr>
</tbody>
</table>

Avoiding Distractions (e.g.,

**driving with others, playing**

**the radio**)

| Current Drivers | I never turn the radio on. If I’m parked somewhere, I }
might have a CD playing. But otherwise, that thing is
off, period… Because I don’t want the distraction.

I drive alone most of the time, although I do have a
lady that loves to talk. I take her out shopping
occasionally and I just tune her out. Because I can’t
stand – I don’t have the radio on. I can’t stand
interference when I’m driving.

Another thing, I don’t know whether it comes under
this question, but I don’t drive friends anymore. It’s
sounds hard-hearted, but they like to chatter and I’m
better if I keep my mind on my what I’m doing and
not participate with my friends… So, I drive myself
and I say I’ll pick things up, but I won’t take anyone
with me.

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None.</th>
</tr>
</thead>
</table>

**Avoiding Driving With Others**

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>When I go with anybody they have to drive.</th>
</tr>
</thead>
</table>

If I go anywhere in my car with somebody I ask for
them to do the driving because I know if I had
somebody in the driver, as you’ve said, grey hair and 
wrinkles, they would be a little more critical. 

I don’t drive other people. Very rarely. 

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None.</th>
</tr>
</thead>
</table>

**Avoiding Rush Hour and Heavy Traffic**

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>I always try to go before the rush hours and be home, you know, I look at the clock and try and work it that way.</th>
</tr>
</thead>
</table>

… Because I’m independent I try to drive at off hours. If I have to make a medical appointment, I take an early morning one, after the business traffic and before the people who have been doing there chores get out on the road. And I find that very helpful.  

…And I don’t go after 4 or 4:30.

For instance, as you said… I come down to Victoria once a week to work with my daughter in her business. And I don’t leave until I know the traffic is not the commuter traffic because that’s horrendous.

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>I would do just casual driving. I wouldn’t drive at</th>
</tr>
</thead>
</table>
night or when the traffic was heavy and I didn’t go into town. I would drive through town to my sisters, but that sort of tapered down I would say about eight years ago.

… I wouldn’t drive into town at all.

… And driving in heavy traffic, I’d avoid it if I could.

### Avoiding Highway Driving

<table>
<thead>
<tr>
<th>Current Driver</th>
<th>Well yes, because I haven’t driven on the highway for several years, by choice.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I have no intention of going anywhere near the highway.</td>
</tr>
<tr>
<td></td>
<td>I don’t really, like I used to pick up people at the airport all the time but I’ve stopped that now.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>One disadvantage is when we there are any family members that we would like to pick up at … the airport or the train station and um, we don’t seem to be able to offer that. We haven’t for a few years now because it always involves long highway drives.</th>
</tr>
</thead>
</table>
And I restricted where I would drive. In other words, it would be down to Monterey Centre, which is easy, it would be up to Government House gardens, which is easy or up to the Symphony office, but I stayed away from the highway and so on and so forth.

… if you were to go, I’d offer to take you to the ferry, but I didn’t say how I’d get you there. I wouldn’t go out the highway; I’d go down on the back road. And everything I used, just me, I would use different routes and I’d use them because I think it’s either to your advantage.

Avoid Night Driving &
Avoiding Night Driving
When Wet

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>… I don’t drive at night.</th>
</tr>
</thead>
</table>

Because it’s fairly obviously more hazardous driving at night with wet roads and so on and if you don’t need to do it, stay home.

If it’s not an important matter. If we decided we want to go and see a movie early in the day and then by the
time it comes to see the movie it’s chucking it down with rain and it’s dark, we’ll say, “Oh to hell with it.” And we’ll go tomorrow.

Former Drivers  I would do just casual driving. I wouldn’t drive at night … that sort of tapered down I would say about eight years ago.

Couple of years anyhow before I quit altogether. But, I quit driving at nights.

Well, with me I uh, I would say about 7 or 8 years before I quit driving altogether I started, I started thinking of stopping driving at night. I quit driving 6 or 7 years before I did. I never drove at night.

Avoiding Unfamiliar Routes

Current Drivers  I mean I might go a few blocks to a friend and back or something, with a route I – and knowing where you’re going.

It also helps that you know you’re roads. If you stick to the roads that you’re familiar with, it makes you driving easier, too. If you know where the stop lights are…
That’s something I want to talk to my MLA about because I think there are a lot of senior drivers who are very safe in their own territory. And I more or less restrict my territory.

| Former Drivers | I started um, restricting my driving to routes that I really knew. 

I try to stay to certain roads, follow certain roads, and when I went on a new road, I had a great deal of trouble. |

| **Avoiding Left Turns/**  
**Intersections without Lights** | 

| Current Drivers | I never make a left turn unless it’s the only thing to do. I’ll go around the block and make the circuit. And use the lights where at all possible, I mean at intersections with lights. It’s just so much easier. I think so. You gradually evolve into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens.  

Well I’ve mentioned the avoiding left turns at all cost. |
Former Drivers  And always, if you are going to turn left, make sure you have the arrow to help you turn left … at an intersection and you know, even go out of your way a little bit to get to that intersection, where you have um, um an arrow. So you’ve got the time, you don’t have to worry about. And then, even if you have to go around a couple blocks, it’s worth it. It leaves a little…

That triggers it, uh… As you probably know, if you make a right turn, then a right turn … and then a right turn, you can … That’s the easy way to make a left turn.

Yeah. In other words, you plan. I think you can plan more how you’re going to get to your destination. And think I’ll avoid that corner, but I can get there. And as long as time, and usually time, at least for me, was not of an essence, really.

Other Avoidance Strategies

Current Drivers  P1: Avoid parallel parking (Agreement and laughter about this) P2: I was just going to say that. No! Not if I can avoid it.
I will not drive somebody else’s car. That’s it.

| Former Drivers | None |
### Table I - 2: Other Self-Imposed Driving Restrictions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Example Quotes</th>
</tr>
</thead>
</table>
| Driving restricted to necessary activities | Current Drivers  And I walk a lot so I try not to drive when it’s not necessary.  

One change I think I have made is that I don’t drive unless I have to.  

I’m not taking the car unnecessarily out for things that we’ve forgotten to put on the list when we’re shopping. We shop just once a week now.  

Former Drivers  I mean I didn’t drive just for the sake of driving, I didn’t drive unnecessarily.  

I think as I was getting older, I was driving more cautiously and not going on longer trips, **not taking on more responsibilities of driving**.  

<table>
<thead>
<tr>
<th>Advanced Planning and Preparation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Drivers</td>
<td>Not having to, you know, this turn, that turn. You already know when you get in the car the route that</td>
</tr>
</tbody>
</table>
you’re going to take …with what you feel comfortable with.

I do tend to look at the street map more than I used to and plan my trip if it’s to an area that I don’t know especially; whereas, I’m sure before, I would go off and find my way somehow but now I tend to maybe look at it. I don’t draw a map or anything, but I do find out before I go.

I make it a habit more now than I did before, if I’m going to an unfamiliar part of the Island or an unfamiliar part of Victoria, I will get out the maps before and I’ll check it out, even to the extent of writing it down. Because I don’t want to have to try and find a certain street or a certain turn off the highway or something like that and find myself having to stop and dig out the map. We’re here now and we’ve got to go there. So I like to have it planned out in advance, just exactly what it’s going to entail navigating from A to B.

| Former Drivers | In other words, you plan. I think you can plan more how you’re going to get to your destination. And think |
I’ll avoid that corner, but I can get there. And as long as time, and usually time, at least for me, was not of an essence, really.

I would only go to certain places and certain areas and if I didn’t know where I was going I’d do a trial run.

… I’d offer to take you to the ferry, but I didn’t say how I’d get you there. I wouldn’t go out the highway; I’d go down on the back road. And everything I used, just me, I would use different routes and I’d use them because I think it’s either to your advantage. Even now when I walk, I figure out which road to take.

<table>
<thead>
<tr>
<th>Reliance on Significant Other to do the Driving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Drivers</strong></td>
</tr>
</tbody>
</table>

I haven’t driven any long distances for quite a while. I used to go up to Qualicum to the theatre up there, but I haven’t done that for a number of years. And then
when we’d go on any long drives, my husband would drive.

Former Drivers  I wasn’t. Well no because you rely on your mate, your husband. … But you know when you go together to make long pleasure trips, you’re two if you go together, and the husband, it’s just the way it is. The way it was.

We had almost decided to give it up… Actually, I uh, I uh, I was turning; I was getting nervous about driving - a little nervous. D was, I think her eyes were worse than mine …, but she was doing the driving.

Reduced distance

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>I haven’t driven any long distances for quite a while. I used to go up to Qualicum to the theatre up there, but I haven’t done that for a number of years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Drivers</td>
<td>He’s been quietly driving short distances and doing it time and time again and hasn’t had any problem.</td>
</tr>
</tbody>
</table>

…I try not to drive too long.

(Do you restrict your driving to only an hour at a time?)
No I don’t really, but I **try to**.

### Less Speeding

<table>
<thead>
<tr>
<th>Current Driver</th>
<th>I slow down more at the intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well I think the only change I have made is I don’t exceed the speed limit anymore… I drive to the limit.</td>
</tr>
<tr>
<td></td>
<td>In fact, where there’s a 90 sign, I will do 100. If it says 80, I will do 90. …Because they will give you 10 kilometres… Yes, they will give you a 10-kilometre leeway and I go for the limit. Going over the Malahat, anywhere. I will drive to the limit.</td>
</tr>
<tr>
<td></td>
<td>…maybe I drive more slowly where I’m not familiar with, you know? Like if say I were on the highway, then I would drive more slowly, and I would always be in the right lane.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>No matter, and no matter when I’m on the highway, no matter how many times I’m on the highway, I’m being passed by cars all the time and I’m sticking to the… speed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well if you drive down the road and you can’t see, I have to go slower.</td>
</tr>
</tbody>
</table>
You get the news reports about how many accidents there are in the rain. You have to drive slowly, but…

Now, uh…. but anyone who likes to drive fast has much more trouble in the rain.

**Less Lane Changing**

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Well I find I stay in one lane better than I used to.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If the traffic is going my speed, of course I'm quite happy to stay right where I’m at. But if they start slowing down, like if I’m in the right hand lane, and the traffic slows down, I’m going to change lanes because I want to do the limit.</td>
</tr>
<tr>
<td></td>
<td>If I know that like five blocks down the road that I’m going to have to be on the outside lane, have to be, then, I used if somebody was too slow I’d dodge around them or if there was a bus dodge around. And I notice now, I’m not doing that. I’m staying because I know that I’ve got to be there.</td>
</tr>
<tr>
<td></td>
<td>…And I don’t really think I’m holding anybody up because they’re holding you up.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>I stopped driving um, where I would have to drive</th>
</tr>
</thead>
</table>
very fast. …Change lines on big highways.

Reduced Driving

Current Driver  … And I’ve cut back my driving.

No, I have been ill quite a lot this past six months. I
don’t know why. There have been two or three
occasions when I’ve taxied to see the doctor.

We do much less driving than we used to…

Former Drivers  Oh, once in awhile, yeah. I had a license for it, but uh,
when I go to a funeral or something like that I just get
going.

It’s just that I perhaps wouldn’t be as venturesome and
wouldn’t go out at the spur of the moment like I used
to.
**Table I - 3: Conservative Driving Strategies**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Example of Supportive Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticipatory Strategies</strong></td>
<td></td>
</tr>
<tr>
<td>Current Drivers</td>
<td>It’s so much easier to look ahead and anticipate what the driver in front of you is going to do, and that gives you the ability to sort of plan, even though it’s momentarily. You have to plan to drive and to do it efficiently and I find that to me it’s almost a game, when I particularly drive out to the ferry because I see guys weaving in and out and I’m driving at a steady speed. And I’m usually there before they do, simply because I look for the hole, and it’s a game and it keeps me alert driving out there. One does not drive off the end of one's nose. However, that’s a bit of a trap. I find myself sometimes I anticipate what the other driver’s going to do and then they catch me by surprise because they’re idiot drivers and they do something absolutely off the record. … And so I don’t depend too much on trying to read ahead and driving with that kind of confidence without the caution and that’s why I feel I’m caught by surprise and I miss</td>
</tr>
</tbody>
</table>
something, that’s partly my fault because there’s been an idiot do something that I didn’t anticipate or did anticipate and count too much on that.

**Former Drivers**

<table>
<thead>
<tr>
<th>Being Attentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Drivers</td>
</tr>
</tbody>
</table>

**Former Drivers**

<table>
<thead>
<tr>
<th>More Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Drivers</td>
</tr>
<tr>
<td>Current Drivers</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Former Drivers</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
general driving down the road, but certainly at danger points.

