

# When and why older drivers give up driving



**Foundation for Road  
Safety Research**

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**Foundation for Road  
Safety Research**



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# The AA Foundation for Road Safety Research

The AA Foundation for Road Safety Research was formed by the AA in December 1986 as part of its continuing efforts in the road safety field and as a major contribution to European Road Safety Year.

Registered as a charity (number 295573), the objectives of the Foundation are:

to carry out, or procure, research into all factors affecting the safe use of public roads;

to promote and encourage the safe use of public roads by all classes of road users through the circulation of advice, information and knowledge gained from research; and

to conceive, develop and implement programmes and courses of action designed to improve road safety, these to include the carrying out of any projects or programmes intended to educate young children or others in the safe use of public roads.

Control of the Foundation is vested in a Council of Management under the chairmanship of Kenneth Faircloth OBE with day to day activity being the responsibility of the Foundation Management Committee. The Research Advisory Group, members of which include academics, road safety practitioners and health and transport industry professionals, recommends topics worthy of research to the Management Committee.

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AGF, Bishopsgate, Commercial Union, Corinthian Policies, Cornhill, Drake, Eagle Star, Economic, Gan, Guardian, Norman, Orion Personal, UAP Provincial and St Paul International.

# Chapter 1 Introduction

## 1.1 Objectives of the study

As people grow old they become more likely to be involved in road accidents. Incidence of these rises from a minimum of about 0.6 individuals per million kilometres at 50 years to one individual per million kilometres at 70 years, and to almost two per million kilometres thereafter; (Bly, 1993, p 20.) Because older people are also relatively frail, the proportion of these accidents which result in death or injury increases even more sharply. Between 1982 and 1991 33.8% of all road deaths were suffered by people aged over 65 years, in contrast to 16.7% suffered by those aged from 25 to 64 years, 40.3% by those aged from 15 to 24 years and 9.1% by children under 15; (Evans, 1993 p 31). During the same period there has been a steady rise in the proportion of the UK population who are aged over 65 and, between 1975 and 1991 an even sharper increase in the proportion of men and women aged over 60 who continue to hold driving licences; (Bly, 1993). These trends made it timely to carry out a large survey of the demography, health, attitudes and driving habits of older motorists, to discover some of the problems that they face, to consider adaptations that they make to changes in their driving skills and to discover what factors may eventually lead them to give up or to continue driving longer than they might wish.

## 1.2 Method and Aims

The first step was to recruit very large samples of older motorists and ex-drivers. We obtained and compared information about the demographics of these groups, explored the duration and nature of their driving careers and asked current drivers about their plans for eventual retirement from driving and ex-drivers when and why they had given up. This allowed us to explore how demographic and health factors contributed to the timing of the decision to give up, and whether ex-drivers felt that they had, perhaps, gone on driving rather longer than they ought to have done. We asked the views of those still driving on what factors might be most influential in leading them eventually to give up, and what difficulties and advantages they envisaged after the decision to give up car ownership had been implemented. Ex-drivers were able to give us their actual reasons for giving up and to discuss their direct experience of the advantages and disadvantages of this step.

The next aim was to determine the extent to which people, as they become older, become aware of changes in particular aspects of their driving skills; whether they are more likely to notice some kinds of change more than others, and how far they can successfully adapt to such changes as they do notice by altering their patterns of driving to avoid stressful or difficult driving situations. Corollary questions were the extent to which perceptions of declining competence and of increased stress relate to increasing medical problems in old age and how medical problems and perceived changes in competence, jointly and separately, act to influence the time course of withdrawal. This raised the much more general and important question of how accurately drivers can monitor their own behaviour, whether they can recognise some kinds of changes in their competence but not others and whether their ability to monitor their performance and their sensitivity to changes in their own efficiency alters as they age.

A final aim was to explore older drivers' degrees of acceptance and estimates of the likely efficacy of a range of possible measures for the assessment and regulation of driving. We explored the attitudes of older drivers to possible measures to improve their recognition of, and adaptations to, their own behaviour, as well as the extent to which they felt that some responsibility for advice and decisions about continuing driving should rest with health professionals such as general practitioners (GPs) or

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opticians, and the extent to which formal assessment of driving behaviour should be available to older motorists. We finally explored the relative importance that older drivers ascribed to various sources of advice that they might be given on their driving efficiency and the extent to which they felt that such advice might modify their driving behaviour, or their attitudes to continuing to run a car.

## Chapter 2 The data base: description of sample and means of data collection

Respondents were recruited from the University of Manchester's Longitudinal Age Research volunteer panel, and by media appeals to the public for individuals who were currently aged over 50 and were, or had once been, drivers. Appeals were made on national television, on local radio and television programmes and in articles in local newspapers in Manchester and Newcastle-upon-Tyne and in special interest journals such as the magazine of the Caravan Club. Most responses were from individuals who were at that time still driving. This is not surprising because active elderly drivers naturally have a much keener interest than those who no longer drive in the issues raised by this survey. Accordingly we made additional appeals to ex-drivers through the AA index of withdrawn members. A total of 2700 contacts from all these sources were each sent a letter describing the nature and the purposes of the study, a questionnaire on their past experience and future expectations of driving, (see Appendix A) and a questionnaire to elicit details of previous and current health problems, (an abbreviated version of the Cornell Medical Index, (Brodman, Erdmann & Wolff, 1949) see Appendix B). Completed questionnaires were returned by 2134 individuals whose ages ranged from 54.9 to 101 years, (mean 71.5, standard deviation (sd) sd 7.0). Of these 55% were men (mean age 71.4 years, sd 6.5) and 45% were women, (mean age 68.4 years, sd 8.2). Of those returned, not every question was answered by every respondent. As a result the number of respondents involved in different analyses varies.

### 2.1 Sample demographics

#### 2.1.1 Age and gender

In this sample 979 men and 801 women were still driving and 177 men and 162 women had given up. Ages of drivers ranged from 54.9 to 99.9 years (mean 70.5) and of ex-drivers from 58.6 to 101.1 years (mean 76.7). The fact that ex-drivers were, on average, 6.2 years older than drivers does not affect any of the comparisons reported since, where necessary, these were re-checked for robustness after variance associated with age had been statistically removed. Distributions of ages of men and women were not significantly different. In relation to national demographics these figures may be compared with the average of mid-year population estimates from the General Household Surveys (GHS) for 1992, 1993 and 1994. (see p 139 of the Department of Transport statistics report 1992/1994) which found that of the United Kingdom (UK) population aged between 60 and 74 years 46% were men and 54% were women, and of members of the population aged over 75 years 37% were men and 63% were women. In terms of the UK population average our sample appears biased because it included a larger proportion of men. However this does not take into account the disproportionately larger numbers of older men than women drivers in the community. For example, Oxley (1991) estimates from national travel surveys for 1989-91 that about 80% of men as against 30% of women aged between 60 and 69 hold full driving licences, and that beyond 75 years these percentages change to 55% of men as against 20% of women. In the present sample the balance was 55% to 45% so that women were, if anything, somewhat over-represented.

#### 2.1.2 Geographical distribution

Table 2.1 gives a breakdown of the types of environment in which respondents lived. More ex-drivers (17.8%) than drivers (7.8%) live in a city, and slightly more ex-drivers (31.4%) than drivers (26.7%) live in a town, while more drivers than ex-drivers live in



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suburban and rural areas. These differences between drivers and ex-drivers are statistically significant and may reflect two factors: the relatively better socio-economic circumstances of drivers and, possibly, also the greater need to maintain a personal car in suburban and rural areas which are not well served by public transport.

**Table 2.1**  
*Residential environment of respondents*

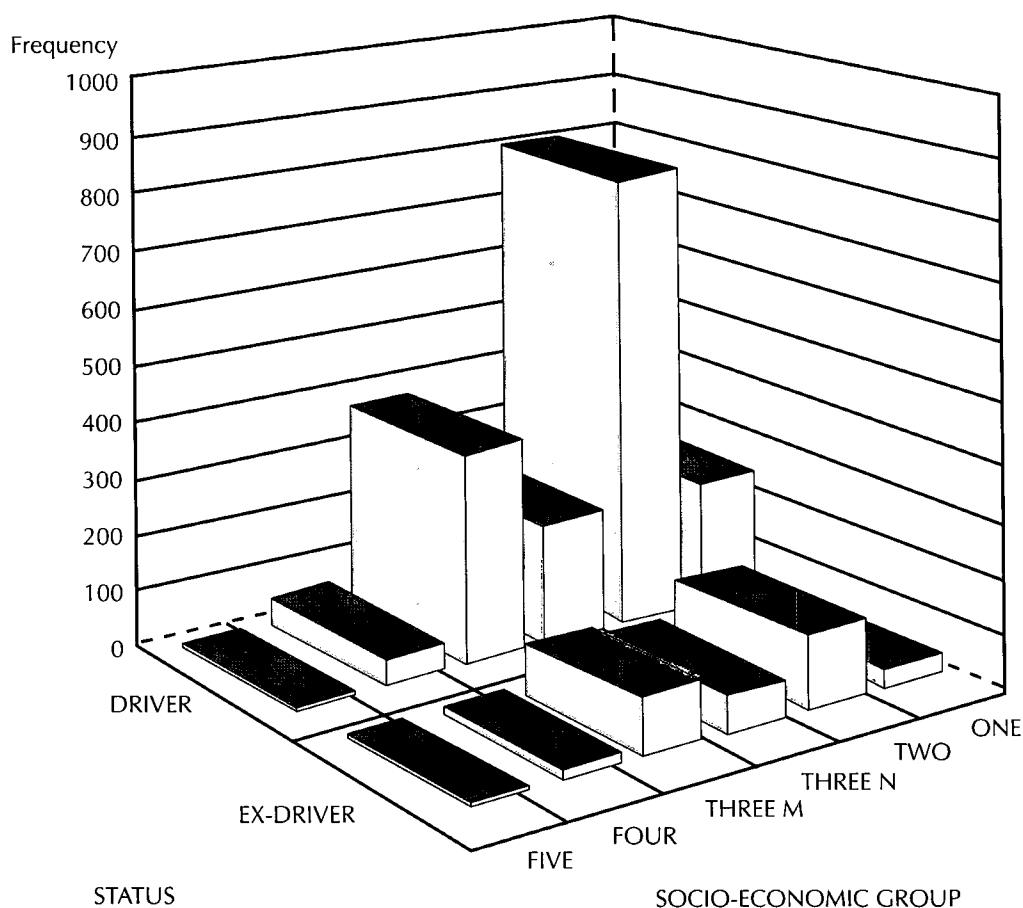
Area of residence	Drivers (%)	Ex-drivers (%)
City	7.8	17.8
Town	26.7	31.4
Suburb	37.0	32.8
Rural area	28.4	17.8
Other	0.04	0.17

The geographical distribution of residence is not dissimilar from that for the 996 drivers investigated for the AA Foundation for Road Safety Research's report "Motoring and the older driver", (1988). Of these 61% lived in urban and 39% in rural areas. (ibid. p 7) On this categorisation 71.4% of our drivers and 82% of our ex-drivers lived in urban areas, and 38.6 % of our drivers and 18% of our ex-drivers lived in rural areas.

#### 2.1.3 Socio-Economic Status of drivers and ex-drivers

Respondents described their current employment or final employment before retirement. Those who had retired and then taken part-time work were classified in terms of the most advantaged position they had attained during their working lives. Married women were classified in terms of current or previous employment or, if they had never been employed, in terms of their husbands' current or past employment. Figure II.1 shows numbers of drivers and ex-drivers by Socio-Economic Group-SEG- (Groups 1 and 2 (professional), Group 3N (skilled non-manual), Group 3M (skilled manual), Group 4 (unskilled non-manual) and Group 5 (non-skilled manual)).

**Figure II.1**  
*Socio-economic group analysis of drivers and ex-drivers*



*The data base: description of sample and means of data collection*

Figure II.I shows that, on average, drivers tend to be from slightly more prosperous socio-economic groups: 61.1% of all drivers as against 49.9% of all ex-drivers were in SEGs 1 and 2, and 48.9% of all drivers and 61.1% of all ex-drivers were in SEGs 3 through 5; (difference statistically reliable by  $\chi^2$  test at  $p < 0.001$ ). **It is likely that differences in levels of income and entailed differences in options of location of residence and lifestyle may affect timing of the decision to give up driving. This has to be taken into consideration in comparisons between current and ex-drivers which are discussed in detail below.**

**Slightly discrepant with differences in socio-economic advantage is the finding that there was no statistically reliable difference between drivers and ex-drivers in terms of years spent in full time education or training, at least on the basis of rough cut-offs by estimated points of school leaving age and entry into higher education for their different generations.** Among drivers, 564 (31.4%) had nine or fewer years of education while 799 (44.5%) had from 10 to 13 years and 432 (24.1%) had more than 13 years of full time education or training. For ex-drivers, equivalent figures were 95 (28%), 149 (44%) and 95, (28%). **However, since all possible types of post-school education were collapsed, and further education reported by ex-drivers more frequently included apprenticeships and technical training, these figures mask the point that more drivers than ex-drivers went to a university before following a SEG 1 or 2 profession.**

**2.1.4 Age of giving up driving**

Ex-drivers were asked to say when they last drove and this date was used to compute the age at which they had given up driving. The average age at which they had given up was 72.1 years. Current drivers were asked how long they expected to keep driving; those that provided a specific estimate (ie those that would agree to set some definite limit to their driving careers other than that imposed by unforeseeable events at an unpredictable time) produced an average intended age of giving up of 79.3 years. **Both in terms of their estimated age of giving up driving and the period of time for which they will then have driven current drivers' expectations exceed the reality experienced by the ex-drivers.** Distributions of ex-drivers' answers to the question "Do you think that you continued driving longer than perhaps you should have done?" are given in Table 2.2, which shows that most ex-drivers strongly disagree that they continued driving too long.

**Table 2.2**  
**Responses of ex-drivers to the question: "Do you think that you carried on driving longer than perhaps you should have done?"**

Response	Ex-drivers (339 in total)	Ex-drivers (%)
Strongly agree	13	3.8
Slightly agree	25	7.4
Neutral	46	13.6
Slightly disagree	56	16.5
Strongly disagree	199	58.7

**As we shall see this is partly because many ex-drivers felt that they could have continued driving longer if their financial circumstances had allowed. By the same token the optimism of current drivers about their driving future may partly reflect their relative financial security.**

**2.1.5. General Health**

In relation to the population at large both drivers and ex-drivers report themselves as healthy for their age. A general assessment can be made by tabulating the number out

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of the total of 46 questions in the abbreviated Cornell Medical Index (CMI) in response to which drivers and ex-drivers reported symptoms. Individuals who were still driving were separated into two categories: those who were willing to specify a year, or age, at which they expected to give up driving (the "Give Up" (GU) group) and those that refused to do this, maintaining that they would carry on driving as long as they possibly could, until they were forced to give up by circumstances beyond their control which they could not, at present, foresee (the "Carry On", (CO) group). **This distinction is analytically useful because it highlights a sharp polarisation of attitudes among older drivers towards giving up and allows us to investigate the demographic corollaries of these attitudes, most particularly in terms of health, of driving experience, of environmental and social demands on individuals to keep driving, of self-rated problems with driving and of consciousness of changes in personal driving efficiency.**

Table 2.3 gives percentages of drivers and ex-drivers who rated themselves as having varying numbers of problems under particular headings of the Cornell Medical Index:

**Table 2.3**  
**Analysis of Cornell**  
**Medical Index (CMI)**  
**problem headings**  
**within sample**

CMI total score	Percentage of CO drivers	Percentage of GU drivers	Percentage of ex-drivers
0-1	3.2	3.0	0.9
2-6	52.2**	41.3**	22.6
7-11	26.8	30.5	32.4**
12-16	10.0	14.0	17.7
17-21	5.3	6.0	13.5
22-26	1.7	3.1	5.8
27-31	0.6	1.1	3.7
32-36	0.2	0.6	1.2
37-41	0	0.2	1.5
42-46	0	0.2	0.6

\*\* Modal responses for Groups

In general, ex-drivers are less healthy than either category of drivers. For ex-drivers the modal number of problems reported (total score) is between 7 and 11 (32.4% of respondents), while for CO drivers and GU drivers it is between 2 and 6 problems; (52.2% and 41.3% respectively). Drivers who set no definite time limit to their driving careers (COs) reported fewer problems on the CMI than drivers who foresee giving up at a particular time; (statistically reliable by  $\chi^2$  test at  $p < 0.01$ ).

Specific categories of medical complaints are of interest. Table 2.4 compares percentages of all drivers and of ex-drivers who, on part of the main questionnaire, separately to the CMI, reported particular categories of health complaints which might interfere with their driving comfort or safety.

**Table 2.4**  
**Medical complaints**  
**analysis**  
**(main questionnaire)**

Complaint	Percentage of drivers reporting complaint	Percentage of ex-drivers reporting complaint
Cardio-vascular	58.6	80.2
Muscular/skeletal problems	35.7	50.7
Visual and auditory problems	98.8	99.1
Other health problems	96.6	98.1

*The data base: description of sample and means of data collection*

Ex-drivers more frequently reported problems in all categories. It is unsurprising that almost all individuals in this age range reported visual problems and most of these were mild and correctable by spectacles. The auditory problems which were reported also do not seem to be serious enough to interfere with driving competence. An encouraging point is that 83% of all drivers also reported that they had visited an optician for an eye check during the last two years. For all drivers the mean estimated time since a last visit to an optician was 1.3 years. Since the category of "other" health problems includes all other possible complaints its high incidence is unsurprising and not alarming. Comparison with Cornell Medical Index ratings shows that most problems were not severe.

It is difficult to relate these health data to norms for older members of the UK national population since, we know of no large-scale survey of a UK population using the Cornell Medical Index. A possible comparison is with data published by Martin *et al* (1988) for the Office of Population Censuses and Statistics, which shows a sharp rise in percentages of individuals with disabilities (including minor disabilities) from approximately 17% between the ages of 55 and 60 through 22% between 60 and 65 to 30% between age 70 and 75, to 38% between 75 and 80 and to over 60% after age 80. Problems reported by the present sample on the Cornell Index are relatively minor. If we define the term "disability" as a condition that is likely to restrict the everyday functioning of an individual, it is only in our sample of ex-drivers that we can identify an increasing incidence of "disabilities" with age that approximates to Martin's figures.

Table 2.5 shows a similar picture for psychological problems reported on the CMI. As might be expected from a self-selected sample, both groups seem remarkably well adjusted with the ex-drivers reporting slightly, but significantly, more problems of each kind.

**Table 2.5**  
**Psychological**  
**problems by category**  
**reported according to**  
**CMI**

Complaint	Percentage of drivers reporting complaint	Percentage of ex-drivers reporting complaint
Sensitivity	43.3	53.4
Feelings of inadequacy	30.9	46.0
Depression	13.3	20.1
Anxiety	22.1	23.4
Tension	29.9	40.0
Anger	45.5	50.2

The rank order of frequency of reports of psychological problems is very similar for the two groups. Among drivers the most frequent complaint is of anger, closely followed by sensitivity, then by feelings of inadequacy and of tension with relatively few reports of anxiety or of depression. For ex-drivers the most frequent complaint is sensitivity, closely followed by anger, then by inadequacy, tension, anxiety and depression in that order. Thus there is no evidence that the two groups can be distinguished in terms of their qualitative "profiles" of complaints. The main difference is quantitative: ex-drivers reported more problems in all categories.

In general the reported incidence of problems is reassuringly low and is not discrepant with one of the more benevolent stereotypes of the "older motorist": relative to young adults a calmer and more stable person, with a slight, but not excessive, tendency for concern about personal competence. In sum, quite desirable characteristics from the point of view of road safety.

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In the present context the main interest in these health and psychological factors is whether, and how much, they influence people's decisions as to how long to drive. This was checked using linear multiple regressions to examine how strongly health complaints predicted drivers' estimates of how many years they would continue driving.

Unsurprisingly predicted years of continued driving were negatively related to the four categories of health complaints. Considered jointly these accounted for a statistically reliable, (F of  $-7.212$ ,  $p=0.0003$ ) though small (2.3%) proportion of the total variance in drivers' predictions of how long they would continue to drive. Considered as separate predictors only cardiovascular problems ( $t=-2.81$ ,  $p=.005$ ) and muscular skeletal problems ( $t=2.18$ ,  $p=.029$ ) gave reliable independent predictions. **Apparently, problems with vision and hearing were remediable by spectacles and possibly by hearing aids. In any case, because they were reported by nearly all drivers, they did not emerge as a significant predictor of estimates of further driving career.**

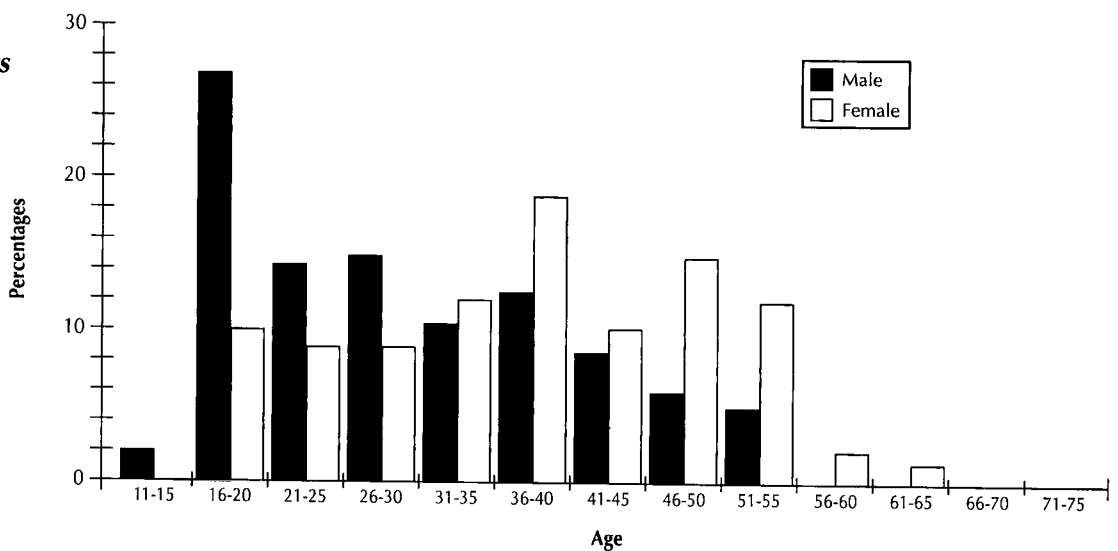
**The five categories of psychological problems, considered together, also had a small, (only 1.2% of total variance between individuals) but reliable (F=2.988;  $p=.00404$ ) negative influence on individuals' predictions of the number of years for which they would continue to drive. Only reports of inadequacy ( $t=-2.46$ ,  $p=0.04$ ) and sensitivity ( $t=-1.83$ ,  $p=0.068$ ) made marginally reliable independent predictions. Reports of depression, anxiety, tension or anger made no reliable additional contribution.**

# Chapter 3 Driving history and reports of reasons for giving up, or thinking of giving up driving

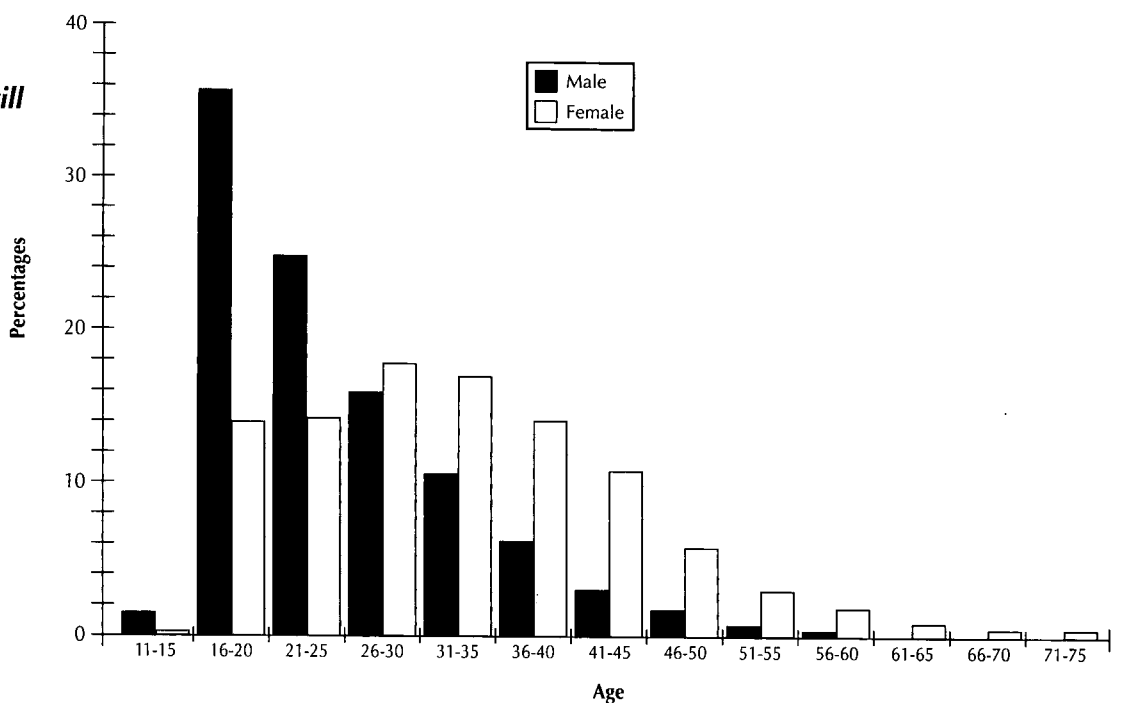
## 3.1 Ages of beginning driving, and duration of driving careers

Figure III.I gives distributions of the ages at which men and women who have already given up driving began to drive, irrespective of whether or not they had been required to pass a "Driving Test". Similar data for individuals who were still driving are given in Figure III.II.