Shoulder and Mirror Checking

Current Drivers

I look in the rear view mirror more frequently than I used to and I make sure that my mirrors are all set up so that you get the optimum view, because that’s where I find most of the problems are, as what R. says. The surprise that comes up beside you and it’s usually a young girl driving a BMW.

That’s about the only thing I’ve, as I say, I always check the rear view mirror and look over my shoulder and do all the things that I’m supposed to do and I don’t know that’s changed a bit, and it never will either.

I said I was more careful about looking over my shoulder to see and not relying entirely on the mirrors.

Former Drivers

None.

Driving Appropriate Distance from Car in Front
Well you know, one stays the prescribed distance from the car in front. That’s a useful sort of thing. I’ve always done that. Gives me plenty of time to deal with things, more or less.

… If I see somebody lane-hopping behind me, I just have an extra little watch over them because you never know what they’re going to do. I’d rather have them in front of me than behind because you never know whether they’re going to come in and diminish that space that you have between the other one. A lot of people, if that happens with lane-hopping, I’ve heard them say is they get frustrated; they get a little mad that the space has gone. Well all they have to do then is just increase the space, that’s all.

And defensive driving techniques, such as X mentioned that knowing what you distance you need to have between cars and if something happens up front, you’ve got time to, hopefully, find a space that you can get into to which will, that makes his driving comfortable. If every person would find that comfort zone, uh, and hopefully be able to stay with the flow
of traffic at the same time. Um, you know, that takes some fairly good judgment from time to time. To get out of the right lane and get into the, you know, the slow lane or which ever... so you’ve got the comfort space that you need.

Former Drivers  I’ve always, always driven leaving that length between me and the car in front.

Yeah. I mean I’ve never ever pulled right up to the car in front, even at lights. I always leave that space and then if somebody hits you from behind you’ve got a chance to stop before you hit them. I mean I’m not talking about from here to the door, but I’m talking about you know, from the front of the car to there. I mean I’m leaving enough space.

Maintaining Speed

Current Drivers  I think as much as possible, we should try to keep up with the traffic speed. Not being the little old lady whose doddelling along and uh, holding up traffic. We can’t hold up, we should pull over and the traffic can push on.

You’re better to be going with the flow of traffic, I
think you really are. You don’t want to be going at
70, because everyone is going 60. But, you wan to go
at 60 because everyone is going at 60. Otherwise you
are going to have people cutting in and around you
all the time.

Well, my strategy is to stay with the crowd now….
Go with the flow. … Because of speeding. I know
I’m speeding. … But, I’m staying with the flow. If I
slow down, the traffic is backing up in the back of
me. … So, I have to virtually stay with the crowd. …
And I know I’m speeding…

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None.</th>
</tr>
</thead>
</table>

**Signalling**

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Well if you’re following me, I signal way ahead.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>But then if you signal, if you’re going down</td>
</tr>
<tr>
<td></td>
<td>Shelbourne and you signal too soon, there are so</td>
</tr>
<tr>
<td></td>
<td>many driveways. So I go now roughly two telegraph</td>
</tr>
<tr>
<td></td>
<td>poles and start signalling then.</td>
</tr>
<tr>
<td></td>
<td>And I’m much more careful about signalling turns.</td>
</tr>
</tbody>
</table>

<p>| Former Drivers | None. |</p>
<table>
<thead>
<tr>
<th>Maintaining Condition of Car</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Drivers</strong></td>
</tr>
<tr>
<td><strong>Former Drivers</strong></td>
</tr>
</tbody>
</table>
important for steering, things like that. Those are things I can still do myself. I check the oil periodically.

I’m a bit more careful with my car... getting a check up and making sure it’s ok.

I try to keep my car in good condition, you know.

---

**Proper Adjustment of Vehicle**

| Current Driver | A lot of people don’t know if you go to a body shop and have your seat raised up beyond what’s built into the car. You just have to be able to see over the hood, that’s all. |

So I feel that coping with things like that. I think mirrors are most important, the way you have them adjusted, so that as we get older, we’re arthritic and we can’t turn our heads as much as we used to, as quick as we used to do, if we turn them really quick, we sometimes hear a creaking and we have to avoid that. So you can adjust the mirrors such that when you lose sight of them in the rear-view mirror, it’s
either one or the other and if you have it adjusted properly, you should be able to, when it’s diminishing and you are you know, left hand side, driving side mirror, it should be in sight where you can look over your shoulder. So you’ve got a connection with them right away through to them coming by. That’s the way I see it anyway. That’s the way I try to drive with that. And I make sure my mirrors are always okay before I, you know, when I’m in the parking lot or something like that. It’s difficult to adjust them in the parking downstairs.

My mirrors are set in such a way that a car coming up here and a car in my mirror are both there together.

**Challenging Yourself**

| Current Drivers | … you should keep challenging yourself to attain the highest capabilities at whatever you want to do. Now driving, there are so many aspects of a person’s health, eyesight included, that have to be, uh, at the peak of your age, and the only way to get them there and keep them there is to keep challenging yourself to, you know, occasionally drive in heavy traffic. You know, because that will keep you alert for what |
is needed in heavy traffic. But all these things depend on, right now, you want to maintain you health, in ever respect, uh, at the peak of your capability. That will maintain you driving capability.

I was only 40 when I became disabled. It was through Cancer, really, and I thought I would never drive again. And I was told, “Oh no, you will probably never drive again”. And then my husband, who was alive then, he insisted, because we always had a standard shift, and he insisted on getting automatic. And then, he insisted on me going out and I had to read do a driving test and all these things. But fortunately he did insist because 2 months later he died and I was left in Virginia and I had to drive back from Virginia to Nova Scotia. And um, and you know, I, I mean, if he hadn’t had made me, I know I never would have done that. I would never had the nerve to do it on my own. So, I do think whatever age you are, you face what, you know, what’s, what’s in front of you.

And know how comfortable you feel in certain... And
avoid the others. Don’t get involved with the others. I think that’s my philosophy and I think I’ve involved it too much and not driven as much as I should.

### Drinking Coffee

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>I make a point of trying not to be tired before I’ve got a big …And I don’t drink coffee anymore, but I do if I’m doing a long drive I have a cup of coffee before I start out.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>So that’s something a really make a point of being in good shape and having coffee before a long drive.</td>
</tr>
<tr>
<td></td>
<td>Well, I think it’s a coffee thing, and I stopped driving coffee completely 6 years ago. And then, I think fairly shortly after that, I realized when I was going to be doing long drives I better go back to coffee just once in awhile to, to keep me alert.</td>
</tr>
<tr>
<td>Former Drivers</td>
<td>Well I think that I did, as I say, I made sure that I ate an hour at least or so before I went out and drove. Because I’d be gone two or three hours to scan the old countryside looking for beets and peas, you know? It always took a lot of time because we always stopped at all these stalls as we got to know the</td>
</tr>
</tbody>
</table>
people. We stopped longer, and then we started
having coffee with them, you know, this sort of thing.

Maybe I’d even have coffee before I went out so I
was more alert.

Other Strategies

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Buying more suitable car:</th>
</tr>
</thead>
</table>

Yes, I changed the car because it suits me, fits me
better, more comfortable, so that I’m not fidgeting
while I’m driving. But I can still drive okay and I
have no problem with driving, as long as I can get in
and out the vehicle, which I’ve done by changing my
vehicle and that was one of the priorities, the reason I
bought it, was because of that. It’s kind of enabled
me to do this longer than if I kept the old one.

I also like to have a car that makes my driving easier.
And I used to drive a little pick-up truck and it’s so
much higher than a standard car and your visibility is
so much better driving high. Like you mentioned
your MG. I had Morris Minors for a long time and I
was too low to the road and then I got a little pick-up
and now I drive a mini-van. And the mini-van, it is very, very comfortable and it also has excellent visibility. So those things I think are very important, that you get something that assists you and doesn’t get in the way of driving.

**Car Pooling:**

I think, I was hoping to car share. Because to save money, and the environment and etc. People don’t like sharing their cars. I mean, I have a good neighbour I get along very well with, and we could perfectly easily have one car between us but it’s precious and all the rest of it you know.

I don’t see any reason to apart from economics. I find that we do… a lot of car sharing and so we try and encourage that.

**Self Talk:**

But I had to talk to myself to be aware when I’m driving, with all that on your mind.
Well, no, I think really to maintain a good driving standard. I sometimes talk to myself when I’m driving. I’ll say, you know, there is a pedestrian by the crossing, but they’re not going to cross. I rehearse to myself what I’m doing, or why I’m doing it, …

**Playing Music:**

I like to play music when I’m driving because I think it helps my concentration.

It gives you something pertinent and something you enjoy and serves as a background. Call it elevator music if you like. I don’t think it’s quite the same mode as that but it possibly relieves tension to a degree.

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th><strong>Passenger Navigating:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>And I counted more and more on X (significant other) being navigator.</td>
</tr>
</tbody>
</table>

**Adapting lifestyle to Meet Changing Abilities:**
… your lifestyle you know, you might, well, I belong to an organization. We used to meet in the evenings. We’ve been together 50 years I might say. And slowly, when the last member stopped day working, we decided that gave us freedom. And we all, we had a little vote. And in the summer time, but we don’t really mean the summer, but in the better weather, we had evening meetings for the first two years and in the winter we had day meetings. And then after two years, we’d all sort of got used to that, and then we went to just ni... to afternoon meetings.

But I think the other thing was that, like I turn 80 this coming spring, and I would think that in the last year before I gave up my driving, I wasn’t taking on as many obligations like picking up vegetables and stuff. I changed that part of it. Maybe it was a warning at the time, but I didn’t pick it up as that. But I think that’s probably I knew I couldn’t handle – and I always made sure that I never went, being a diabetic and I’m a really terrible one – but I would make sure that I had taken my insulin and stuff maybe a good hour before I’d go out in the car. There were times
when I didn’t, and I think now, when I look back, it’s probably more the diabetic business that caused the sleepiness. No I just, all of a sudden I realized I can’t drive.
<table>
<thead>
<tr>
<th>Driver Type</th>
<th>Example of Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>Yes, I don’t drive at night anymore. … Oh probably maybe about three or four years ago when I realized that my eyes were not contracting to keep the light out. And I always, nowadays, I like to know where I’m going. I think so. You gradually evolve into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens. I think it’s just part of aging; you know it really is. I think it’s part of aging. I mean when you go out and the roads are slippery and even when you’re walking, you’re cautious of where your feet go because you know that when you’re older, when you’re in your eighties, a fall means the end of your independence. So it’s just something that comes with the years.</td>
</tr>
<tr>
<td>Ex. 2</td>
<td>I haven’t driven on the highway for several years, by choice. Because I don’t wish to go hailing along at 100 like everybody else seems to be doing. Well, no. I have no intention of going anywhere near the highway.</td>
</tr>
</tbody>
</table>
I mean, last time I went out all arousing with the seniors we went up Island in a bus and we saw two accidents. And from the look of them, neither of them needed to have happened. So anyway.

It is with me, I think my responses if I skidded wouldn’t be as quick

And also I think it’s perhaps a matter of pride. I think I could probably drive on ice as well or better than a lot of Victoria drivers that haven’t driven anywhere else, but if by any chance, I had an accident they would immediately report it as an 81-year old driver. I mean, they never say 25-year old or 30-year old.

No, I’ve been trying to think of what do I do differently. I probably emphasize the sort of easy way more now. If for instance, supposing I went over to Fairfield Plaza to shop which is an absolutely hopeless place for parking, and I couldn’t find parking, I’d come home. I mean, why bother? I might have two or three years ago, I might have parked on a side street and walked up.

Oh no, not yet (referring to thinking about stopping voluntarily). I don’t go as far as I used to perhaps.
Ex. 3  I think so. You **gradually evolve** into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens.

**Former: Voluntary Cessation**

Ex. 1  I think gradually … I became concerned about driving at night. It didn’t stop me if I needed to go somewhere, but those were my concerns. And driving in heavy traffic, I’d avoid it if I could. There was no point in getting involved. And certainly heavy rain and snow were taboo. I just didn’t go. *But it didn’t push me to the point where I wanted to stop. I was just aware of those bad feelings and tried to avoid any situation where I was made to drive or tempted to drive.*

Ex. 2  Well … like she said. She stopped driving at nights and that’s what I did too. Couple of years anyhow before I quit altogether. But, I quit driving at nights. It just scared the hell out of me – driving nights, especially when I get those lights shining in my eyes, you know.

Oh, the rain. It gets in the… *I just, whenever, whenever it rained, when I was still driving I just didn’t, I didn’t drive, honestly.* It’s, I lost uh I lost two tires on (inaudible) … rain. *Way before I quit driving.* I just couldn’t see close by then. You know and I run into a curb… (Inaudible)… tire. Place that happened to me that was almost the same place, too (Chuckle).
Ex. 3  Well, with me I uh, I would say about 7 or 8 years before I quit driving altogether I started, I started thinking of stopping driving at night. I quit driving 6 or 7 years before I did. I never drove at night.

Former: Involuntary Cessation

Ex.1 I don’t like driving at night time and I drive as little at night time as I can possibly get away with … I stopped driving at night. Since the wife passed away I don’t drive.

Former Driver (Involuntary), recently began driving again

Ex.1 Well, yes I certainly did.

I try to stay to certain roads, follow certain roads, and when I went on a new road, I had a great deal of trouble. I’m much slower than I was. I can’t see the road signs as they flash by. I’ve got to go slow on a new road. A road that I know, I know where the stop signs are and everything is. I can remember that fairly well. But I know where everything is and I can drive much easier on a road that I know. I adjusted to that.

Well I tire much easier than I used to so I try not to drive too long.

Well if you drive down the road and you can’t see, I have to go slower. You change your driving habit to, you have to adjust
somehow so you can find the road. And you know that you’re going to do that, so adjustment is in order.

Yes I am, but I’m not as confident as I used to be. I think I have to be more careful than ever.
<table>
<thead>
<tr>
<th>Driver Type</th>
<th>Example of Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>I moved to Songhees just so that I could walk to town and really there’s a lot of people in our building that don’t have cars, simply because a taxi is available and the bus goes by. I’m getting ready to quit when I can’t drive.</td>
</tr>
<tr>
<td>Ex. 2</td>
<td>It’s important for independence, but I live in the Royal Oak area; I took the bus here because I thought by the time – I’ve taken someone else here before – and by the time you drive around finding a place to park and I get lost in a phone booth … and it was so easy to find this place with walking. And if I go to start if I have to go downtown and I’m just going to be in the centre part of town, I’m going to take the bus just so that the transition will be gradual.</td>
</tr>
<tr>
<td><strong>Former (Voluntary cessation)</strong></td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>Not that I’m aware of: …I might qualify that a little bit. I think I became a little more cautious. … Than I had been maybe 5-10 years before.</td>
</tr>
<tr>
<td></td>
<td>Well because I wasn’t thinking about it all the time. But once I sort of made up my mind, then it took time. The place didn’t sell right away. The place didn’t sell right away. It took about five-six months or something. Yeah. It was just progression.</td>
</tr>
</tbody>
</table>
Table I - 6: Examples of “Non-Changers”

<table>
<thead>
<tr>
<th>Driver Type</th>
<th>Example of Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>Well I think the only change I have made is I don’t exceed the speed limit any more.</td>
</tr>
<tr>
<td>Ex. 2</td>
<td>Not consciously (referring to changing his driving), but I know that I know that I’m not as crisp as I was.</td>
</tr>
<tr>
<td><strong>Former (Voluntary Cessation)</strong></td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>I don’t think I changed my style or made any difference to my approach to it at all. I still drove at night; I can drive in snow… I’ve driven in lots of different countries recently, one side of the road or the other, left, right, in town, in traffic, in little European cities, villages and so on…. Anyway, I didn’t give up anything. I would go anytime, anywhere under any conditions … One day I was a driver doing any kind of driving you want and then no car, no driving.</td>
</tr>
<tr>
<td>Ex. 2</td>
<td>Well, I knew after I had the implant that I really couldn't see well enough and that … It just almost took my confidence away. I just didn't want to be behind … I wouldn't be behind the wheel because I couldn't see well enough to drive. I didn't try it. I just … cold turkey, I guess you call it. I didn't feel right within myself and I mean if I had had an accident it would have destroyed me, I think. So that was quite emphatic. I didn’t, I didn’t realize it was going to be that way. I knew I was on a slow decline, but that really was quite definite.</td>
</tr>
</tbody>
</table>
Ex. 3 I didn’t, but I might have done had I continued driving because it’s about three years ago that my specialist told me I was starting to develop cataracts. And I was beginning to notice a glare, a slight glare. So possibly had I continued driving, that factor might have come into it. I might not have gone out in the dark in the rain unless I really had to sort of thing. It hadn’t restricted me up to that point, but it was something that I had begun to notice.

No, not that I can think of.

Former (Involuntary Cessation)

Ex. 1 I haven't changed the way I was driving.

Ex. 2 Well, I think. I find that things are very much the same uh…I do my shoulder checks. I’m trying to do that, you know, repeatedly¹.

Ex. 3 I drove a lot at night. I made a lot of calls in the middle of a stormy night and I did it, back then I liked driving at night. I still like driving at night and I can still see just about as well at night.

¹ This is a statement from the former driver who showed up to current driver focus group, despite adequate questioning about driving status and explanation that focus group was for current drivers from researcher at time of recruitment. The subject did not seem to be aware that he was unlike the other members of the current driver focus group.
Table I - 7: Examples of the “Consistent”

<table>
<thead>
<tr>
<th>Driver Type</th>
<th>Example of Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>I just do not speed excessively anymore.</td>
</tr>
<tr>
<td></td>
<td>Which I may have done when I was younger of course.</td>
</tr>
<tr>
<td></td>
<td>No, I’ve always thought it was stupid. I’ve heard people say so many times when they’ve had an accident that it happened so quickly and I know it can and I’ve always been very aware of that. So I’ve found it to be very appropriate to be careful in the car now.</td>
</tr>
<tr>
<td></td>
<td>That’s about the only thing I’ve, as I say, I always check the rear view mirror and look over my shoulder and do all the things that I’m supposed to do and I don’t know that’s changed a bit, and it never will either. I believe in that.</td>
</tr>
<tr>
<td></td>
<td>I really; I’m afraid I disappoint you. But the fact is I can’t think of any other change because I’ve always been conscientious.</td>
</tr>
<tr>
<td>Ex. 2</td>
<td>I don’t think I’ve changed that much because I’ve always been serious about my driving, that I enjoyed it and I wanted to do the best job I could for my own safety to get there, where I’m going.</td>
</tr>
</tbody>
</table>
So I don’t think that I have changed very much.

Well I don’t particularly do that. I concentrate, always have done, on what’s there.

I’ve done most of them all my driving, planning where I’m going, making sure that I’ve got time to get there. I mean there’s nothing worse here than W’s hair, she puts it up in a bun, you know, and my fingers are getting a little numb and things and I’ll say, “Well your appointment’s at 3:00. We should leave here at 2:30 in case there’s, you know, digging on the road or something.” I like to get there five or ten minutes before

Ex. 3 I don’t honestly think I have changed at all that much. I know I’ve always had a tendency to possibly drive a little fast. And I’m very careful to watch my speed. I do check my speed limit much more than I used. And I think that’s since I did the 55 Alive course. Because it really is an excellent course, and it does make you think of all the things that you should be doing and checking. I look at my mirrors much more frequent than I used to because I know that’s something that they are going to be looking for in any test.

Well, I think I’ve always used strategies. I know my daughter gets very annoyed with me. This comes from my original instructor. If you
know where you’re going, drive in that lane. And I mean, if I know I’m going to turn left I make sure I’m driving in the centre lane because I’m going to make a left turn. I mean, it’s a matter of convenience or laziness. I don’t know.

I think I probably choose to drive an easy route if there’s one. Of course it’s always madness as driving the scenic route, isn’t it? Rather than driving the busy streets, but why not... I’ve always rather tended to do that because I don’t think I’ve ever honestly been in a hurry to get anywhere.

But I don’t drive at night. My night driving has been pulled because I’m very light sensitive so I tend not to drive at night. But then I’ve always avoided driving at night.

Well, I think I did start them (referring to strategies) all way back when.

**Former**

**(Voluntary cessation)**

Ex. 1 I don’t think so

He had his medical when he was 80 and he passed that with flying
colours, so he really wasn’t expecting to have to drive, well he knew eventually he would. But as far as the doctor was concerned, he was in full control. I think the only thing, living in Vancouver, the traffic, well that’s one of the reasons we moved over to Victoria.

But I don’t think he changed his driving actually; pretty much the same.

I drove the same way; actually I think the main thing as far as driving was concerned, I was very cautious as far as intersections were concerned. Even though you had the right-of-way, that someone barreling through a light and trying to beat a light, and I’ve always been very cautious of that. What do they call that, preventative driving?

Defensive driving. Well actually I’ve been a defensive driver most of my life, seriously. I really have. I’ve always been very cautious because no matter whether you have the right-of-way or not, it doesn’t stop some idiot to try beat the red light or making a false move. So I think very cautious in traffic throughout most of my life, yeah.

I don’t think so. No, I don’t think so. As I say, I drove the same way. I drove up to three weeks ago, a month or so ago. I think my driving
habits and patterns were the same right up to the day I quit.

So no, I don’t think so. Chick, do you? I don’t think so.

Even though I had MS, I still kept driving. I’ve driven steadily for about twenty years with MS.

I’ve always been confident as far as driving is concerned. I felt as long as I was relative cautious, I drove defensively. But that’s not going to stop some yahoo from hitting you. But if you can drive defensively, I think that’s a strong point you should make in your dissertation here, that defensive driving. I would emphasize that point. Be alert. Don’t take for granted that somebody’s going to give you the right-of-way. Be careful and just stop that minute or so ahead of time and make sure that the coast is clear. Defensive driving.

I’ve done it most of my life, as far as being aware that somebody could come out of the right side of you, somebody could cross in front of you. I’ve always been very much aware of that.

Ex. 2 No, I don’t think I changed.

No, I don’t think so because you know, I took that course. You learn all the safety things and I didn’t drive that long so I didn’t have to
When I stopped, I stopped. I can’t think of one.

I think I always did it. Yeah. The business of being forced into it by age or something doesn’t really apply, not in my mentality.
Table I - 8: Consideration of the Pros and Cons of Stopping Driving by Former Drivers who Stopped Driving Voluntarily

<table>
<thead>
<tr>
<th>Cons of Driving Cessation</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighing the Pros and Cons: Pros &gt; Cons</td>
<td></td>
</tr>
</tbody>
</table>

Ex. 1
I don’t have to worry about having a repetition of what happened to begin with, and therefore maybe killing someone or maybe hurting someone. And there’s also the lack of expense of operating a car; and there’s also, well just generally worrying about the upkeep and the maintenance and stuff that you have to go through every day when you’re driving a car. It takes a little getting used to when you’ve had a car at your beck and call for a number of years; but to me anyways, if you’re mature enough and you think about the positives as opposed to the negatives, there isn’t any choice.

Ex. 2
There is no way of getting up there by bus. I could wait for my son who could take me out on the weekend or something like that, but uh, so there’s a loss of, loss of freedom. But, as I said the advantages of not driving really outweigh the disadvantages.
Well I stopped driving because, the reason X (husband). Sold the car and I think the reason for that also was that X had reached the age of 80 and he had to apply for a new driver’s license and that entailed going to the doctor and that entailed the study of do we really need it, and we looked at various options. Well we don’t really go very far in the car at any time except for shopping. And with the expense of the gasoline going up all the time and insurance, we thought, “No, we can live without it. We’ll try it for a year and if it doesn’t work, then B. doesn’t need to drive, I could drive for the shopping. And that’s really all that we were doing.”

---

**Weighing Pros and Cons:**

**Equal Emphasis**

Ex. 1  
Okay. Not being able to throw a winter jacket in the car so you’ve got it handy when you go somewhere else. No more impulse buying of large items. ... But there’s a good side to that – it’s amazing how many people will deliver. Okay, what else? Not being able to get to events that are not in town and particularly if they’re on a Sunday.

Ex. 2  
Well, you know, it was always good to be able to
drive in case my husband got sick or something. It’s about all I can think about really because you know, he drove anyhow and it didn’t really matter that much.

Ex. 3

If I’m travelling, well there’s plus and minus to this. Every year I go to England because my mother’s still there. It means going the day before because it can take you pretty well, from Duncan it’s a terrible place to go anywhere. It’s really bad to go anywhere from. So it takes you pretty well all day to get over to Vancouver so you might just as well stay the night and fly out the next day, even if it’s late afternoon when you fly.