**Figure III.I**  
Ages at which ex-drivers began to drive



**Figure III.II**  
Ages at which individuals who were still driving began to drive



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It is not surprising that more ex-drivers than current drivers never took the standard driving test. They are older, so that more of them had begun driving before mandatory testing was introduced. **It is striking how many ex-drivers began to drive relatively late in their lives, particularly in the period between 1956 and 1975, when they were aged between 40 and 55.** This probably reflects a period of growing national prosperity during which incomes sharply rose and car-ownership correspondingly increased. It also reflects a particular increase in the number of women drivers who took their tests relatively late in life and then gave up after a brief driving career.

**Respondents who were still driving are, on average, about a decade younger than ex-drivers. They benefited from a rise of national prosperity and saw the beginnings of a marked change in gender roles relatively earlier in their lifetimes. Nevertheless Figure III.II shows that among individuals who are still driving women, in general, began to drive much later than men.** The modal ages for beginning to drive were between 16 and 20 years for men and between 31 and 35 for women – a gap of 15 years. Sixty percent of men, but only 29% of women had begun to drive by the age of 25, and 76% of men but only 47% of women had begun to drive by the age of 40. More than half of the women who are still driving began to drive after they were aged 40, and 10% began to drive only after age 50.

**This contrast between men and women is even stronger among ex-drivers. For both men and women there is a strong trend such that individuals who began to drive relatively late in life also gave up driving earlier than those of the same age who started driving earlier. This is especially true of women who began to drive relatively late in life, but then tended to have relatively short driving careers. The strikingly high proportion of women in this generation who began driving only between ages 50 and 60, and the 4% who only began driving after age 60 may point to the particular problems encountered by couples who belong to a generation in which the male partner tended to be the sole driver until disability or death intervened, leaving a non-driving female partner the problem of learning to drive to cope with problems of mobility.**

**Inspection of these data, particularly those from the ex-drivers given in Figure III.I, makes the further interesting point that both men and women who learned to drive younger, and so have driven for longer, also tend to give up driving later in life. There is convincing experimental evidence that complex skills can be learned to a higher standard in youth than in later life, and also that continued practice of skills over a long lifetime ensures their effective maintenance into old age. The converse of this is that skills acquired late in life tend to be learned to a lower level of competence and to suffer a somewhat earlier decline.** However, while Figure III.I appears consistent with these well-established findings it is unsafe to take these particular data on driving careers as clear evidence that the early initiation, and subsequent length of a driving career is the most powerful predictor of its continued extension into old age. We shall discuss further evidence that this may indeed be the case but, when interpreting Figure III.I, it must be borne in mind that these differences must also be very strongly related to socio-economic factors. Ex-drivers are significantly older than current drivers and so probably belong to generations who could not afford cars, particularly second cars for spouses, until late in their working lives. Differences in socio-economic advantage between drivers and ex-drivers are also consistent with this view. Especially for the less well-off ex-drivers retirement would be likely to reduce already lower incomes below the level necessary to maintain a car so that, particularly for women who had learned late, economics might curtail driving careers.

An informative aspect of these data is the extent to which they illustrate a historical trend that allows some extrapolation of changes in the age and gender distributions of older drivers during the next few decades. Comparison of Figures III.I and III.II allows us to inspect trends in life-time driving histories across generations separated by a decade or more. In the older group of ex-drivers about 43% of men had learned to

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drive before the age of 25, but among the younger group who still drove this figure had risen to 60%. As we have seen this trend is even more marked for women. **Comparison of Figures III.I and III.II suggests steady convergence of the ages at which men and women begin to drive. It seems likely that a survey carried out in 30 years time will show no gender differences in terms of years of beginning to drive and that the trend to earlier starts of driving careers for both men and women will also continue so that, speculatively, as many as 80% of both sexes will start driving before the age of 25. Current actuarial trends suggest that one result of this change will be that there will be proportionately more women than men among elderly drivers because women have longer life-expectancies and also longer retain competence later in life. A contributing factor may well be that because females are usually slightly younger than their partners or spouses they are more likely to eventually become the sole drivers of a jointly owned car.**

The actual future distributions of ages and genders among drivers will, of course, be strongly determined by future national economic trends and by public transport policies. However **it seems likely that longer survival of both men and women, increased car ownership, and generally prolonged driving careers, especially for women, will result in a marked increase in the number of older people, especially women, who are capable of driving, who have been used to driving for all of their adult lives, who have developed life-styles which heavily depend on driving and who will, therefore, strongly wish to continue.**

## 3.2 Driving histories

Respondents were asked whether they had ever driven professionally, rather than as an incidental necessity of their work; eg as a public transport, heavy goods vehicle (HGV) or taxi driver. Of the total sample 316 had done so, for periods varying from 1 to 60 years (mean 15.8 years, sd 14). Of these 274 were still currently driving and 42 had given up.

We asked respondents to list the number of driving qualifications that they had obtained, apart from the standard driving test. These included advanced driving courses and HGV and Public Service Vehicle (PSV) licences. Sixteen percent of drivers and 9% of ex-drivers had one or more such qualifications.

All respondents were asked to estimate their average weekly mileages during the last three years (or in the case of ex-drivers during the last three years before giving up driving) and also for the three year period prior to that. ***In the remainder of this report and in relevant tables the use of the term "previous three year period" refers to years four, five and six prior to the survey in respect of those still driving and to years four, five and six prior to giving up driving for those who no longer drove.***

Averages for drivers were 144.5 miles per week during the last three years and 199.1 miles per week during the previous three year period. Averages of estimates by ex-drivers were 138.6 miles a week during the three years immediately before giving up driving, and 187.8 miles a week during the previous three year period.

**This reduction of driving by about 50 miles a week during the 6 years before giving up driving, or answering our questionnaire, is statistically significant for both ex-drivers and for current drivers (t-tests;  $p < 0.001$  in both cases).** It seems that within the age range that we have sampled there is a steady and consistent reduction of mileage with increasing age. However, as we shall see, averages of reported mileages give us only partial information about differences between groups. These trends in mileages are discussed in greater detail in Chapter 4 of this report.

As might be expected from a self-selected sample most respondents, 92% of drivers and 96.2% of ex-drivers, reported no convictions for any driving offence, and the remaining 3.8% of ex-drivers and 8.0% of drivers reported only one conviction. Current drivers were twice as likely as ex-drivers to report a conviction.



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Respondents were asked to report notifiable road accidents during the last three years and during the three years previous to these. During the last three years, 89% of current drivers reported no accidents, 10.6% reported one accident and 1.3% reported two accidents. Equivalent figures for ex-drivers were 80.2%, 16.2% and 3.2% respectively. During the previous years (ie 4–6 years ago) 69% of current drivers reported no accidents and 20% reported one, 7% reported two and 2.1% reported three accidents. For ex-drivers equivalent figures were 70.2%, 17.3%, 7.3% and 3.2%. Members of this sample were, apparently, rather safe drivers. The agreement between reports from both groups (the small differences in favour of current drivers are not statistically reliable) provides some reassurance on the validity of these estimates. The slightly more frequent reports of accidents by ex-drivers should not be taken as evidence for any particular trend because this may reflect a combination of a variety of unrelated factors: ex-drivers do not have to make a case for continuing driving and so may be more willing to report accidents on this questionnaire; ex-drivers are older than drivers, so that their reports date from later periods of their lives during which it is possible that their accident rates indeed became somewhat higher. The fact that ex-drivers were remembering events which were, for them, much further in the past, may mean that they confused chronology and included accidents which occurred outside the specified time frames.

### **3.3 Drivers: thinking about giving up driving**

We asked current drivers if they had thought of giving up driving before, and also whether they intended to give up driving or to continue to drive for the foreseeable future. Table 3.1 gives the distribution of their responses.

We have noted that answers from drivers fell into two distinct categories: from individuals who were unwilling to estimate any specific year, or age, by which they would have given up driving (the Carry On, (CO) group) and those who were willing to estimate a particular year by which they expected to have given up (the Give Up, (GU) group). Six individuals who said that they intended to give up driving in the foreseeable future were nevertheless included in the CO group because they made it clear that they would do so only as a result of some dire unforeseeable event.

**Table 3.1**  
**Answers to the question:**  
**“Do you intend to give up or to continue driving for the foreseeable future?”**

	CO group	GU group
Give up	6 (0.9%)	66 (6.0%)
Carry on	655 (99.1%)	1038 (94.0%)

Drivers were also asked whether they had thought of giving up driving before answering the questionnaire. Answers are shown in Table 3.2.

**Table 3.2**  
**Answers to the question:**  
**“Have you thought of giving up driving before?”**  
**(ie before answering the questionnaire)**

	CO group	GU group
Yes	24 (3.6%)	78 (7.2%)
No	638 (96.4%)	1015 (92.8%)

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The answers to this question are surprising, and revealing. **Even among those drivers who, on reflection, were willing to set a definite date to the end of their driving careers an overwhelming majority, (ie 92.8%) said that they had not given this question any thought before being prompted by the questionnaire. The finding that almost no drivers in this age group have given thought to their driving futures must imply that most of them have also not thought how they may adapt their behaviour to extend their driving careers as safely and as comfortably as possible, and that they do not recognise the need to monitor themselves for signs of problems that are, possibly, easily remediable.**

**Although this statistic may seem inconspicuous among the rest of the evidence presented here, and may appear incidental to the main thrust of this survey, we would stress that this is the strongest evidence from this survey that older drivers, for a variety of reasons, tend to ignore the fact that skill at driving does, objectively, decline in old age and that, for all who survive long enough, driving must eventually be curtailed by frailty. It cannot be too strongly emphasised that in driving, as in all other human activities, successful adaptation to ageing can only be achieved by clear recognition of the changes that must inevitably occur, and by acceptance that it is essential to prepare for these changes and to plan for the contingencies that they may imply. This highlights the importance of finding better ways to inform and advise older drivers, to educate them on the nature, and probable time-course of inevitable changes in their efficiency and so to allow them not only to maintain their safety and comfort as drivers as long as possible but to clearly envisage, and to begin to plan to survive and enjoy a period of their lives when they will no longer be able to drive.**

### **3.4 Ex-drivers: reasons for having given up driving**

Two separate sections of the questionnaire interrogated ex-drivers about their reasons for having given up driving. One section asked them to rate, on a seven point scale from 1 (not important) to 7 (extremely important), the relative salience of particular factors in their decision to give up driving. These factors were broadly classified as 'Financial/economical', 'Accident/Safety', 'Medical/Ability', and 'Personal/Social'. When interpreting data from rating scales one option is to consider average ratings as indices of overall trends. However, to answer the questions considered by this report a more illuminating treatment is to consider ratings as, in effect, "votes" for and against points of view. To do this Table 3.3 compares the percentages of individuals who rated factors as being "extremely" to "quite" unimportant (ratings of 1, 2 or 3) and those who rated factors as being "quite" to "extremely" important (ratings of 5, 6 and 7). The percentages of the remaining "neutral" or "don't know" votes is evident for all cases. Some ex-drivers did not rate all factors, presumably because they felt that if they had rated one or more factor as being overwhelmingly important they might ignore all others. This is taken into account by presenting data as percentages.