… But then I’ve only got the cost from Duncan to Victoria because that’s Greyhound and you have to pay that; otherwise I’ve got a bus pass. If I had a car, I’d probably drive it over like I used to and leave it in Park and Fly. So that would be an extra $50-$60 on the ferry, $100 and something, depending on how long I’m gone for the parking. It pays for the hotel there and back. … Well you know, either way, it costs me about the same, but it’s more comfortable.
Weighing Pros and Cons:

Cons > Pros

Ex. 1  Well, at this moment I’m not sure. Other than a clear conscience, is there an advantage of not driving? It’s um, I’m working on it - the whole thing. It takes much more physical energy um and uh, much more time. I’m quite active and I am lucky living not too far from the university because there are buses that come out of here. But um, there are some places that the buses just don’t go to. And uh, the number 7, which right goes down Fairfield to go into, goes down Foul Bay to Fairfield to go into town, only runs Monday to Friday. I mean it’s primarily for UVic and Camosun and it interests me about all the people who live down in that section because it means that on Saturday and Sunday that there is no one, no bus for them. So, I’m, I’m quite fortunate and able, being able to get a bus from that way. And as I say, I do, I am considered handicapped in the sense that I have my card and I can use the uh, Handy Dart, which of course the demand is greater than the supply. They are very good uh, but it’s a
little hard to get it when you really want it. And I do have taxi savers, but I’m afraid I belong to a generation that is not accustomed to using taxis.
Table I - 9: Consideration of Pros and Cons by Current Drivers

<table>
<thead>
<tr>
<th>Consideration of Pros and Cons of Driving Cessation</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighing Pros and Cons:</td>
<td></td>
</tr>
<tr>
<td>Equal Emphasis</td>
<td></td>
</tr>
</tbody>
</table>

| Ex. 1 | The only reason I would have to keep on driving, well I guess I can always hire a taxi. That’s not a legitimate reason either. I was going to say just to go shopping or something like that because I must go shopping. So I have to drive. But I can always hire a cab. If finally it came down to it, there’s no reason I have to. |
| Ex. 2 | Well, pretty important. It’s the difference between independence and you know, depending on the kindness of strangers who offer and family and for too many people for rides or taxis. It’s very limiting I would imagine if you couldn’t just hop in your car and go and do something. I can walk a lot of places, like to here, because I live in Gordon Head. Luckily I can do a lot of walking but it’s generally take away… I don’t know what I’ll do but I’ll have to adjust, I suppose, when the time comes. |
Ex 3. I think for me it has been a necessity in any, any career that I’ve been in. As I approach full retirement. I don’t consider myself quite retired yet (coughs). I’m looking forward to the time virtually downtown in an area where we can reach almost everything by foot or by public transport. I’m looking forward to the day when I don’t have to drive anymore.

### Weighing Pros and Cons:

#### Emphasis on Cons

<table>
<thead>
<tr>
<th>Ex. 1</th>
<th>(Disadvantages or negative aspects of driving?) I don’t think there are any. …Yeah, I don’t think there are any.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex. 2</td>
<td>Yes it does and it does everything that, being able to drive around the Island is to make it more enjoyable. And frankly there is no form of public transit that could possibly substitute for that.</td>
</tr>
<tr>
<td>Ex. 3</td>
<td>Oh, I think it’s fine (referring to public transit). It can’t hope to compete. There’s no way it can put itself forward as a substitute for older people when they’re unable to drive</td>
</tr>
<tr>
<td>Type of Awareness</td>
<td>Evidence</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Recognizing Limitations</td>
<td>Aware</td>
</tr>
</tbody>
</table>

Ex. 1 The other aspect is physical. I can’t do a neck turn, shoulder check because I’m stiffer. And cognitive, you know you slow down cognitively too. They say the best age for fighter pilots in World War 2 was age sixteen. They were really quick and as we get older we do slow down but knowing that we compensate.

Ex. 2 You have to realize that you are not 100% and you work around that. For instance, as you said… I come down to Victoria once a week to work with my daughter in her business. And I don’t leave until I know the traffic is not the commuter traffic because that’s horrendous.

Ex. 3 It’s something which is inevitable. It’s only a matter of time before we have to recognize that we cannot continue to drive because it’s no longer safe.

Ex. 4 I think we are far more, as we drive longer, we are become aware of these problems and we worry. It’s like everything else – When is the ball going to drop?
## Risk and responsibility

<table>
<thead>
<tr>
<th>Aware</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ex. 1</strong></td>
</tr>
<tr>
<td><strong>Ex. 2</strong></td>
</tr>
<tr>
<td><strong>Ex. 3</strong></td>
</tr>
</tbody>
</table>
| **Ex. 4** | Here on the Peninsula, the main roads especially are very busy and one has to be constantly on one’s alert to be able to successfully makes one’s way through all the traffic on the road. *As one gets older, it becomes more difficult driving at night*, particularly when it’s raining. A lot of the new cars that are out with these extremely
bright headlights – I forget the technical term for them.

They’re extremely bright headlights and you get those with a combination of wet roads and then they’re wet, and then it becomes more difficult to be able to drive carefully and successfully. And as one gets older, that’s one of the things that you take into consideration before you say we’re going to go somewhere.

Because it’s fairly obviously more hazardous driving at night with wet roads and so on and if you don’t need to do it, stay home.

If it’s not an important matter. If we decided we want to go and see a movie early in the day and then by the time it comes to see the movie it’s chucking it down with rain and it’s dark, we’ll say, “Oh to hell with it.” And we’ll go tomorrow.

Well it’s less pleasurable. That’s the best way I can sum it up. We say to ourselves, “Why should we inflict this on ourselves when we have alternatives?” The alternative is not to drive. We don’t need to go so let’s
not drive.

... I think you’re exposing yourself to potentially more hazardous situations.

Driving Ability

Aware

Ex.1 I don’t ever want to, it’s not a criticism of you personally, but I don’t want to ever feel I’m so confident I know I can go on driving. I always want to be aware that I could have a problem and that’s why I go to Young Driver’s. And if I ever got to the point where I began to feel agitated when I drove, then I would know I have to quit.
<table>
<thead>
<tr>
<th>Type of Awareness</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recognizing</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Limitations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aware</strong></td>
<td></td>
</tr>
</tbody>
</table>

Ex. 1  
Well you know when I saw my driver’s; I didn’t know it was still good. I thought it expired but it doesn’t expire until next April and when I looked at it I thought, “Gee you know, I could drive.” And the next thing I said is, “Don’t be an ass. You couldn’t drive. Your reflexes are dull; your vision isn’t that good. How can you even think about it?” This is just me talking to me.

Ex. 2  
Well, I would say that for me that it certainly wasn’t any one factor. My eyes were bad, but still good enough to pass the examination. My reflexes were slow, but uh not dead. Uh, but when you start putting all those things together, common sense tells you hey, time to quit.

Ex. 3  
Well, I accepted the fact that I couldn’t drive at night about 4 years ago, so that was out. And friends would take me. Um, (silence)... I’ll have to think about that one for a little bit. And I restricted where I
would drive. In other words, it would be down to Monterey Centre, which is easy, it would be up to Government House gardens, which is easy or up to the Symphony office, but I stayed away from the highway and so on and so forth. You know, again, you just, you fit your situation according to what you can manage.

| Ex. 4 | It uh, it’s not an absolute you can’t drive at night. It’s just you feel very uncomfortable that is. |

Yeah. Yeah. There is some sort of grey areas to it. And then I think, as time goes on, I mean do realize it, but you will become more accustomed. Your habits change a little bit. This just the way it is.

| Unaware |

| Ex. 1 | I didn’t know why, but I had an appointment November, over a year ago with my doctor. While he was checking me out, he said, “You should…”, did he say take my car home and get somebody to take me to the hospital. I guess he must have felt that I had a stroke coming up. |

Yeah so I got my son-in-law to take me to the
hospital and another doctor checked me out. I thought, from then on, I thought I was still normal. But later on I felt my right arm is not as functioning as now. But I’ve been taking training for a year now. Exercise.

(Was it after you had a stroke or after that doctor’s appointment)

After doctor appointment.

(Okay, so it was before the stroke thing?)

Yeah, I didn’t realize it then.

And I said, “What is a stroke?” I said, “I don’t know what it is.”

They say, something in your, whatever it is in your head, is not balanced

I was still driving, with my wife's shopping here and there, going Sunday to church and weekdays. I said,
"nothing happened." I would say, “I feel normal. Why should I stop?” But until he said, “Should anything happen, I can lose my driver’s license anyway.”

Ex. 2 I guess because of the pleasure; you don’t want to give up the pleasure of it. It is after all, a luxury. So there’s complete denial of any detrimental health effects that might be in the way. I think you might turn your back on them or ignore them and carry on driving happily; maybe until you find out that you were wrong or something. I don’t know.

Some Awareness

Ex. 1 Oh no, I can still drive. But it’s the left leg is the one that’s originally involved in the MS and it looks like the right leg might have kicked in along a similar nature. Because the left leg drags a little bit and the right leg has been my main standby, but it started to act up here about oh, two or three months ago. Yeah, I was advised by my doctor to just stop driving. So that was the reason for it. It’s strictly – I can still drive no problem.

Just the physical. As far as I’m concerned, I’d still be
driving now. I still have a lot of faculties as far as the
driving is concerned. No problem driving, parking,
whatever.

Well, terribly good health, good faculties as far as
eyesight was concerned, hearing was concerned.
Basically healthy. Physically healthy.

No, because I think with MS, you know, you’re
fooling around with the brain and that and I think
even hand controls…actually I’m not interested in
driving. We’ve made our final decision. No problem.

Well the only thing when they had two pedals there,
I couldn’t count on my left leg as far as driving was
concerned. I had to rely on my right leg primarily.

---

**Risk and responsibility**

**Aware**

| Ex. 1 | I would doubt it. I’ve had a couple of situations with the right leg giving out. That’s the one you use for the gas and for the brake there, so with my little buddy there riding with me in the car, I can’t take a chance on her life and my own life too. |
Ex. 2 Now my mind is made up and I thought I’m being reasonable, and not making judgements and hell, I can do this and ignoring it, that I know what the risks are. Just like this old man that had his car cut in half and his wife banged up, I’m sure he doesn’t sleep well these days.

Ex. 3 And then I made up my mind, I just said to myself, “Okay, you go to J’s office, give him the keys, get him to drive you home, and you’re not going to drive any more. You can’t risk killing someone.” And that was why I had quit driving.

Well, because I have stuck to my original decision that I can’t risk killing somebody to get – I’ve still got an active driver’s license but I’ve never used it since that day. I’ve never driven since that day. Somebody said, “Oh, you’re just obsessed.” But it isn’t that. It’s that I honestly do believe I don’t have the right to threaten somebody else because I have a problem.
Table I - 12: Awareness of Former Drivers who Stopped Driving Involuntarily

<table>
<thead>
<tr>
<th>Type of Awareness</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizing</td>
<td></td>
</tr>
<tr>
<td>Limitations</td>
<td></td>
</tr>
<tr>
<td><em>Unaware</em></td>
<td></td>
</tr>
</tbody>
</table>

Ex. 1

They don’t like it. Not supposed to talk to those inspectors. There’s five of them. So what are you going to do? We go there, everybody goes there, you take your driver’s licence. You take your insurance forms. Okay. And you wait there. And five will come out of their office and they, you know, the counter’s there with all their names there; and you hear them talking back and forth; and they go back in their office; 10:00 o’clock they all come out, they call the person’s name, and we go out driving. Then they don’t bother you, what kind of driver you are, you look around, they pay no attention. Then when they come back, they say you’ve done this wrong and done that wrong. Nobody do anything. Seniors are all good drivers.

Ex. 2

One point I wanted to bring up because it’s in my craw badly, the two doctors that saw me after my last stroke, they saw me in my last stroke and I was
out of it. I’m not denying that because I can’t remember any part of it. And I certainly was in bad shape for four weeks, three or four weeks. And when I went to enquire, “Now why won’t you sign to renew my licence?” “Well, I’ve got to protect the children.” I said, “Oh, nobody’s here to protect the children. That’s your main job is protecting the children so you’re going to take all the drivers off the road to protect the children and you leave all the bad ones on the road.” But two doctors in a row gave me that same answer. I had the same responsibility I guess in veterinary medicine. I had to protect the children.

Ex. 3 No, it’s not fair at all. Three of us here, we’re all good drivers. We’re seniors.

### Driving Ability

<table>
<thead>
<tr>
<th>Unaware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex. 1</td>
</tr>
<tr>
<td>(A man who failed a driving test several times) I have no reason to give up my, stop my driving at all.</td>
</tr>
<tr>
<td>Ex. 2</td>
</tr>
<tr>
<td>So I go out and I take my test and I flunk it. Now why did I flunk that test? I flunked that test because no where in the book, no one ever said anything to me, in all the years I’ve been driving, well I guess</td>
</tr>
</tbody>
</table>
somebody did once, about looking over your right shoulder. So if you see a bicycle that’s coming up on the right hand side, you can stop or move. I thought, well, okay I’ve heard about that, but that’s it. So I’m flunked for that again – or not again, but I’m flunked for it by the guy. I thought I was doing great, you know, coming up to the stop sign and all the rest of it. I thought I was doing, hey, hey, we’re going to pass today. That wasn’t the case. I flunked it. So he told me that what I did, once again. Right, turn your head to the right so you can see the bicycle guy coming up on the right hand side.

Well my God, if that flunks you, and I’ve been driving, watching bicycles and God knows what else, all my life, you know, what other little trick are they going to have up their sleeve you know?

I don’t know whether it was loaded or not, but the point is, if they’re going to ask questions like that, they should put it in the book the type of questions they’re going to ask, and not throw something at you that you don’t know about or that you have very
little knowledge about, or that it’s most important that you look after this particular end of it. So I was…

Now the only thing is, I haven’t received, or my doctor, if he had, he never said anything, received a report on the health report. I never received anything on that. Well I don’t know whether he has or whether he hasn’t. He’s never said anything to me. So I thought well, probably it has something to do with this test. So I thought well, we’ll wait and see.

So when we finished this test, the guy said – he was very nice about the whole thing – but the point is, that if you’re going to take a test and they test you on something, completely, well you’re not familiar with it, I mean you do it automatically, you know. I don’t know. It’s a very strange way. I don’t know whether they’re trying to catch you or not. The idea as far as I am concerned about a driving test, is to see whether you can drive your car or not, and what you do if somebody pulls up in front and so forth, etc. etc.

Ex. 3 Now there’s another situation arose. We were going
around a corner; we were going up a hill to go onto the highway, okay? Now I’ve driven around that same corner I don’t know how many hundred times.

And I drive up slowly. Nobody told me to go like a bat out of hell, but this guy did. He told me, “Hey, hey, come on man. Get going. Get going; get in front of that guy.” And I thought, “Boy, are you crazy or something?” You know. You’re not supposed to get, I’m taking a test and you’re telling me I’m to get in front of that guy I couldn’t even see because I wasn’t looking to the left. But anyway, he grabbed the wheel and said, “Step on it.” Another thing he failed me for. Well, this I don’t like. If they’re going to fail me for the things that I was failed for, then I want to know about them ahead of time. Not behind.

It seems so stupid. I’ve been driving a car for a long, long time and now I can’t drive it any more because I didn’t look to the right a few times. And what was the other thing? Oh yeah. Speeding up the ramp to get onto the, the guy that’s coming along on the highway, you speed up and you take a look and you
give him a dirty look. You stop, I’m going to go ahead, you know. Well hell, bells, I mean, come on, eh? I think the route where we’re not going to get in trouble. But he seemed to think that if you looked at the guy and gave him the look that I’m going to get in here or else, that away you go. All’s well. I don’t know. I don’t go for that either.
Table I - 13: Current Drivers’ Thoughts about Stopping Driving

<table>
<thead>
<tr>
<th>Type of Thought</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fact of life/Inevitable</td>
<td></td>
</tr>
<tr>
<td>Ex. 1</td>
<td>Um …When it comes time that I can’t drive anymore, I won’t drive anymore. Um, I certainly will miss my car. I will miss the independence. There is no doubt about that. But no, I really don’t have more than I certainly have thought about it, but I don’t dwell on it.</td>
</tr>
</tbody>
</table>
| Ex. 2           | Like I don’t go, as I say, I don’t particularly try night driving unless it’s a very short space from home and as I say, I wouldn’t drive in Vancouver. I always try to go before the rush hours and be home, you know, I look at the clock and try and work it that way. I mean, but I’m not, I don’t feel that I can’t do it if I have to, but I think it’s less stressful if you don’t have to. But I know it would be hard to quit driving. But after seeing how my husband was and what I had to say about it, you know, it wouldn’t ruin my life. To me, driving has always been a way of getting from point A to point B. Like, with him, if I’d say sometimes, “Well what did you do this afternoon?” “Oh, I just took the car and I took a spin out to
Sidney or something.” I mean to him that was a joy. I would never waste the time on that. So it’s just strictly the convenience and, you know, we all have to accept the fact we’re not getting any younger. So it’s bound to come. We’re all going to have to stop at some point.

Ex. 3 I’ve thought about it. I don’t like thinking about it. But I can visualize the time when I’m going to have to. I’m 85.

No Thoughts About Stopping

Ex. 1 Are you thinking about stopping driving now?

No.

No, not thinking about it. No, no.

Ex. 2 So are you thinking about stopping driving?

Not as long as I can drive safely.

But you haven’t thought about stopping.

No.

Well I think a number of people are failing incrementally
physically and aren’t aware of it.

And therefore their reaction time is very much slower. Mine has slowed a little bit but not a lot. I’ve had tests on my reaction time and it’s fairly prompt.

Ex. 3 I haven’t really thought too much about it although it’s clearly an inevitability. Despite your prognostications in the test last week, I still think I’m reasonably competent (referring to another study, in which he had poor performance on a driving self-assessment tool)

---

Plans for stopping

Ex. 1 Well, it’s very important to me especially now that I’m on my own. One of the reasons, I lived in Dean Park for 16 years but I bought this place a year and a half ago simply because I realized I might need to be close to Thrifty’s grocery store and shopping and all the rest of it. I had to face the fact that maybe I will lose my licence one day though I think I’m in better shape than most octogenarians. That was the whole reason for buying this place.

Ex. 2 I moved to Songhees just so that I could walk to town and really there’s a lot of people in our building that don’t have cars, simply because a taxi is available and the bus goes by. I’m getting ready to quit when I can’t drive.
Ex. 3 But uh, I think I would avoid stretching myself too far in what I did. In other words, there would become a point that I knew I couldn’t drive any longer and I would have to do something about it, like change or residence or always relying on taxis and such. I think if you must rely on taxis, I guess, you get much more careful in how you use them because of the cost.

No thoughts about preparing for stopping

Ex. 1 I don’t think there was any life-changing event. It’s not quite the way of responding perhaps, but in preparing for and planning for retirement, it was, neither my wife nor I factored in that we might not be able to drive for very long. We took it for granted that we’d be able to do that, that we’d be able to continue driving. So it became pretty well an extension of what we’d been doing for many years. We’ve been a two-car family for as long as I can remember. And as such, we’ve been able to do things together and do things separately and in the later years since I retired, there has been, it’s always been a given that we’d be able to drive with little consideration that we’d not be able to do it. And to that extent, we have not really prepared anything by way of a strategy I don’t believe for the event that one or both of us having to stop
I thing it’s, one of the things that we’ve been able to do over the
last ten years or so is to have more discussions with our friends
about the business and the process of driving and to see how our
friends have reacted to it. And in some cases, they’ve given up
driving for a variety of reasons; finances may be one, physical
ability may be another. But some of our friends like us, say, well
if the weather’s really bad, we won’t go out. We won’t go to
whatever it was that we were planning to do. So I will say that
they will prefer not to drive at all after dark because of the
various constraints that they see and so on. And I guess the fact of
seeing other people change their driving habits, has sort of
registered. Not really made a big impact, but we’re still pretty
well taking it for granted that we can continue to drive and
continue to drive safely. So I don’t think we’ve tried to plan for
what would happen if we were unable to continue driving.

Ex 2 I don’t even know how I would set about it. So things like that
from which we gain a great deal of pleasure would be deprived
from us if we were not able to drive.
Table I - 14: Thoughts about Stopping from Former Driver’s who Stopped Driving Voluntarily

<table>
<thead>
<tr>
<th>Type of Thought</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fact of Life/Inevitable</td>
<td></td>
</tr>
</tbody>
</table>

Ex. 1  Well, I knew that I couldn’t… I mean, I knew that this was coming from a medical point of view. I knew that eventually it was coming. And when it came, that was it. And you don’t look back. I mean, you just have to go next into that next mode and it, as I say, it just changes things the way you do… you cannot do some things. But um, I don’t look on the negative side on it because that’s not going to help. You know.

Ex. 2  All my uh, reflexes are certainly a lot slower. My sight is not as good. I can’t think of any other reasons. It was coming. And uh, you know, I did get my license again, but I haven’t been using it. I used it for a bit.

Ex. 3  No we made up our mind when the time came. I have no problem with it. I don’t feel bereft or anything. No problem.

Well I know a lot of our friends feel badly about it. But no, I don’t. We were just going to come somewhere. The fact that I haven’t driven for the last twenty years is amazing because I’ve
had MS for twenty years. So we knew it was coming down the pipe sometime. So it finally arrived. No problem.

We haven’t had any serious reaction to it at all. We knew it was going to come down the pipe sometime and when it did, we live with it.

No, it hasn’t. No radical change as far as we’re concerned. As I say, I’ve accepted it. I enjoy driving but we knew it was coming down the pipe sometime. I’m surprised I was able to drive as long as I did. So every year was a blessing, so no problem.

**No thoughts about stopping**

**Ex. 1** Yes. We were, we found it necessary to sell our car. We wanted to raise some money quickly. And we thought, “Wait a minute. Could it be done that way?” And that was the first thing that came to mind – ready cash, ready cash. So we drove it over to the dealership and said, “We don’t want it any more, thank you.” And we dropped it off. And we had not thought about it before that necessity came up. We hadn’t thought about stopping, because I was driving perfectly within the law and within the realms of safety the day before I sold it.
It wasn’t something you talked about for months or...

No. We decided to do it and try it without a car. I mean it was as easy as that and the money was good. I think our property tax was due or something like that at the time.

Ex. 2 Because when I was 80 I went to get to the doctor to get my medical, it didn’t occur to me that I would not be driving.

It’s difficult to say because I know that when I got that letter from the police, that really shook me. Now if I’d had two months to think about it, instead of making a sudden decision, that’s it. I mean I phoned my son, I said, “Well that’s it. Finished.” I should perhaps have waited and calmed down and thought, “Well now is this really sensible?”

Ex. 3 Were you thinking about stopping driving before?

No.

Well yeah, but then again, other members of my family could drive but they weren’t here. And the wife was here and it took me a long time before I found out that she was illed with, it's that Alzheimer’s. Oh, that’s deadly and it cuts things off like that. So I was prepared for that. But I still was, I didn’t have any thoughts
about not driving. I would have continued to drive around; if you were to go, I’d offer to take you to the ferry, but I didn’t say how I’d get you there. I wouldn’t go out the highway; I’d go down on the back road. And everything I used, just me, I would use different routes and I’d use them because I think it’s either to your advantage. Even now when I walk, I figure out which road to take.

When I stopped, I stopped.

**Preparations for stopping**

Ex. 1 Well the cost came into that. The cost didn’t warrant having it. It didn’t make sense. And it meant that I sold my house there and moved downtown where I don’t need it.

Yeah, I mean that’s why I moved.

And I only kept, I moved in two years ago last October into where I am now and I just kept the car over that next three or four months to do things that I need to do, stuff yeah, there were things to do, and then the insurance was going to become due on the 4th of February and I thought, “I’m not paying the next lot of insurance.” Well I didn’t see, because I knew I was going to sell
it. So I advertised and I got rid of it.

Not until I said, “Well I’m putting my car up for sale.” Well I had mentioned that’s why I’m moving downtown. Because I’m going to get rid of my car. But I don’t think they really believed me at that point, until I said, “Yeah, I’ve got it for sale.” And then you know a couple of weeks later, I’ve sold it. It’s gone. “Oh, you’re going to get another one?” “No, the next one will be a scooter.

When I need the next four wheels it’ll be a scooter.”

Ex. 2 No we were quite prepared for it; have been for many years. In fact, we just thank our lucky stars that it lasted as long as it did. No everyday was a blessing.

No the only plans that we had made actually as far as being without the car was that we would have to arrange our shopping, grocery shopping. Our visits to doctors, we’d have to change our system of getting out in these various ways.

No, as I say, seriously, we both saw it coming down the pipe and were quite prepared for it and we don’t feel bereft at all. We’ve changed our lifestyle a little bit but nothing seriously.