**Table 3.3  
Average ratings by  
ex-drivers of the  
relative importance of  
four classes of factors  
in their decisions to  
give up driving**

Factor, with number of individuals who gave ratings	Percentage of individuals who rated factor as "unimportant"	Percentage of the mean of individuals who rated factor as "important"
Financial/Economical 306	36	41
Accident/Safety 298	30	52
Medical/Ability 311	22	65
Personal/Social 293	60	16.3

Comparisons between average ratings under each category, using the Friedman non-parametric test, showed that factors relating to medical status and ability received reliably higher ratings than factors relating to accidents and safety. These latter were, in turn, rated significantly higher ( $p < 0.01$ ) than financial and economic considerations which were rated significantly higher than personal and social considerations ( $p < 0.01$ ).

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Ex-drivers were also asked to briefly describe, in their own words, the single most important reason why they gave up driving. Their answers were then categorised to contrast the same factors as above.

Of the 339 ex-drivers, five did not answer this section. The remaining 334 produced 440 reasons: 106 gave one main reason, and 228 gave two. Table 3.4 separates these comments into the same four categories used to compute Table 3.3.

**Table 3.4**  
**Main reasons for giving up driving given by ex-drivers**

Financial/Economical	Accident/Safety	Medical/Ability	Personal/Social	Other
112	132	118	62	16

More ex-drivers quoted safety than any other reason for giving up driving. When respondents were required to identify a single dominant reason for giving up financial and medical reasons were given equal priority. This discrepancy with the data shown in Table 3.3 highlights the caution with which data from self-rating scales must be interpreted. Among other idiosyncrasies of self-rating scales is the fact that respondents sometimes rate each factor independently, in absolute terms, without explicit or even implicit comparison against the weightings that they may give to any others. In this case they consider whether each factor, in turn, had any significant influence on their decision and do not feel obliged to consider whether their ratings are commensurable in terms of the same criteria of importance. In contrast, when respondents are asked to describe the single most important factor that influenced a decision they are obliged to weigh all possible factors against each other. Failures of agreement between these two kinds of ratings are not necessarily demonstrations of inconsistency by respondents but, rather, represent their intelligent best attempts to answer quite different questions. In designing a questionnaire, if the question of interest is the perceived importance of each of a number of factors, considered in isolation from each other, use of a rating scale probably provides more useful answers. If the question is what is the *rank order of relative importance* which people assign to various reasons for giving up driving, answers to the open question are probably preferable.

**Allowing for logical differences in how respondents interpret these two categories of answers, and how they go about making them, answers to the rating scales and to the open question broadly agree. Personal and social factors are not seen as very important and safety factors are seen as most crucial. The analysis of answers to the open question showed that when a single dominant factor must be given medical reasons are rather less emphasised and are offered by about as many people as are financial reasons.**

The four groups of reasons for giving up driving categorised in Table 3.4 were further broken down in terms of sub groups of the particular kinds of answers given by different respondents. This was unnecessary where financial reasons were given. Tables 3.5, 3.6, 3.7 and 3.8 show breakdowns of safety, medical, social and other reasons respectively.

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**Table 3.5**  
*Breakdown of safety reasons for giving up driving by ex-drivers*

Medical reasons for feeling unsafe	Felt personally unsafe as driver	Felt that other drivers are unsafe
9	100	23

**Table 3.6**  
*Breakdown of medical reasons for giving up driving by ex-drivers*

Eye problems	Movement problems	Cardiac problems	Other
56	20	19	24

**Table 3.7**  
*Breakdown of social reasons for giving up driving by ex-drivers*

Prefer public transport	Another driver available
36	26

**Table 3.8**  
*Breakdown of other reasons for giving up driving by ex-drivers*

No need to drive	Personal stress	Vandals	Adding to pollution
7	5	3	1

It is interesting that 100 of the 339 ex-drivers, (29%), reported that they gave up driving because they felt that they, themselves, no longer drove safely and a further nine said that medical problems had made them unsafe. A further 23 gave up because they felt that other road users behaved dangerously. As we shall see, this is in marked contrast to the feelings of current drivers, especially the CO group, who feel very confident about their own safety and skill but are much less convinced of the competence of other road users.

Among specified medical problems the predominance of visual problems, and the strong emergence of problems of freedom of movement is consistent with findings from other parts of this questionnaire.

It is interesting that 36 (8.1%) of ex-drivers reported that they gave up because they felt that use of public transport was a preferable alternative to maintaining a car. **While this is a somewhat ambiguous result, because an expressed preference for public transport may actually imply underlying financial or health problems, or a concern for personal safety as a driver, the importance of convenient public transport as a viable alternative to driving for older people must be strongly stressed.**

Some extracts from ex-drivers' personal statements of their main reasons for giving up driving give some idea of the potential richness of this source of information. It is strongly recommended that open-ended questions should be included in further studies of larger samples of ex-drivers as an alternative to the more directed and, in many ways more limiting, use of directly focused questions and rating scales.

### **3.4.1 Quotations from ex-drivers' personal accounts as to why they gave up driving**

#### *Financial*

"The upkeep of my car was more than I could afford, nor could I afford a new car."  
"Definitely financial, could not afford to run a car on my basic pension."

#### *Medical*

"Impaired vision and a desire not to put other road users and pedestrians at risk."  
"I did not feel as confident in driving, my eyesight wasn't as good. I thought 75 was too old to be driving."

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#### *Safety*

"Age and present day driving madness."

"The amount of traffic on the road and the pace at which today's driving is done."

"A combination of my age (80) and my first serious accident."

"Take strong medication for pain relief which makes me drowsy and impairs my reflexes."

"Poor sight and I am not so sure of myself when driving."

"Feeling of no longer being a safe driver for self or others."

"My reactions were not as good as before."

"I thought if I continued driving I would probably be a hazard and was safer off the road."

"General speed and lack of courtesy of main road traffic."

"Impatience of other motorists on roads, especially if you are a stranger on strange roads."

"Increasing congestion/hold-ups, number of dangerous bad-mannered drivers."

#### *Social*

"On reaching retirement age I received a bus pass which covers most of my weekly travelling."

"I was driving shorter distances, fewer times. Decided to stop and use buses and taxis. Much cheaper, less responsibility."

"My husband retired and is now available to drive me if I wish to go anywhere."

#### *Other Reasons*

"I had a nasty fall in the house which did not break any bones but shook my confidence."

"My wife suffers from severe dementia. On journeys and during the night she repeatedly said 'Do we need some petrol?' I was driven to distraction."

"My husband developed Alzheimer's disease. He made my life unpleasant if I drove and I wouldn't let him drive because he was unfit and a danger on the road. The easiest thing was to sell the car, though I still feel fit and able to drive."

"My parking permit was stopped to make room for more management. Simply squeezed off the road. Lack of space at home and couldn't afford car parks on my salary."

## Chapter 4 Background factors that influence the decision to give up driving

The main purpose of this study was to identify which factors, or attitudes and what relative weightings of these factors and attitudes are important in leading older people to give up driving. Analysis of data from the questionnaire allowed three different approaches.

**First**, to tabulate and analyse individuals' subjective ratings of difficulties with driving that they currently experience, or which they had experienced during their last years before giving up driving.

**Second**, to tabulate and analyse their reports of a variety of background information on their circumstances and driving histories that might allow us to distinguish the characteristics of individuals who had given up, or who planned to give up relatively early or late in life.

**Third**, after tabulating and comparing these descriptive statistics of early and late withdrawers, it was possible to include both sets of factors as predictors in hierarchical regression analyses to compare their relative importance in accounting for variance in the time scale of actual or projected decisions to withdraw.

The first question was how long people of different ages believe that they will continue to drive. Inspection of responses showed that no completely straightforward answer could be derived because, as we have noted, while most respondents (1133) did foresee, and set, a definite limit to their driving careers over a third of all current drivers (662) would not set any precise date for giving up, usually qualifying this by the observation that they would carry on driving as long as they possibly could and until drastic external circumstances such as death or serious illness forced them to stop at some future date that they were not, at present, able to foresee. Evidently it was only possible to tabulate data on dates of projected retirement from driving for drivers who gave them. Table 4.1 shows the percentages of all drivers in successive five-year age bands age who predicted that they would have given up after different periods of time.

**Table 4.1**  
**Percentage of drivers within specific age band predicting future driving span**

Age	continue 0-3 years	continue 4-7 years	continue 8-11 years	continue 12-15 years	continue 16-19 years	continue 20-24 years	continue 25-29 years	no stop date given
50-54	-	-	-	-	100	-	-	0
55-59	3.4	5.9	22.0	18.6	16.1	3.4	-	30.5
60-64	1.3	8.2	33.5	17.6	7.3	0.4	0.2	31.6
65-69	4.2	16.3	32.7	3.2	1.8	-	-	41.8
70-74	6.6	23.8	17.2	2.0	0.3	-	-	50.0
75-79	17.8	25.7	11.9	-	-	-	-	44.6
80-84	26.1	30.4	-	-	-	-	-	43.5
85+	50.0	-	-	-	-	-	-	50.0

All individuals aged 50 to 54 years set a fixed limit on their future driving, and all of them, with marked consistency, set this limit at between 16 and 19 years, (that is, when they reach an age between 66 and 73). After age 54 the percentage of individuals who refuse to set any fixed limit on their driving increases steadily with group age. Obviously data from these two groups of "Give Ups" (GU) and "Carry Ons" (CO) could not sensibly be pooled in regression analyses carried out to estimate the relative weightings of factors that influenced how long individuals thought they might continue to drive. However **the fact that these two groups so clearly distinguish**

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**themselves in terms of their expressed intentions and expectations for future driving meant that by comparing them on all measures it was possible to obtain useful insights about the interplay between people's attitudes towards driving and their objective circumstances and subjective assessments of their own ability.**

It is interesting to compare the modal ages of intended retirement from driving given by individuals in successive age bands. Drivers aged from 50 to 54 years were unanimous that they would give up driving after a further 16 to 19 years; detailed breakdown suggested that most felt that they would have stopped driving by age of 73.

Most drivers aged from 55 to 59 thought that they would continue for a further 8 to 11 years but almost as many thought that they would continue for a further 12 to 15 or 16 to 19 years. In this group the modal expectation (one fifth) was for giving up driving at about the age of 70. However many (about a third) expected to go on driving throughout their seventies.

For those aged from 60 to 64 one third expected to go on driving for a further 8 to 11 years, that is, until age 68 to 74 and a further quarter expected to go on for 12 to 15 or for 16 to 19 years; that is, throughout their seventies and, for some individuals, well into their eighties.

Among drivers aged from 65 to 69 the modal expectation (one third) was for giving up after 8 to 11 years, that is, in the mid to late seventies or early eighties. Few expected longer careers.

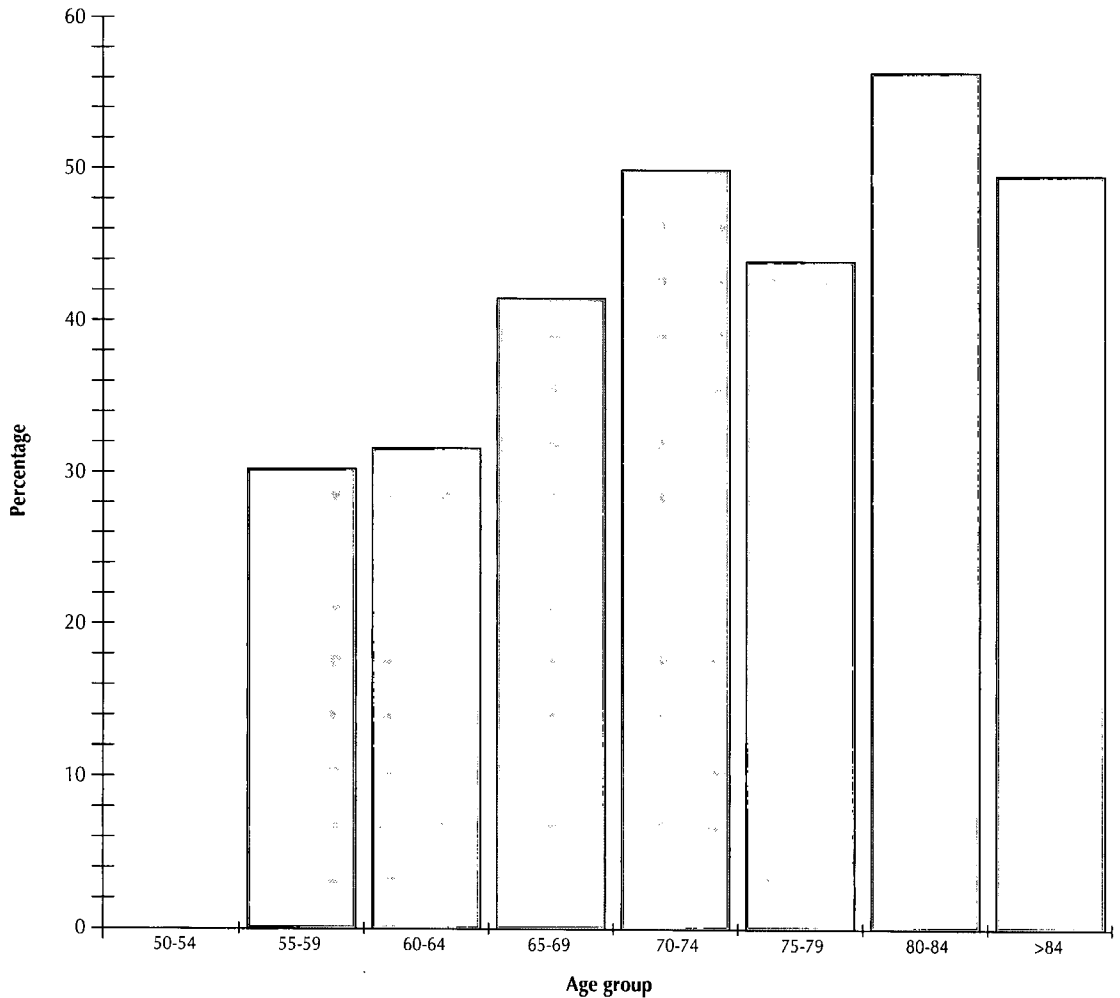
However the modal expectation for drivers aged from 70 to 74 was 4 to 7 years, into the late seventies and early eighties and a quarter of those aged from 75 to 79 years also anticipated another 4 to 7 years of driving, which would take most of them into their early or mid eighties. **A summary statement is that there is some general consistency in that most people do not think that they will continue to drive much beyond the age of 80. Overall, the average age at which people think that they will give up driving is 79, but the variance is so great that this estimate is not particularly useful.**

This breakdown of the data casts light on the age distribution of individuals who refuse to set any definite term to their driving (the Carry On, (CO) group). Figure IV.1 shows that the percentage of individuals who refuse to set a definite term to their driving increases with the age of the group sampled. All respondents aged from 50 to 54 and two thirds of those aged 55 to 59 or 60 to 64 were willing to specify a definite age by which they would give up, but about half of those aged 80 or over were not. It does not seem likely that this was because people in their late seventies or eighties do not realise that they must inevitably give up driving within the next few years. Indeed most of the respondents in these age groups who were willing to set a definite term to their driving estimated a future driving career of less than seven years. **It seems that CO drivers are, predominantly, older people who very well appreciate that they must eventually give up driving and who know that, because of their ages, this must happen quite soon. However they apparently find this prospect so unwelcome that they are unwilling to begin to make definite and serious plans for their future.**

**It seems likely that this group of people might be helped more than others by being brought to see that sensible planning for giving up driving does not imply accepting an earlier date of withdrawal. It may rather help to extend the duration and the safety of driving careers if it includes positive steps such as sensible changes of driving habits and the purchase of cars with automatic transmission, power steering, adjustable seating and other facilities to maximise comfort and efficiency.**

## Background factors that influence the decision to give up driving

**Figure IV.I**  
Percentage of CO group drivers in successive age groups giving no stop date for driving



### 4.1 Objective characteristics of individuals who foresee a specific date for giving up driving, (GUs), of those who do not, (COs), and of ex-drivers

#### 4.1.1 Demographics

Of the 1795 current drivers surveyed 1133 were willing to estimate a definite limit to their driving careers (GU) and 662 refused to do so (CO). The mean age of the CO group was slightly, but significantly, older than that of the GU group (71.5 and 69.9, respectively,  $p < 0.05$ ). Figure IV.I shows the percentage of CO drivers steadily rises with age from 50 to 80 years. It seems that the CO group's optimism that they can defer a decision as to precisely when to give up driving is not due to their relative youth and greater distance from the unpleasant concomitants of old age. Of the CO group 50% are men and 50% women, and of the GU group 58% are men and 42% women. Detailed inspection of the data did not suggest that gender differences affect any of the analyses that follow, so responses from men and women are pooled. The GU and CO groups do not differ in terms of the environments in which they live or in relative socio-economic advantage so these are not entered into subsequent analyses.

#### 4.1.2 Weekly mileages

Table 13 compares the average weekly mileages reported by the GU and CO groups over the last three years against those reported by ex-drivers for their last three years of driving, and for the three years present – 6 through present – 4. For the past 3 years the CO group report slightly, but significantly, higher mileages than the GU group or than ex-drivers. The GU group and the ex-drivers do not differ. For years present – 6 through present – 4 the CO and GU groups do not differ, but both groups report slightly (but not statistically significantly) higher mileages than the ex-drivers for the period between six and four years before they gave up driving. There is some evidence



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that the CO group maintain a higher weekly mileage than the generally younger GU group, or than those who have given up driving.

**Table 4.2**  
**Average weekly mileages for the last six years reported by CO and GU groups and by ex-drivers**

	Total respondents	Mean mileage	Standard Deviation
<b>Last 3 Years</b>			
CO group	631	152.4	226.8
GU group	1103	138.5	122.7
Ex-drivers	286	138.6	340.1
<b>Previous 3 year period</b>			
CO group	624	199.2	170.2
GU group	1091	199.0	212.3
Ex-drivers	227	187.8	286.2

The data were too sparse to make it sensible to break down reported average weekly mileages for ex-drivers in terms of their ages at the point of giving up driving, from which dates the periods were set. However to examine age-trends in estimated mileages this was done in Table 4.3 for individuals currently driving, contrasting the GU and CO groups.

**Table 4.3**  
**Comparisons of average weekly mileages by current age for GU and CO groups**

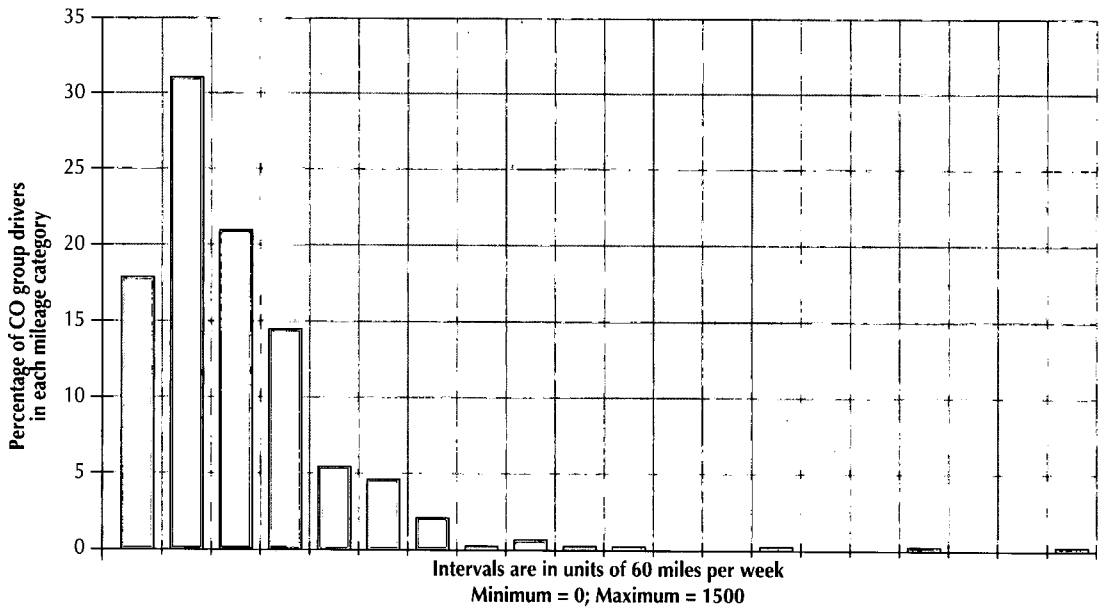
	Age 50 to 59	Age 60 to 69	Age 70 to 79	Age 80+
<b>Last 3 Years</b>				
GU group	242	147	134	94
CO group	insufficient data	153	166	90
<b>Previous 3 year period</b>				
GU group	225	212	188	163
CO group	insufficient data	212	198	157

The consistency between groups is striking. Both those who do not set a fixed term to their driving (COs) and those who contemplate stopping at a definite date (GUs), show closely similar reductions in miles driven during the last three years across successive age groups and also in miles driven during the previous three year period. **The CO group estimate somewhat higher weekly mileages than the GU group but comparisons of average mileages do not suggest that their driving habits are very different, or that their weekly mileages decline less rapidly as they grow older.**

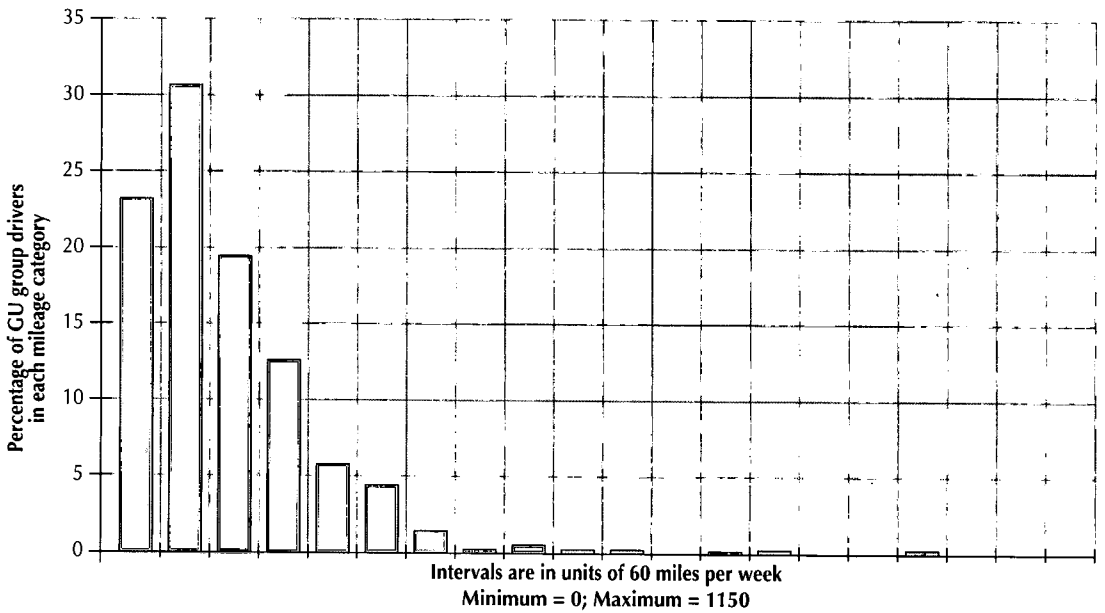
It is important to note that comparisons of averages of reported mileages may be misleading because they conceal very marked differences in the variances of estimates given by these three groups. For the three years before completing this questionnaire the means of weekly average mileages estimated by the CO and GU drivers are quite similar, (152.4 and 138.5 respectively). However the standard deviations of these estimates are nearly twice as great for CO (sd=226.8) as for GU (sd= 122.7) drivers. This high variability reflects the fact that distributions of estimates were highly skewed. Thus while averages of estimates by CO and GU drivers were not markedly different, many more CO than GU drivers estimate very high mileages. Figures IV.II and IV.III show the distributions of mileages estimated during the last three years by CO and GU drivers respectively. Fewer CO than GU drivers report relatively low and more of the CO than of the GU drivers report very high weekly mileages during the three years before filling in this questionnaire.