Wife: We see our friends having to do it too. You know we
realize that at a certain stage of life this is what happens. I think possibly if he hadn’t stopped driving much earlier on as some people do with heart conditions or something, they aren’t safe driving, that I think that I can understand them finding it inconvenient. But no I think we actually had discussed it and were prepared for it.
<table>
<thead>
<tr>
<th>Type of Thoughts</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No thoughts about stopping</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ex.1</strong></td>
<td>I never…think of that. But I don’t go far out anyway, just go shopping, people in hospital and this and that. I miss all that there. That’s right. It seems to me to be very unfair. If they’re going to put a limitation on your driving, fine. Well make the limitation to things that you have to do, not that you must do or anything. But that you have, you go to your doctor, you go to the blood bank, you go to the hospital. I mean I’m finding out now just how damn difficult it is, or not difficult, but, well yeah, it’s difficult to get. You got to, well get the Handy Dart, get this, get that, get the 50 percent off on the streetcar. I don’t want 50 percent off on the streetcar. I want to drive my car to the hospital, you know? It’s, It's dumb. Real dumb.</td>
</tr>
<tr>
<td><strong>Ex. 2</strong></td>
<td>I have no reason to give up my, stop my driving at all.</td>
</tr>
<tr>
<td><strong>Ex. 3</strong></td>
<td>Okay. Might you stop driving again? Are you considering stopping?</td>
</tr>
</tbody>
</table>
No, I’m not.

But for the past two times when you stopped driving for those two periods, were you considering or thinking about stopping driving before you did?

No I wasn’t. I was putting all my effort to keeping my license.

---

1 This statement is from a former driver who started driving again between time of recruitment and time of interview
<table>
<thead>
<tr>
<th>External Factors</th>
<th>Internal Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoiding Bad Weather</strong></td>
<td></td>
</tr>
<tr>
<td>(e.g., Snow and icy conditions, Heavy rain)</td>
<td></td>
</tr>
<tr>
<td><strong>Current Driver</strong></td>
<td><strong>Lifestyle Factors</strong></td>
</tr>
<tr>
<td>e.g., If it’s not an important matter. If we decided we want to go and see a movie early in the day and then by the time it comes to see the movie it’s chucking it down with rain and it’s dark, we’ll say, “Oh to hell with it.” And we’ll go tomorrow … We don’t need to go so let’s not drive (Not Necessary). I mean,</td>
<td></td>
</tr>
<tr>
<td>e.g., It is with me, I think my responses if I skidded wouldn’t be as quick (Response Time)</td>
<td></td>
</tr>
<tr>
<td><strong>Psychological Factors</strong></td>
<td></td>
</tr>
<tr>
<td>e.g., And also I think it’s perhaps a matter of pride. I think I could probably drive on ice as well or better than a lot of Victoria drivers that haven’t driven anywhere else, but if by any chance, I had an accident they would immediately report it as an 81-year old driver. I mean,</td>
<td></td>
</tr>
</tbody>
</table>

**Table I - 16: Reasons Given by Current and Former Drivers for Driving**

Restrictions included in the Avoidance of Difficult Driving Situations Category
Drivers  e.g., Then I do stay home. I do make a conscious effort not to go out when it’s snowy or icy because of other drivers, not because I have trouble maintaining control…(Poor Driving of Others)  e.g., Um....Well, I think I’d want to know of the conditions the roads are. I don’t think I would be as confident now or let’s not say confident.... I think it would be probably be unwise at my age now to drive on icy days (Common sense).

they never say 25-year old or 30- year old (Pride/Concerns about Ageism).

Physical Factors  E.g., Well, sometimes it is icy. And one of the reasons is that it is difficult for me to

e.g., Well it’s less pleasurable (Lack of enjoyment).
even get to the car. But if there’s any chance of ice on the road or something…

(Mobility)

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>Unsafe Driving</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident</td>
<td>e.g., Oh, the rain. It gets in the … I just, whenever, whenever it rained, when I was still driving I just didn’t, I didn’t drive, honestly. It’s, I lost uh I lost two tires on … rain. Way before I quit driving, I just couldn’t see close by then. You know and I run into a curb… Place that happened to me that was almost the same place, too (Chuckle) (Accident).</td>
<td>e.g., I was just aware of those bad feelings and tried to avoid any situation where I was made to drive or tempted to drive (Discomfort). e.g., Well there’s going to be times when the roads are slippery and I’m not going to be as good – I’m not near as good a driver as I used to be. I’ll admit that right off the bat. So if the roads are icy, I’m going to have to take the bus (Awareness of Declining Driving Abilities).</td>
</tr>
</tbody>
</table>
Influence of other drivers

… because everybody has a little, mini nervous breakdown

(Poor driving of others)

**Avoiding Distractions**

(e.g., driving with others, playing the radio)

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>None</th>
</tr>
</thead>
</table>

**Cognitive Factors**

e.g., I drive alone most of the time, although I do have a lady that loves to talk. I take her out shopping occasionally and I just tune her out. Because I can’t stand – I don’t have the radio on – I can’t stand interference when I’m driving. **Need to Focus/Pay Attention to the Road**
### Psychological Factors

- **Former Drivers**
  - None

- **Avoiding Driving With Others**

- **Current Drivers**
  - None

### e.g. …it’s not safe

**(Concerns about Safety).**

- E.g., If I go anywhere in my car with somebody I ask for them to do the driving because I know if I had somebody in the driver, as you’ve said, grey hair and wrinkles, they would be a little more critical. So I avoid any driving that causes me to be the least bit apprehensive *(Discomfort/Apprehension)*

- E.g., I find it will be very difficult; however, responsibility comes into this
and one would not want to endanger first of all, my wife, friends (Sense of Responsibility).

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None</th>
<th>None</th>
</tr>
</thead>
</table>

### Avoiding Rush Hour and Heavy Traffic

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Lifestyle</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>e.g., Because I’m independent</strong> I try to drive at off hours. If I have to make a medical appointment, I take an early morning one, after the business traffic and before the people who have been doing there chores get out on the road. And I find that very helpful (Not Necessary).</td>
<td><strong>E.g., Well I think it’s the same sort of thing as not feeling like going driving down in heavy traffic. I have probably stopped driving in downtown Vancouver now, or rather all over the island, in Victoria anywhere I like apart from the ferries really. But I think I could do it. I could do it if I had to do it, but I wouldn’t enjoy doing it (Not Necessary).</strong></td>
</tr>
</tbody>
</table>

**Influence of other**

E.g., I mean, but I’m not, I
drivers  
don’t feel that I can’t do it if  
I have to, but I think it’s less  
stressful if you don’t have to  
(Discomfort/Stress)

And I don’t leave until  
I know the traffic is not  
the commuter traffic  
because that’s  
horrendous (Traffic).

Cognitive Abilities & 
Awareness:

E.g., I think we have to know  
our limitations is basically  
the whole thing, and don’t  
do, you know, like I learned  
to drive in Vancouver but I  
would never drive in  
Vancouver. I never take the  
car over there. Because I  
couldn’t possibly keep up  
with, I mean they seem to go  
so much quicker. They  
probably don’t but it’s just  
too confusing so I mean I  
would just not do that …and  
as I say, I wouldn’t drive in  
Vancouver (Recognizing
<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>Influence of Other Drivers</th>
<th>Psychological Factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e.g., “I wouldn’t drive down into Victoria”. They wouldn’t drive downtown.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Well I drive downtown. And I wonder why. I feel that they’ve got this vision stuck in their mind that they’re going somewhere and they don’t know what it’s going to be like, so they worry about it.</td>
<td>(Discomfort/Apprehension)</td>
</tr>
<tr>
<td></td>
<td>e.g., …not until my eyes went</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Vision).</td>
<td></td>
</tr>
</tbody>
</table>

**Avoiding Highway Driving**

<table>
<thead>
<tr>
<th>Current Driver</th>
<th>Influence of other drivers</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e.g., It makes it a lot less stressful</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e.g., Because I don’t wish to go hailing</td>
<td>(Discomfort/Stress).</td>
</tr>
</tbody>
</table>
along at 100 like everybody else seems to be doing (Speed of other drivers).

e.g., I have not driven on the highway for about three years because my husband was sick, and also, when I have been on the highway with other people, I am appalled at the driving habits that I see (Poor driving of others).

e.g., We live there, and so we wait until the ferry times are over before us... Any guest, we say please come at a safe time (Concerns about Safety).

e.g., And also they insist on you filtering in on the highway. I mean, I know how to filter into the highway, but I wouldn’t wish to (No desire to).

e.g., Well no because you rely on your mate, your husband. I mean that’s how it was for my generation… But you know when you go...
together to make long
pleasure trips, you’re
two if you go together,
and the husband, it’s
just the way it is. The
way it was (Reliance
on significant other).

“Little old lady behind the
steering wheel”. So I try to
stay out of there way… and
that works for me (Concerns
about Ageism)

Health Factors
e.g., The only time I go
anywhere near the highway
is if I go out to Le Coteau
farms. Quite frankly I’m
beginning to find that too far.

I get tired so I putter around,
and I’m perfectly happy
driving around (Fatigue).

Sensory Factors
… There’s no way I’m going
out on the highway at night
because your eyes, it’s just a
physical thing. Your eyes
don’t retract fast enough
(Vision).
<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>Influence of other drivers</th>
<th>Cognitive Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g., Well my idea there is I wouldn’t trust the people unbeknown just by a license number or vehicle colour and they got some fools on the road, and I don’t want to be subject to that (Poor driving of others)</td>
<td>E.g., You know, again, you just, you fit your situation according to what you can manage (Recognizing limitations).</td>
<td></td>
</tr>
</tbody>
</table>

**Avoid Night Driving &**

**Avoiding Night Driving when Wet**

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Lifestyle Factors</th>
<th>Sensory Abilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>But I don’t think that I do have to do it, I’d rather be at home, have my dinner and read a book. I’ve no social worries or anything like that. All my social life e.g., I think they’re health related. Eyesight. … Hearing….As they get worse, driving is more trouble, become more trouble. So you have to avoid situations. Not drive at night,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
revolves around luncheons and things mostly. We make it that way if we can (Not necessary). if you can (Vision & Hearing).

Psychological Factors e.g., Well it’s less pleasurable (Lack of enjoyment).

e.g., I think you’re exposing yourself to potentially more hazardous situations (Concerns about safety)

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None</th>
</tr>
</thead>
</table>

Combination of Sensory & Psychological Factors

e.g., It just scared the hell out of me – driving nights, especially when I get those lights shining in my eyes, you know (Fear/Vision).

e.g., Yeah, the first thing that really had to register with me was night driving was
annoying. Headlights began to bother me from a long way back. A long way back. They just glare at you and I could do well without them. I wished I could block them completely out of sight so I could see where I’m going. That one just because of the spectacles, maybe [Annoyance/Vision].

e.g., I never drove at night. Didn’t like that… Since I had um, I got um, I had glaucoma and uh, then I had cataracts in both my eyes. And I got an operation on both my eyes. I got crystal lenses in my eyes now. There not the ordinary plastic lenses. I got crystal lenses and um, when the light
(Lack of enjoyment/ Vision)

Sensory Factors

e.g., Well, I certainly stopped night driving and I have a lot of friends, who over the years, maybe one by one, said well, I don’t care to drive at night. So, I think this is a fact because you find it much more difficult to see at night or the glare, and the rain in particular, makes it very difficult (Vision).

Psychological Factors

e.g., I became concerned about driving at night. …I was just aware of those bad feelings and tried to avoid any situation where I was made to drive or tempted to
drive. *(Discomfort)*

### Avoiding Unfamiliar Routes

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>None</th>
</tr>
</thead>
</table>

**Sensory Factors**

e.g., Oh probably maybe about three or four years ago when I realized that my eyes were not contracting to keep the light out. And I always, nowadays, I like to know where I’m going *(Vision)*.

**Psychological Factors**

e.g., You gradually evolve into this where you like to know where you’re going and where you can avoid the left turns into traffic. I mean this happens *(Preference)*.

e.g., Well, I don’t seem, I think I’m capable but, you know to cope with what I do.
And I’m careful not to do, not to go any further than I’m quite happy, comfortable with (Discomfort).