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**Figure IV.II**  
Average weekly mileages estimated by CO group drivers for the three years before completing the questionnaire



**Figure IV.III**  
Weekly mileages estimated by GU group drivers for the three years before completing the questionnaire



**4.1.3 Driving Qualifications**

Table 4.4 compares the three groups on the driving qualifications that they had attained in addition to the standard test. The ex-drivers, who come from an earlier generation, are somewhat more likely than the GU group, and much more likely than the CO group, to have obtained no further qualification. A significantly higher percentage of the CO group than of the GU group had gained additional qualifications. **With their greater estimated weekly mileages there are grounds for the view that, in spite of their slightly greater ages, members of the CO group had rather greater driving expertise than members of the GU group.**

**Table 4.4**  
Number of driving qualifications passed in addition to standard test

Number of extra qualifications	Percentage of CO group 662 in total	Percentage of GU group 1133 in total	Percentage of ex-drivers 339 in total
0	79.3	85.6	91.2
1	17.4	12.5	8.6
2	2.6	1.6	0.3
3	0.6	0.3	0
4	0.2	0	0

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In keeping with their average higher levels of qualifications (which were mainly HGV and PSV licences) more members of the CO group (19.3%) than of the GU group (12.9%) or of ex-drivers (13.7 %) had driven professionally. Differences between the CO and the other two groups are statistically significant.

A further question was whether an important difference between the CO and GU groups was that they had to meet quite different external pressures to continue driving. One check on this was to ask them whether they were presently involved in any social or work activity (either paid or voluntary) for which the use of their own car would be preferable. Table 4.5 compares the three groups.

**Table 4.5**  
**Answers to question:**  
**Are you engaged in any activity for which a car would be preferable?**

	Percentage of CO group 634 in total	Percentage of GU group 1090 in total	Percentage of ex-drivers 322 in total
Yes	47.9	45.9	13.7
No	52.1	54.1	86.3

There are clear differences between ex-drivers and drivers, but this may only reflect the obvious point that people who no longer own a car are less likely to involve themselves in activities for which the use of a car is necessary. **It is interesting that the difference between the CO and GU groups is not statistically reliable. This suggests that the reluctance of the CO group to specify a definite date for giving up driving arises from a particular attitude towards driving and car ownership, rather than from a practical demand to keep driving.**

A similar hypothesis was that members of the CO group might be obliged to continue driving because they cannot share driving with a partner or friend, and may be the sole driver on whom a household depends or because they live alone and depend on a car for their mobility. To check this we tabulated in Fig 4.6 answers to the question "Do/did you share the driving of your car with anyone else?"

**Table 4.6**  
**Answers to question:**  
**Do you share driving with anyone else?**

	Percentage of CO group 588 in total	Percentage of GU group 1051 in total	Percentage of ex-drivers 315 in total
Often	19.2	19.7	18.7
Sometimes	19.2	18.6	24.8
Rarely	61.6	61.7	56.5

As Table 4.6 shows **there is no evidence that CO drivers are less able or willing to share driving than GU drivers. These two groups have very similar car sharing habits.** The small differences between retrospective statements of ex-drivers and statements by current drivers are not statistically reliable.

#### **4.1.4 Legal driving records**

Slightly fewer ex-drivers (3.8%) than CO or GU group drivers (8% for both groups) reported any conviction for a driving offence. The finding that ex-drivers were twice as likely as current drivers to report one conviction leads to no clear-cut conclusion. The ex-drivers were older, and it is possible that they felt they risked less by honesty. However it is also the case that, as we shall see, many CO and GU group drivers anticipate that a conviction might lead them to strongly consider giving up driving.

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Table 4.7 shows that all three subgroups report fewer notifiable road accidents during their last three years as compared with the three previous years of driving.

**Table 4.7**  
**Notifiable accidents reported by the three sub-groups in the periods up to 3 years and 4–6 years before the survey**

Number of accidents reported	Last 3 Years			Previous 3 year period		
	Percentage of CO group 591 in total	Percentage of GU group 1003 in total	Percentage of ex-drivers 253 in total	Percentage of CO group 587 in total	Percentage of GU group 1003 in total	Percentage of ex-drivers 248 in total
0	91.2	86.2	80.2	69.2	68.6	70.2
1	7.1	12.0	16.2	21.3	19.2	17.3
2	1.5	1.2	3.2	5.1	8.2	7.3
3	0	0.4	0.4	1.9	2.6	3.2

The CO group reported fewer notifiable accidents over the last three years than did the other two groups. For the previous three year period there are no differences between groups. Overall, the CO group seem to have been the safest drivers and the ex-drivers seem to have had more accidents. Differences are too small to allow confident attributions; for example, that ex-drivers might have given up because of a slightly higher accident record, or that the CO group are, in general, safer and more skilled drivers. However on this evidence the CO group, are at least as safe and skilful as the other groups.

Table 4.8 shows a similar pattern for reports of minor mishaps (such as reversing into a gate post).

**Table 4.8**  
**Numbers of minor mishaps reported**

Number of mishaps reported	Last 3 Years			Previous 3 year period		
	Percentage of CO group 602 in total	Percentage of GU group 1034 in total	Percentage of ex-drivers 266 in total	Percentage of CO group 600 in total	Percentage of GU group 1025 in total	Percentage of ex-drivers 274 in total
0	66.4	64.0	63.9	50.8	48.5	39.4
1	21.9	26.2	22.9	27.5	25.4	28.1
2	7.3	6.2	8.6	12.3	14.6	17.9
3	3.0	2.2	3.0	5.5	5.4	9.5

All groups reported more minor mishaps than notifiable accidents and so, apparently, clearly make this distinction. Over the last three years the CO group drivers reported significantly fewer mishaps than did GU group drivers. Over the previous three year period the difference between the CO and GU groups is smaller, but still significant. Both groups of drivers reported fewer mishaps than the ex-drivers. Once again, **as far as this evidence goes, the CO group seem to be, if anything, slightly more competent than GU drivers or ex-drivers. GU drivers seem to be more competent than ex-drivers, especially over the previous three year period.**

## **4.2** **Changes in driving habits**

Previous work has suggested that the decision to give up driving is usually preceded by a change in driving habits, for example by increasingly avoiding difficult routes and stressful weather and traffic conditions. To examine this we asked respondents whether they had noticed any changes in their experience of various, potentially stressful, driving situations between the last three and the preceding three years. They rated each of 13 different situations on a 5 point scale classifying each one that they had experienced as being much more frequently, more frequently, about the same, less often or much less often than the previous three year period.

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Ratings for most situations were very similar: about half of each group reported no reduction in the amount of driving in stressful situations over the last three years as compared to the previous three year period. Ex-drivers were more likely than were current drivers to report changes in driving behaviour over their final three years as drivers. In all of the particular situations investigated fewer CO than GU group drivers reported changes. Across all driving conditions this difference between CO and GU groups is shown to be statistically reliable by Sign test ( $p < 0.05$ ). Table 4.9 shows the percentages of GU group drivers, of CO group drivers and of ex drivers who reported driving in these particular, stressful situations less often, or much less often during the last three years.

**Table 4.9**  
**Percentage of drivers less often/much less often in specific stressful situations than during the previous three year period**

Driving Situation	Percentage of GU group drivers reporting less driving	Percentage of CO group drivers reporting less driving	Percentage of all drivers reporting less driving	Percentage of ex-drivers reporting less driving
Night driving	53	51	56	63
Dawn or dusk driving	46	43	43	54
Rush hour driving	60	55	58	58
Motorway driving	36	31	39	50
In bad weather	36	30	38	47
When tired	58	52	55	56
When in poor health	40	40	44	53
Unfamiliar vehicles	54	52	58	67
City centre	52	44	51	58
Unfamiliar areas	42	37	47	61
Country lanes	12	14	13	16
Driving long distances	44	40	42	37

Table 4.9 makes the general point that more than half of all respondents observe some reduction in their driving under difficult conditions over the last six years of their current, or previous, driving careers. The rank order of situations in which a reduction of driving was reported is: rush hour driving, 58%; driving unfamiliar vehicles, 58%; night driving, 56%; driving when tired, 55%; city centre driving, 51%; driving in unfamiliar areas, 47%; driving when in poor health, 44%; driving at dawn or dusk, 43%; driving long distances, 42%; Motorway driving 39%; driving in bad weather; 38%; driving in country lanes 13%.

When interpreting these trends we must take into account not only individuals' perceptions of increased difficulty or stress in particular situations but also changes in their lifestyles. It is easier for retired people to choose when they drive, so that avoidance of rush hours may reflect what drivers of any age would prefer to do if they could. Reduction of night driving, and of driving when tired may also reflect reduction of external demands as much as increased perceptions of stress. However the emphasis placed by all drivers on problems with night vision make it likely that stress was a factor in this case. Less driving of unfamiliar vehicles, or in unfamiliar areas, also probably reflects reductions in work demands or other obligations resulting in a less taxing routine while driving only a particular, personal, vehicle.

**The three groups reported very different levels of change in their driving habits. CO group drivers perceived significantly, but slightly less change ( $p < 0.05$ ) than GU group drivers and ex-drivers remember more change in the years preceding giving up**

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driving than currently active drivers reported for the past three years; ( $p < 0.05$ ). It is possible that ex-drivers, who have given up driving, and so have no position to defend, may be more willing to admit changes in driving patterns with the implication of some changes in ability. However it is also important to remember that ex-drivers are reporting on their final three years before giving up driving; ie a period during which they perhaps faced a build up of circumstances that eventually made them withdraw.

The rank order of reported reduction across situations is closely consistent between ex-drivers and those who are willing to consider giving up driving (Pearson's rank order correlation of  $r > .9$ ). Agreement between those who do not contemplate giving up and the other two groups is less strong but still statistically reliable; (Pearson's rank order correlation of  $r > .7$ ). The changes in driving patterns reported by the GU group closely match those remembered by ex-drivers during their final three years on the road. The CO group not only reported less alteration in driving patterns, but also weight stressful situations slightly differently than the other two groups.

These points must be borne in mind in order to interpret the results of a multiple regression in which respondents' ages, and their ratings of perceived changes in these 14 different types of driving activity were examined as predictors of the number of years that they intended to continue driving. With age included in the regression equation reduction in these driving activities made a reliable ( $F = 2.555$ ,  $p = .00124$ ) but small (1.4% of total variance between individuals) negative prediction of the number of years that individuals thought that they would continue driving. When drivers' ages were included in the equation the only other factor that approached significance was the perception of increased frequency of driving when in poor health ( $t = -1.08$ ;  $p = .083$ ). When age was omitted from the regression equation the overall prediction was no longer significant ( $F = 1.134$ ,  $p = .325$ ) and again, only increased driving in poor health approached significance as a predictor. It is not surprising that the perception of driving increasingly often when in poor health should be related to the feeling that driving is becoming a burden. This analysis does not, of course, mean that the eventual decision to give up driving may not also be anticipated by changes in driving habits. Significant differences between the numbers of CO and GU group drivers who reported changes in driving habits suggest that there may, indeed, be consistent patterns of changes in driving behaviours before eventually deciding to give up. The results of this multiple regression analysis should only be taken to mean that when individuals try to estimate the number of years for which they are likely to continue driving, they do not seem to take into account the adaptations that they may already be making to reduce driving stress. **However a feeling that increasingly poor health is making driving difficult in ways that are not in one's personal control is likely to be a strong factor in causing people to consider giving up.**

Another complication in interpreting the results of this multiple regression is that the effects of age are not independent of the effects of changes in driving behaviour. Indeed it is likely that many changes in driving behaviour are driven by increasing age. To examine this, the percentages of individuals who noticed any reduction in driving in each of these situations were computed for all drivers, (but not for ex-drivers) separately within the three age groups 50 to 65 years, 66 to 75 years and over 75 years. These are shown in Table 4.10 which gives total percentages of drivers who perceived any change with percentages of drivers who noticed a marked change (ie "much less often") shown separately.

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**Table 4.10**  
**Reduction in driving**  
**in specified conditions**  
**by age groups**

Activity	Drivers aged 50 to 65 years		Drivers aged 66 to 75 years		Drivers aged over 75 years	
	any change	marked change	any change	marked change	any change	marked change
Night driving	49%	13%	54%	14%	55%	13%
Dawn and dusk	32%	9%	47%	11%	46%	9%
Rush hour	47%	13%	58%	16%	56%	13%
Motorway	31%	9%	37%	10%	33%	10%
Bad weather	31%	5%	35%	6%	32%	5%
When tired	52%	13%	56%	15%	54%	14%
In poor health	39%	12%	42%	13%	39%	12%
Unfamiliar vehicles	51%	26%	65%	30%	55%	29%
City centre	44%	15%	50%	19%	47%	17%
In unfamiliar areas	36%	9%	43%	12%	40%	10%
In country lanes	11%	2%	15%	3%	12%	2%
Long distances	38%	12%	45%	16%	33%	14%

As might be expected the rank-order of amounts of perceived change across different driving situations is closely similar to that shown in Table 4.9. The new information provided by this breakdown is that even in the youngest group who are aged between 50 and 65 years between 30% and 50% of respondents perceive some reduction in their driving in stressful situations. Driving in country lanes seems to be a special case because few respondents noticed any reduction in their driving in this situation and we may infer that such reduction as occurred may be related to an overall decline in mileage driven. This latter factor is, of course, also confounded in all other estimates. Rather more respondents aged from 66 to 75 years and, in contrast, rather fewer respondents aged over 75 years reported changes.

The finding that the oldest group reported rather less perception of change is only apparently paradoxical. It must be borne in mind that members of each age group are contrasting their behaviour during the last three years with their behaviour during the previous three year period so that all judgements are relative, and all groups are making judgements with respect to different baselines. Further, the age ranges within groups are 15 years; that is, more than twice the periods over which people within each group consider whether or not their driving behaviours have changed. Because judgements are relative to different baselines it is not possible to use these figures to compare the *magnitudes* of change that are experienced within each age band. All that can be said is that between a third and a half of respondents aged under 65 years observed some, or considerable, reduction in the amount that they drove in particular situations. To this we may add that the numbers of respondents noticing changes in their driving in these situations was slightly but significantly greater (by sign test,  $p < 0.05$ ) in the group aged from 66 to 75 years than in either of the other age bands. The slight fall in the number of respondents aged over 75 who reported change may reflect the fact that, by age 75, very marked reductions in driving, in particular stressful situations, have already occurred so that less further change is possible. **The main message of these figures, therefore is that consistent, and continuous, changes in driving patterns occur over the age range between 50 and 75+ years.**

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**4.3 Health problems**

A somewhat related question was whether there are consistent differences in the ratings of their general health which the CO, GU and ex-driver groups gave the Cornell Medical Index (CMI). Questions were grouped into sections relating to different aspects of health. Some of these were physical (eg eyesight and hearing ability) and some were less so (eg anxiety and tension). The number of affirmative responses to all questions were summed to give a rough index of general health. Table 4.11 gives the distribution of totals of symptoms all kinds reported by the CO, GU and ex-driver groups.

**Table 4.11**  
**Distribution (by percentage) of total numbers of symptoms reported by three groups**

CMI Total scores	Percentage of CO group drivers 1755 in total	Percentage of GU group drivers 1105 in total	Percentage of ex-drivers 327 in total
0-1	3.2	3.0	0.9
2-6	52.2	41.3	22.6
7-11	26.8	30.5	32.4
12-16	10.0	14.0	17.7
17-21	5.3	6.0	13.5
22-26	1.7	3.1	5.8
27-31	0.6	1.1	3.7
32-36	0.2	0.6	1.2
37-4	0	0.2	1.5
42-46	0.0	0.2	0.6

All groups are relatively healthy for their ages. Modal reports are between two and six symptoms for the current drivers and between seven and 11 symptoms for the ex-drivers. This difference certainly reflects the fact that ex-drivers were older, and also, possibly, the continuation of medical conditions that contributed to their giving up driving. There is also a suggestion that the CO group, who set no definite limit to their future driving, reported fewer symptoms than the GU group, who were willing to set a date of withdrawal. This cannot be explained as a side-effect of age since the CO group was slightly, but significantly, older than the GU group.

The groups were also compared on another series of questions about health problems which might be directly related to their driving skills. The percentages of individuals in the three groups who agreed that they had these categories of problems are shown in Table 4.2.

**Table 4.12**  
**Health problems admitted by specific groups by percentage**

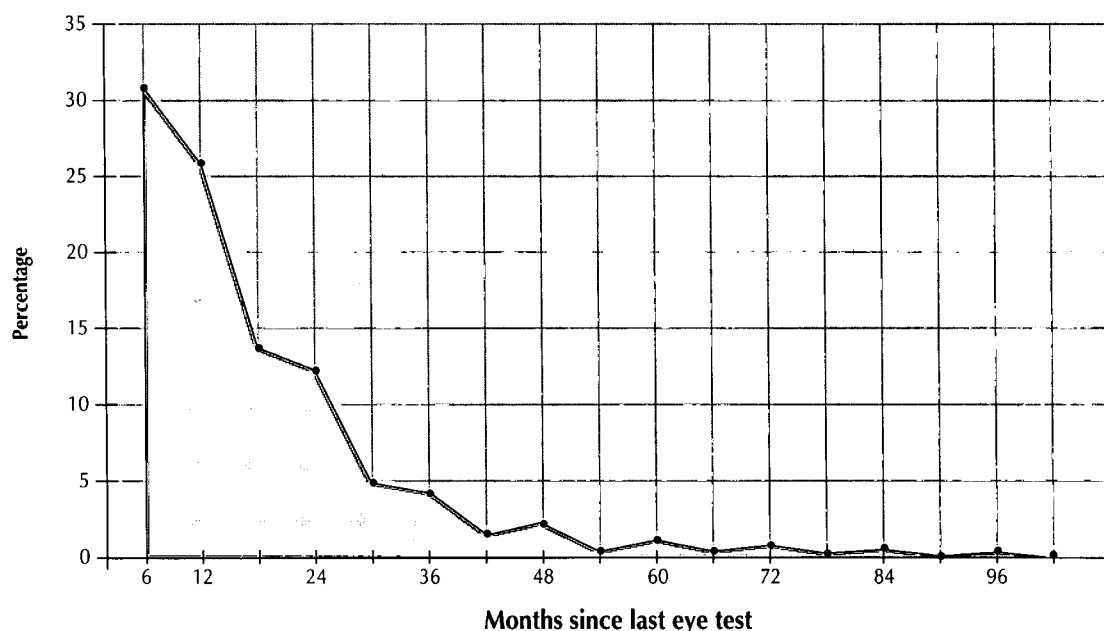
Health Question	Percentage of CO group drivers agreeing	Percentage of GU group drivers agreeing	Percentage of ex-drivers agreeing
Do you need to wear glass for driving?	68.9	70.3	75
How long since last eye test?	1.2 years (sd 2.2)	1.3 years (sd 1.7)	1.5 years (sd 2.8)
Do you take any medication?	77	77	82
Do you feel that this medication impairs your concentration?	1.4	3.6	17.3
When seated does stiffness make it hard to see over your shoulder?	32.5	40.9	47.2
Does stiffness in your back, arms or legs affect your ability to drive?	10.3	17.2	31.8
Does weakness in your back, arms or legs affect your ability to drive?	5.3	7.6	22.4
Is stiffness or weakness a constant problem?	24.4	28.4	47.2
Is stiffness or weakness an occasional problem?	75.6	71.6	52.8
Do you suffer from any other medical condition which you feel affects your driving?	14	17.5	44.2



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The high proportion of individuals who need glasses for driving is to be expected in these age groups. It is reassuring that the overwhelming majority of all groups report having taken eye-tests within the last 24 months. Since the possibility of undiagnosed visual problems among older drivers has caused some concern Figure IV.IV gives the distribution of percentages of all respondents still driving by elapsed times since their last eye-tests. The figures are reassuring: 57% of all drivers had been tested within the last 12 months, 80% had been tested within the last 24 months and 93% had been tested within the last 36 months before taking the questionnaire. We also compared estimates given by GU and CO group drivers and by ex-drivers of the elapsed intervals, in years, since their last eye-tests. Means for the CO group, GU group and for ex-drivers were, respectively, 1.3 (sd 2.3), 1.3 (sd 1.7) and 1.5 (sd 2.75). There is some suggestion that individuals currently driving have had their eyes tested more recently than have ex-drivers.

**Figure IV.IV**  
**Period since**  
**respondents' last eye**  
**test, by percentage**



The high proportion of individuals who take medication is, also, to be expected for people in this age range. It is, of course, cause for concern that any individuals should feel that the medication that they take may impair their competence to drive, but only 1.4% and 3.6% of the two groups of current drivers reported this problem.

The most common problems reported were stiffness and upper-limb weakness. As usual, the numbers of individuals reporting these problems varies with the way in which the question is put. Only between 30% and 40% agree that stiffness is a problem in turning round to see behind, as when reversing. Fewer still (approximately 20%) agree that stiffness or weakness is a constant problem. However between 71% and 75% agree that stiffness or weakness is an occasional problem.

As might be expected ex-drivers experienced most difficulty with medical conditions that might affect driving. Individuals who are unwilling to predict any definite limit to their driving reported fewer problems than those who are willing to estimate a definite date by which they will have given up. This might be interpreted as self-justification for a refusal to set a limit to future competence, but it is also likely to reflect the reality that individuals who experience few health difficulties are, quite understandably, less likely to anticipate a definite end to their driving careers.

We might expect the frequency of complaints that may affect driving to increase with age. In fact this survey gave no evidence that the percentages of drivers who feel that their efficiency is impaired by particular complaints markedly alters between age groups. There was a statistically reliable trend such that slightly more drivers in the age

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range from 66 to 75 years complained of difficulties than did drivers in the other age groups. However rather fewer drivers aged over 75 than drivers aged from 50 to 65 complained that their driving is affected by these particular conditions.

This is unexpected. As usual, it is necessary to consider the way in which the question was put: drivers were not responding to the question whether or not they suffer from a particular condition but rather whether or not the condition affected their ability to drive safely. The *incidence of conditions* and the *extent to which they are tolerated, or accommodated*, during driving, or during any other activity are quite separate issues. This would make sense of the otherwise paradoxical finding that more drivers aged between 50 and 65 years than drivers aged over 75 years complain of problems that interfere with their driving. The 50 to 65 year olds are just becoming aware of problems of sensory loss, stiffness and other difficulties. In contrast we may speculate that most people aged over 75 years have suffered from such problems for some time, and have grown used to them, or adapted their driving behaviour to accommodate to them. **It seems probable that more older than younger drivers suffer from slight difficulties, but that because they gradually become part of their lives they adapt to them, and accept them as normal.**

## **4.4 Anticipating giving up driving: summary**

Respondents who are still driving sharply divide into two groups in terms of their expressed intentions for continuing to do so. About a third of respondents who are still driving say that they intend to carry on driving until obliged to stop by circumstances which are both beyond their control and unforeseeable at present. The demographic characteristics of this CO group may be contrasted with those of current drivers who are willing to estimate a particular date for giving up driving (the GU group) and of ex-drivers. The CO group includes equal numbers of men and women; in general they reported fewer health problems on the Cornell Medical Index than do the GU group. As might be expected from their older ages, ex-drivers reported more health problems than either group of current drivers. We also, separately, queried the extent to which respondents felt that their driving was affected by particular physiological problems that are known to affect driving. Not surprisingly, ex-drivers reported more such health problems than did current drivers. The CO group, although they are older, reported significantly fewer such problems than do the GU group. It is surprising that, within the group of drivers, the incidence of reports that these problems interfere with driving does not increase with age. Indeed levels of complaint were slightly higher among individuals aged from 50 to 65 years than among individuals aged over 75 years. This illustrates the distinction between admitting to suffering from a problem, and admitting that a problem that one is aware of affects an activity like driving. It seems likely that older drivers have gradually accommodated to slight problems and so rate them as no more significant, or even as less significant, than do younger drivers who have just begun to notice them.