Cognitive Factors

I intend to stay and keep my driving in the, in the North Saanich/Sidney area. I get very confused uh, in, in Victoria. I don’t know Victoria, although we’ve been here for twenty years. I still find Victoria um, too complicated. I just keep my driving to certain um, uh, situations and conditions (Confusion)

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>e.g. …one of the frustrations with driving um, particularly in Victoria, was getting lost. Uh, unless you know a city</td>
</tr>
</tbody>
</table>
extremely well … You make a wrong turn and you’re way out in the country. You have no idea which way to get home. Uh, now, if you know the route, fine. But uh, so often you don’t

(Frustration/Concerns about Getting Lost)

Cognitive Factors

e.g., I’m much slower than I was. I can’t see the road signs as they flash by. I’ve got to go slow on a new road. A road that I know, I know where the stop signs are and everything is. I can remember that fairly well. But I know where everything is and I can drive much easier on a road that I know. I adjusted to that (Response
Avoiding Left Turns/Intersections without Lights

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>Influence of Other Drivers</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e.g., Maybe you’re probably fearful of the other traffic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>probably fearful of the other traffic (Poor driving of others).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e.g., Well, you’re safer if you avoid left turns. I mean if there’s an arrow or a traffic light it’s different, but you know when there’s no arrow or no traffic light, you have to be careful (Caution/Concern About Safety).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None.</th>
<th>Psychological Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e.g., So you’ve got the time, you don’t have to worry about. And then, even if you have to go around a couple</td>
<td></td>
</tr>
</tbody>
</table>

Time/Memory).
blocks, it’s worth it. It leaves a little… (Caution/Concern about safety)

<table>
<thead>
<tr>
<th>Other Avoidance Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Drivers</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
You can drive straight out

(Ease).

| Former Drivers | None | None |
Table I - 17: Reasons Given by Current and Former Drivers for Driving Restrictions in the Other Self-Imposed Restrictions Category

<table>
<thead>
<tr>
<th>Driving restricted to necessary activities</th>
<th>External Factors</th>
<th>Internal Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Drivers</td>
<td>Environmental Factors</td>
<td>Cognitive Factors/Awareness</td>
</tr>
<tr>
<td>e.g., If gas prices went up much more than they do, but that’s why I bought this car. I’m doing 37 miles to the gallon in town, you see.</td>
<td>e.g., Environmental Factors</td>
<td>e.g., As much as I enjoy driving, I don’t want to be another car on the road, perhaps causing trouble</td>
</tr>
<tr>
<td>So I feel I’m contributing to all this talk about Kyoto and all that stuff. I’m doing my little bit</td>
<td>Psychological Factors</td>
<td>e.g., Psychological Factors</td>
</tr>
<tr>
<td>e.g., Well it’s less pleasurable. That’s the best way I can sum it up. We say to ourselves, “Why should we inflict this on ourselves when we have alternatives?” The alternative is not to drive.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.g., … Because it’s We don’t need to go so</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
fairly obviously more hazardous driving at night with wet roads and so on and if you don’t need to do it, stay home (Less necessity). e.g., One of the reasons for that is from a very early age, my parents mainly trained me to walk everywhere and that over the years I’ve been really amazed by the number of people who’ll take their car to drive three blocks to the store. I wouldn’t dream of it. If it’s a store within a mile, I walk. And I always will (Other Alternatives to Driving)

let’s not drive (Lack of enjoyment). e.g. … if I’m feeling tired or I’m not feeling well, and there’s absolutely no reason for me to drive and then I won’t (Fatigue/Not Well).
Former Drivers  **Lifestyle Factors**  None.

e.g. …I was, as I say in my seventies, and naturally everything slows down. No real order. It’s just that I perhaps wouldn’t be as venturesome and wouldn’t go out at the spur of the moment like I used to… I mean I didn’t drive just for the sake of driving; I didn’t drive unnecessarily (Less need).

<table>
<thead>
<tr>
<th>Reduced distance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Drivers</strong></td>
</tr>
<tr>
<td>Drivers</td>
</tr>
</tbody>
</table>
the theatre up there, but I haven’t done that for a number of years. And then when we’d go on any long drives, my husband would drive (Reliance on Significant Other).

She has minor problems with her back. I won’t call them major problems, but some minor problems with her back and she finds that she can’t go more than two hours at a time driving without getting out and stretching and sort of quitting driving, getting out of the car and stopping driving and stopping for ten or fifteen minutes and getting coffee or something… it’s just not pleasurable for us, the actual driving… We don’t want to have to drive for so long so we fly (Back problems/Lack of pleasure/No desire to).
**Health Factors**
e.g., But I find as I get older, my legs do tire very quickly, so driving is better for me. I mean, there’s nothing wrong with my legs, you know. I can exercise and I’m alright, but I do get tired. So I drive only short distances.

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>Influence of others</th>
<th>Psychological Factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well, if you go and do that course that the AMA, or AAA have for seniors, I believe, 55 Plus or something, they will tell you there that an hour is all that a senior should be driving. I think that’s practically right on the money (Driving</td>
<td>I think if we could use common sense instead of our usual approaches for a person in the position that V. is. He’s been quietly driving short distances and doing it time and time again and hasn’t had any problem (Common Sense).</td>
</tr>
</tbody>
</table>
Cognitive Factors/Awareness

e.g., I think as I was getting older, I was driving more cautiously and not going on longer trips, not taking on more responsibilities of driving (Recognizing Limitations/Decreasing risk).

Health Factors

Well I tire much easier than I used to so I try not to drive too long. I was driving that West Coast Road and that’s a terror. I mean it’s got so many curves and uphill and downhill and everything. It really plays you out (Fatigue).
Less Speeding

<table>
<thead>
<tr>
<th>Current Driver</th>
<th>Influence of Others</th>
<th>Combination of Cognitive and Physical Factors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>And I’m very careful to watch my speed. I do check my speed limit much more than I used. And I think that’s since I did the 55 Alive course. Because it really is an excellent course, and it does make you think of all the things that you should be doing and checking. I look at my mirrors much more frequent than I used because I know that’s something that they are going to be looking for in any test (Driving Courses/Instruction)</td>
<td>E.g., I slow down more at the intersections because I sense that my reaction timing isn’t as good as it could be. I probably don’t compute what I see with my eyes as quickly. That’s a cognitive aspect. And I do find that when I’m making change sometimes I get a bit confused, so I know I’m slowly down my way… But generally I consider that I’m still a good driver and I enjoy driving and it’s not really a problem but I compensate for the stiffness in my body</td>
<td></td>
</tr>
</tbody>
</table>
Other forms of Transportation

E.g., I took flying lessons late in life.

Bought an airplane, and from that time on my driving habits changed dramatically... So you learn to follow the rules. ... So, you learned patience is what it’s all about and so, your turn came you jockeyed into position and away you went. You weren’t uh...or in control even then or ... 

<table>
<thead>
<tr>
<th>Time/Processing</th>
<th>Speed/Confusion/ Stiffness in body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Factors</td>
<td></td>
</tr>
<tr>
<td>Cognitive Factors/Awareness</td>
<td></td>
</tr>
</tbody>
</table>

... e.g., I’m just more cautious that’s all (Caution). e.g., I’ve heard people say so many times when they’ve had an accident that it happened so quickly and I know it can and I’ve always been very aware of that. So I’ve found it to be very appropriate to be careful in the car now (Awareness of risk). whatever and you had to stay .... If they told you to get in behind
another aircraft landing, you got in behind that one or else you ran the risk of losing your license (Flying promoted increased patience).

Rules and Regulations of Driving e.g., I don’t exceed the speed limit any more…. I drive to the limit. In fact, where there’s a 90 sign, I will do 100. If it says 80, I will do 90 … Because they will give you 10 km… They will give you a 10-km leeway and I go for the limit (Speed limits).

Combination of Psychological and Cognitive Factors …I guess one does slow down. My mind certainly slows down. I’m aware of, not deterioration, but…I’m sure I’m slower. I don’t want to get, to rush. I want to do it in my time (Slower Processing/ No desire).
Former Drivers  | **Rules and Regulations of Driving**  | **Psychological Factors**  
--- | --- | ---  
Speed. We people here, we didn’t go fast. We obeyed the law. It’s them punks that pass you going at 90 (Speed limits).  
e.g. ... My desire to speed has tapered off a hell of a lot with age. Naturally I don’t want to do what I used to do with the automatic thing on (No desire).  

**Cognitive Factors/Awareness**  
When I got a car with the cruise control I started setting it at the speed limit and leaving it and I probably got there just as fast.  
… And the point was I got there. I didn’t, wasn’t in the ditch somewhere (Awareness of the risk)
**Sensory Factors**

E.g., Well if you drive down the road and you can’t see, I have to go slower. You change your driving habit to, you have to adjust somehow so you can find the road. And you know that you’re going to do that, so adjustment is in order (Vision).

<table>
<thead>
<tr>
<th>Less Lane</th>
<th>Changing/Driving in Slow Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Drivers</td>
<td><strong>Influence of Other Drivers</strong></td>
</tr>
<tr>
<td>Educated by driving down the Pat Bay so many times. You just have to be very careful at what you’re doing. And I stay in the right</td>
<td>… I realize that in general I’m not as sharp as I was.</td>
</tr>
</tbody>
</table>
hand lane and let people pass me. I don’t get competitive. That’s a big factor (Speed of other drivers). E.g., This comes from my original instructor. If you know where you’re going, drive in that lane. And I mean, if I know I’m going to turn left I make sure I’m driving in the centre lane because I’m going to make a left turn. I mean, it’s a matter of convenience or laziness. I don’t know (Driving courses/ Instruction)

| Former Drivers | None | None |
### Reliance on Significant Other to do the Driving

<table>
<thead>
<tr>
<th>Current Drivers</th>
<th>None.</th>
</tr>
</thead>
</table>

#### Cognitive Factors

e.g., I get very confused

uh, in, in Victoria. I don’t know Victoria, although we’ve been here for twenty years. I still find Victoria um, too complicated (Confusion).

#### Health Factors

Having two drivers in the family, there’s a lot of times when we might not want to drive, for example, if one of us has had a bad night, a bad night’s sleep and it comes to some evening event, and my wife will say, “I’m too tired to drive. You drive.” And vice versa (Fatigue).
Psychological Factors

e.g., Actually, I uh, I uh, I was turning; I was getting nervous about driving - a little nervous. D was, I think her eyes were worse than mine …, but she was doing the driving (Apprehension).

<table>
<thead>
<tr>
<th>Former Drivers</th>
<th>None.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Planning</th>
</tr>
</thead>
</table>
| Current Drivers | Environmental Factors | Psychological Factors:
| e.g., I plan in order to save distance. For instance, this morning I had five places I had to be, and I timed it so that I could be at the one that was going to take quite a bit longer, but so that I wouldn’t have to retrace my steps. And I do that |
| e.g., Not having to, you know, this turn, that turn. You already know when you get in the car the route that you’re going to take. …with what you feel comfortable with (Discomfort) |
| Physical factors | And now I’m getting older and arthritis is in my |

probably more than I used to because I was not as aware of the impact on the environment when driving.

**Lifestyle**

And if I'm going to an address visiting somebody, even during the day at say, Nanaimo, that I’ve never been to before, I’ll get the map out. This comes from convoy work in the Army and bus driving (Job experience).

**Cognitive Factors**

Well, it just does a little more, yes. I have to think to myself, “Now which doctor is this? Where is his office, which one is it?” Relying on memory. I guess my memory, well I suppose fairly good.

e.g., I think maybe because I have the time fingers and creeping into my neck. … I have to plan it out, the trip more. We went up to Parksville. At one time, I’d just drive straight to Parksville. And that’s not too long ago I’d do that. But now I know that if I do, and if I did that, and I got to Parksville, by God I’d be so stiff, I’d hardly be able to get out of the vehicle (Arthritis).
to now, where Everybody tells me it is.
previously to moving to But I just have these little
Victoria, it was often a things coming up
case of rushing in from sometimes remembering
work, having a quick somebody’s name or
shower, change and things. I think that’s an
now where are we age-related thing more than
going? (More Time) a problem thing
(Memory).
e.g., Don’t want
wander around looking Other Factors
for the thing, when e.g., I make it a habit more
they’re expecting you now than I did before, if
(Saves time/not I’m going to an unfamiliar
wasting time).
part of the Island or an
unfamiliar part of Victoria,
I will get out the maps
before and I’ll check it out,
even to the extent of
writing it down. Because I
don’t want to have to try
and find a certain street or
a certain turn off the
highway or something like that and find myself having to stop and dig out the map (Ease)

<table>
<thead>
<tr>
<th>Former Drivers Lifestyle</th>
<th>Other Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think you can plan more how you’re going to get to your destination. And think I’ll avoid that corner, but I can get there. And as long as time, and usually time, at least for me, was not of an essence, really (More time).</td>
<td>E.g., I would only go to certain places and certain areas and if I didn’t know where I was going I’d do a trial run (Ease).</td>
</tr>
</tbody>
</table>

**Reduced Driving**

<table>
<thead>
<tr>
<th>Current Driver</th>
<th>Lifestyle:</th>
<th>Health Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>In fact, the presence of paid work used to take me away from Victoria a lot. So the times that I was here was the time</td>
<td>e.g., Basically, unless I have a day when I’m really fatigued and I wouldn’t drive, I’m fairly competent to drive, I think (Fatigue).</td>
<td></td>
</tr>
</tbody>
</table>
to catch up with our friends, to visit and so on and so forth. Now, because that no longer is impacting on the things that we can do, it’s no longer central to our lives or to my life anyhow. It’s not longer central to it and I can take more time to visit, to go see things, to go to theatre, symphony concerts and that sort of thing than I was able to before. So to that extent, I’m less constrained in the amount of driving I do. (Less need). e.g., I think it’s foolish to drive if you’ve not feeling good (Not well).
Environmental Factors

Because it leaves less of a footprint on the earth and we believe in that.

| Former Drivers | None | None |
Table I - 18: Reasons Reported by Former Drivers for Stopping Driving Altogether

<table>
<thead>
<tr>
<th>Main Factors/Events¹</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Internal Factors</td>
<td></td>
</tr>
<tr>
<td><strong>Visual Factors</strong></td>
<td>e.g., Yes, it was. I was driving, I went into the shopping centre and it was kind of dull. I came out in bright sunlight like this and I couldn’t see properly, the lines on the road. So I thought, “This is it.” I phoned my daughter and said, “Come on, you can have the car.” … just over a year. A year spring … when I realized that um, my vision is deteriorating and I was not comfortable (Vision &amp; Discomfort).</td>
</tr>
<tr>
<td></td>
<td>e.g., Well, I knew after I had the implant that I really couldn't see well enough and that … It just almost took my confidence away. I just didn't want to be behind … I wouldn't be behind the wheel because I couldn't see well enough to drive. I didn't try it. I just … cold turkey, I guess you call it. I didn't feel right within myself and I mean if I had had an accident it would have destroyed me, I think. So that was quite emphatic. I didn’t, I didn’t realize it was going to be that way. I knew I was on a slow decline, but that really was quite definite</td>
</tr>
</tbody>
</table>
E.g., Well, mine, really, is medically, um, in that I knew I had macular degeneration amongst other things and I knew it was coming. And then I did have one cataract done, which in itself was alright, the implant, but um, um, as I said to my doctor I don’t think my eyes like being interfered with (chuckle). And um, so that really finished me for driving. Um, I knew it was coming, but um, when you really can’t it does make a big difference. There is no doubt about it. And I also have an older car. It’s uh, it’s a Volvo. It’s a very good car, but it’s 30 years old and it’s getting old the way I am. And at the moment my daughter has it. I haven’t formally signed it over, but she has it and uses it um, not for work, but just on occasion and takes me to do my food shopping once in awhile. So, we’re still sort of working all of this out. I did it myself. I knew that I shouldn’t be on the road (Eye Conditions/Could Give Car to Daughter).

<table>
<thead>
<tr>
<th>Medical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g., As soon as I had my second stroke (Stroke).</td>
</tr>
</tbody>
</table>

E.g., I think she gave up her car voluntarily but she has lots of arthritis in her feet and I think she gave it up for health reasons (Arthritis/Health).
E.g., Now to this day I don’t know whether I had a stroke or whether I fell asleep, but I had just been there and I couldn’t think of a logical reason. However, I didn’t hurt anybody; I sat, and the lady whose car I had ran into, I didn’t hurt it at all and she was concerned. So what I did was I pulled over out of the line of traffic and just sort of gathered my senses at that point because I was quite shocked that I couldn’t remember almost two blocks of driving. And then I made up my mind, I just said to myself, “Okay, you go to J’s office, give him the keys, get him to drive you home, and you’re not going to drive any more. You can’t risk killing someone.” And that was why I had quit driving (Sleep Episode or Stroke, Accident, Sense of responsibility/Awareness of Risk).

Physical Factors  E.g. … my driving skill hadn’t been challenged. And when I went into the hospital, when I experienced the effects of going into the hospital, and I felt that it had kind of an effect on me because like I said what, it was such that my age was, I had no problems prior to going into the hospital. But by the time I came out, I was, you know, sort of going with the physical signals and signs you get. So I became more cautious there. So I decided there was no need for me to come out of the hospital and take this automobile license which was almost expired. It was, I knew that I could try to get my doctor to say I could see
down the street and all that stuff, but I didn’t push it. And then in the end I let it go. I’m still of that opinion (Poor Physical Reaction to Surgery/Time for re-licensing with Age).

E.g. … They’ve given up driving for a variety of reasons; finances may be one, physical ability may be another (Physical Ability).

E.g., Um, I think eventually with the car I would never have. I could, I can’t not buy another car financially, so uh the, the physical disability came first, but um, if the car was not fit to be on the road that would have finished me secondly. But I didn’t really get to that stage (Physical Disability, Finance).

<table>
<thead>
<tr>
<th>Cognitive Factors</th>
<th>E.g., She wasn’t liking this judgement she would have, you know? There was a car parked there and she’d pull out to go around it, wouldn’t fit. I guess she didn’t like the idea that she had to come home and tell the family, “I just banged a car.” (Depth/Distance Perception).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E.g., And we were taking this thing and she was brushing up on all this. And she suffers from a little dementia. Had it been the old car, she remembered where the bells and whistles were. But on this new one, from day to day, it didn’t make sense to</td>
</tr>
</tbody>
</table>
her. “Where’s the lights, where’s this?” And it didn’t make sense. So it came down to eventually she says, “Well if all this is needed to do that, I’m going to give my license up.” ... So there’s a, person who, I think sensibly said that I just don’t want the hassle of this and gave it up because she had somebody still who could do that (Dementia/Memory, hassle with new car).

| Psychological Factors | E.g., Mainly there was no more pleasure in it... Because there’s just too many people on the road who really don’t know the rules of the road, which I find frustrating... Well, taking that into main consideration, the rest was – and I thought about it over about two years – I was basically using my car to go and get groceries and I only lived on the edge of town at that time, maybe three or four kilometres from downtown (Discomfort with other drivers/Lack of enjoyment, Not necessary). E.g., And so that didn’t make sense. Because I wasn’t enjoying driving any more, I found that sometimes I would think about going somewhere and then decide not to go (Discomfort with other drivers/Lack of enjoyment, Not necessary). E.g., But never any fear of doing that. Never any fear of doing... |
that. Never gave it a second thought. We lived ten miles out of
town. We did it, or you didn’t go anywhere. So, no, it’s just, I
just didn’t feel comfortable with some of the drivers around
me (Discomfort with other drivers/Lack of enjoyment, Not
necessary).

### External Factors

<table>
<thead>
<tr>
<th>Influence of others</th>
<th>E.g., Well, it was just uh, I cannot drive. Again, I knew I couldn’t and when my eyes were tested, I, I didn’t make it. But, I had known that before hand, so it was quite, just a statement of fact (Influence of Optometrist/Vision).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E.g., I’ve had MS for about twenty years circa, and it’s just started to, it looks like it might have manifested itself a little bit further another step. So I was advised by my doctor to stop driving. So I was driving up to about a month or so ago (Doctor’s Advice &amp; Multiple Sclerosis).</td>
</tr>
<tr>
<td></td>
<td>E.g., I didn’t know why, but I had an appointment November, over a year ago with my doctor. While he was checking me out, he said, “You should…” … did he say take my car home and get somebody to take me to the hospital. I guess he must have felt that I had a stroke coming up (Doctor’s Advice, Stroke).</td>
</tr>
</tbody>
</table>
Unsafe Driving Incidents (e.g., Accidents or Near Misses)

E.g., I had the one and only accident in my life driving in Victoria and at that time it was like eight years ago, I was in my seventies, and after that accident, I felt that my physical condition, my eyesight, possibly my reactions were such that probably I shouldn’t be driving any longer. And as it was not a matter of necessity that I drove, then I could easily give it up (Accident/Physical Condition/Vision/Not Necessary).

E.g., … it was this accident that I had that motivated my thinking (Accident/Physical Condition/Vision/Not Necessary).

E.g., I had an accident. Actually I wasn’t driving, but I crossed the street. My husband and I were walking and the dog, and we had to cross the street. There was no crosswalk but I started across because I saw a couple of cars coming, but one stopped. So I went, I walked across, and the car behind came around and hit me… And I was knocked out and spent the night in the hospital, but I was okay. But my husband thought I was too nervous to drive after that …He thought it did. I think he didn’t want me to drive in the first place. You know how men are. They used to be. I don’t think they’re that way now but… I didn’t want to and I was really upset but I thought well, to keep peace and I didn’t need to drive that much anyhow so I
just quit. Because he could still drive (Incident as a pedestrian/Influence of husband).

| Finance | E.g., We were, we found it necessary to sell our car. We wanted to raise some money quickly. And we thought, “Wait a minute. Could it be done that way?” And that was the first thing that came to mind – ready cash, ready cash. So we drove it over to the dealership and said, “We don’t want it any more, thank you.” And we dropped it off. And we had not thought about it before that necessity came up. We hadn’t thought about stopping, because I was driving perfectly within the law and within the realms of safety the day before I sold it. (Needed money, Re-licensing time, Not necessary).

E.g., Well, well she was a registered nurse and she worked all her life. And she had quite a bit of … pensions coming. And uh, and uh being a first nation’s lady… and I could get uh, hospitalization. … Any uh, prescriptions I had were all taken care of because I was married to a first nation’s lady… No. And then uh, I could get uh, tax free gas (chuckle) and uh, when she passed away, dang … everything I had to pay for. … My finances … was cut almost in half. I couldn’t afford it. I couldn’t afford to drive a car (Financial concerns after wife’s death).
E.g., Well the cost came into that. The cost didn’t warrant having it. It didn’t make sense. And it meant that I sold my house there and moved downtown where I don’t need it (Finance).

**Failed Driver’s Test**

E.g., Well it was about the third or fourth time I’ve had it and what it is, is just a build up of water in your system and then you can’t breathe. And that’s…but now, I know what to do. I don’t need a doctor. I know what to do. But nobody ever told me that all you had to do was get rid of the water in your system, you know. So that I can do by taking a little pill. And so I’ve done that and I don’t know… Oh yes, so then I get another letter from the driving commission or whatever they are and I’ve got to go and have a driver’s test. So okay. So I went and got their book, you know, and read it and that was okay. So then I go for the test. And he asked me, let me see a few questions, a very few. “Have you got any health problems?” I said, “Well, yeah, I guess I have or I guess I’ve had.” I said, “I’ve had conjunctive heart failure.” “Oh yeah,” he said, “we get a lot of that. A lot of people with conjunctive heart failure.” “Oh”, I says, “You mean it doesn’t mean too much to you people?” He says, “No, not really.” He says, “You get over it. You go and see a doctor.” I says, “Yeah, well
you’ve got a point there. It’s true, that’s true.” So I thought, well. And he asked another couple of questions about this and that and you know, just sort of ordinary, end-of-your-cuff sort of questions. So I go out and I take my test and I flunk it. Now why did I flunk that test? I flunked that test because no where in the book, no one ever said anything to me, in all the years I’ve been driving, well I guess somebody did once, about looking over your right shoulder. So if you see a bicycle that’s coming up on the right hand side, you can stop or move. I thought, well, okay I’ve heard about that, but that’s it. So I’m flunked for that again – or not again, but I’m flunked for it by the guy. I thought I was doing great, you know, coming up to the stop sign and all the rest of it. I thought I was doing, hey, hey, we’re going to pass today. That wasn’t the case. I flunked it. So he told me that what I did, once again. Right, turn your head to the right so you can see the bicycle guy coming up on the right hand side. Well my God, if that flunks you, and I’ve been driving, watching bicycles and God knows what else, all my life, you know, what other little trick are they going to have up their sleeve you know? (Failed Driving Test)

E.g., Yeah, they’re the ones that cut us off. We still wanted to drive. So what are you going to do? I’m disgusted with it,
those people (Failed Driving Test).

E.g., There was nothing I could do but sell the house right away. So I sold it. And about a month after I got back, there was a police car waiting for me on the road. And he told me that he had evidence that I had been living in BC for some time and the fact that I had a BC license on my car, told him more and he forced me to get a BC license. And then about a month later they sent me a letter saying come in for a test… So I tried the test, I tried it twice, I flunked both times. So, I got the feeling that there was something on my…you know… My record, that told them that I had someone against me (Failed Driver’s test, complaint).

1 The specific reasons for stopping driving are provided within parentheses beside the supporting quotes. The main factors for stopping driving are highlighted in bold font.