CO group drivers estimate slightly higher average weekly mileages than GU group drivers over the last three years (152.4 as against 138.5) but not during the period between six and four years ago; (199.2 as against 199.0). In evaluating this statistic it must be borne in mind that the variance in weekly mileages reported by CO group drivers is much larger than in other groups because many CO group drivers reported very high weekly mileages indeed. Both CO and GU group drivers reported higher mileages during the last three years than ex-drivers report for the three years before they gave up driving. In all groups average weekly mileage steadily reduces with sample age between 50 and 80+ years. This rate of this reduction is closely comparable between CO and GU group drivers, with the caution that in this case means are unrepresentative statistics and that variance is greater in the CO group. It seems possible that some, or even most, CO group drivers are indeed rather more experienced and capable than most GU group drivers and that their refusal to set any

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specific limit to their driving careers partly stems from an actual advantage in health and in driving ability. The CO group includes more individuals with advanced driving qualifications. CO group drivers report fewer convictions for driving offences. They report involvement in slightly fewer road accidents during the last three years (91.2 percent of CO group drivers as against 86.2 percent of GU group drivers reported no accidents). They also reported fewer minor mishaps (66.4 percent of COs as against 64.0 percent of GUs reported no mishaps during the last three years). CUs also reported fewer difficulties in particular, stressful driving situations. They also reported less problems with externally imposed stresses such as poor lighting and weather conditions. There is no indication that CO and GU groups differ in their needs to own and use a car, or in the extent of their social life or their ease of access to friends and relatives. However, not surprisingly, individuals who are unwilling to predict a particular date for giving up driving do report somewhat greater dependence on car ownership.

# Chapter 5 Expressed attitudes in relation to giving up driving

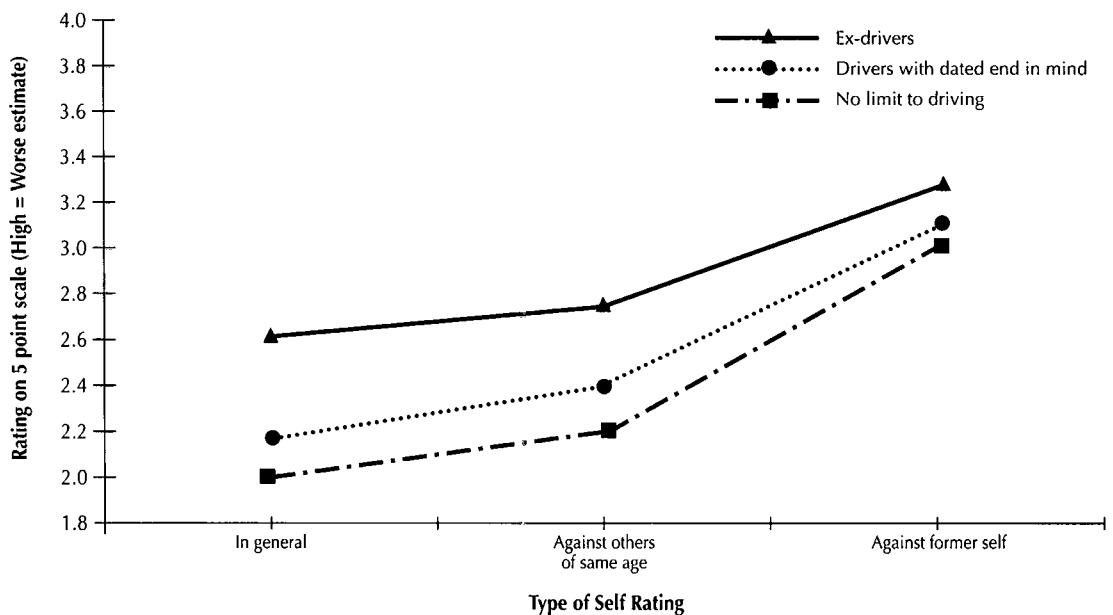
## 5.1 Subjective perceptions of difficulties in driving, and of changes in driving skill with increasing age

To examine how people notice changes in their driving skill which occur as they grow older we included a series of 14 questions relating to specific difficulties that individuals might experience with their driving. These are shown in full (pages 59, 60 and 61) in the driving questionnaire given in Appendix A to this report.

Respondents were asked to rate their current levels of ability in three different ways: in absolute terms; relative to other drivers of their own age groups and relative to their own remembered performance three years earlier. They used a 5 point scale, rating themselves as Very Good to Very Poor, or Much Better to Much Worse as the question required.

These three different types of ratings were used because previous studies with other self-rating questionnaires reported by Rabbitt & Abson (1992) and Holland & Rabbitt (1992) and in the general literature on changes in self-ratings with age reviewed by Rabbitt *et al* (1995) show that older individuals are much better at making relative comparisons against objectively defined standards than at making absolute judgements when no standards for comparison are defined. For example, when asked to rate their general health on a 5 point scale from Very Poor to Very Good, people aged from 50 through 86 years give identically positive answers. In contrast, when asked to compare their current health with their own health three years ago the number of negative reports significantly increases with group age; (McInnes & Rabbitt, 1996 in press). The influence of type of self-rating is shown in Figure V.1 which separately plots self-ratings for three different kinds of comparison averaged across all 14 questions made by current drivers who set no limit to their future driving (CO drivers), by drivers who foresee a dated end to their driving careers, (GU drivers) and for ex-drivers.

**Figure V.1**  
**Self-ratings by three groups of older motorists**



For all groups the probability of reporting some loss of driving skill is much higher when comparisons are made against one's own previous performance over the last three years than when they are made against other drivers of one's own age or as an absolute judgement against an undefined standard. This is consistent with the previous

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literature on self-ratings in old age (Rabbitt, 1994). The replication of these previous findings in the current context suggests that ratings of changes in current against previous performance are likely to be more sensitive to, and revealing of, objective change than others. Support for the greater validity of this index is the pattern of self-ratings given by ex-drivers who may, realistically, be expected to have lost some driving skill and confidence because of their greater ages, because of their decision to withdraw from driving and also because they have not driven for some years. In spite of these negative factors their average ratings when evaluating themselves "In general" and "Against others of the same Age" fall well below three points: that is, below the level at which ratings indicated "no change". In contrast, ex-drivers do admit to some loss of skill when rating their current ability against that three years ago.

A second point is that average ratings do differ between groups. As might be expected, on all three rating scales ex-drivers express themselves the least confident, and CO group drivers express themselves the most confident of their current ability. On all scales COs rate themselves slightly, but significantly, more favourably than do the GU group. Both groups of current drivers rate themselves as being better than average both in general, and in relation to their age-peers. Across all categories of driving problems, both groups of drivers report no perceived change relative to their own competence three years ago.

Because of the difficulties of interpretation illustrated by Figure V.1 comparisons of average self-ratings give us only limited information about the relative extent to which drivers in particular groups felt themselves to be affected by particular driving problems. However by comparing the rank-orders it was possible to test whether these 14 types of driving problem were perceived as being in the same rank order of difficulty when different scales were used, and when ratings were carried out by different groups of individuals. Rank-order correlations between ratings given by groups of GU and CO drivers and by ex-drivers all exceeded Pearson's  $r=0.85$ . Rank order correlations for ratings given on different scales also averaged between  $r=78$  and  $r=96$ . It seems that groups were consistent with each other, and also self-consistent across rating scales in terms of their perceptions of the rank orders of perceived difficulty of these problems.

Because rank orders of perceived difficulties of driving problems were highly consistent across rather different self-rating scales it seems that respondents were, indeed, able to make clear and consistent distinctions between the impacts of different kinds of change on their driving ability. This is useful because, as we have seen, individuals' self-ratings must give marked underestimates of the true *absolute* incidence of particular categories of problem in a population, but consistency in rank order between scales and within respondents indicates that they may provide reasonable estimates of the relative rank order of the impact of different kinds of driving stress. The two highest ratings on this scale identified cases in which respondents felt that their performance had become worse, or much worse, over the last three years. The percentages of individuals who gave such ratings therefore identified the percentages of respondents who reported that they had noticed some deterioration in performance in each of the areas examined. Table 5.1 plots these data to compare all drivers with all ex-drivers.

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**Table 5.1**  
**Deterioration reported by drivers relating to specific driving skills as compared with ex-drivers**

Particular demand on driving skill	Percentages of all drivers reporting deterioration over the last 3 years	Percentage of all ex-drivers reporting deterioration over the 3 years prior to giving up
Reading road signs in time to act appropriately	6.8	30.5
Judging gaps in traffic	4.0	25.5
Peripheral visual detection of cyclists, pedestrians and other vehicles	6.3	25.0
Vision in reduced illumination	23.2	43.4
Problems with glare in bright illumination	14.1	29.1
Speed of decision when deciding to cross the road through traffic or pull out into traffic	6.5	25.5
Speed of reaction, especially braking	4.0	23.1
Navigating in an unfamiliar area	11.8	34.6
Memory for a route once walked or driven	11.5	33.5
Staying alert for long periods	18.0	31.2
Recognising that attention is wandering	4.7	24.6
Judging speed of oncoming traffic	4.9	24.8
Dividing attention between two different tasks; ie talking while driving	13.7	35.2
Ability to reverse park in an awkward or confined space	12.7	39.4

Many more ex-drivers than drivers report noticing changes in their driving ability. Over 20% of ex-drivers report loss of ability in each of these 14 situations. This is to be expected because they have given up driving, presumably in part because they felt that they were increasingly beginning to stretch the limits of their competence. They are an older group, and they have not driven for some time.

**In contrast, only 4% to 6% of all those still driving report noticing any change over the last three years. Those situations in which substantial numbers of drivers report decrements are highlighted in Table 5.1. Over 23% report that their vision in low illumination has become worse. The second most frequently noticed problem is in maintaining alertness over long periods of time. While there is much anecdotal evidence that older people suffer from this problem laboratory experiments have, surprisingly, found little or no age-related change in the ability to keep alert for long periods. However older people have been tested in laboratories only for relatively short periods of 30 minutes to 60 minutes, and the complex concomitants of physical and sensory stress, common in driving, have not been investigated. There are good arguments for intensive applied studies comparing the objective effects of fatigue in younger and older adults over much longer periods. The third most frequently reported problem is glare. These reports represent a substantial under-estimate in comparison with reviews by Corso (1989) of objective statistics on visual loss in low illumination and in glare reported for similar age groups. The fourth most common problem is dividing attention between two or more concurrent tasks. The observation that older people find it increasingly difficult to do two things at once is very familiar in studies of cognitive ageing (Salthouse, 1985; 1991). Clearly this ought to be further investigated in actual, or simulated driving tasks. The fifth most commonly acknowledged problem is increased difficulty with parking. This is, no doubt, at least partly due to problems of upper body stiffness highlighted by this sample in another context above. Memory problems, especially spatial memory for routes, are a familiar theme in cognitive gerontology and their appearance in this study is not surprising.**

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What is surprising is that older people who are still driving give such low ratings to failures that have often been highlighted in the Road Research literature as being most characteristic of “elderly accidents”. Notable among these is inefficiency in judging speed of oncoming traffic, judging gaps in traffic and the ability to make fast decisions when pulling out into traffic or crossing a traffic stream. Also, well-documented reductions in peripheral visual sensitivity with increasing age, and the substantial numbers of accidents which appear to be due to neglect of drivers and pedestrians in the peripheral visual field do not square with the relatively small percentage (ie 6.3%) of older drivers who noticed deterioration of ability in this respect. It is also surprising that these ratings do not reflect robust empirical findings that reaction times (as for emergency braking) markedly decline in old age, particularly when complex decisions are involved.

These points focus attention on what rating scales can, and cannot tell us. The literature on self-assessment shows that individuals’ knowledge of their own performance depends largely on the quality of the feedback that they can get from the tasks that they attempt, (Rabbitt, 1994). Visual problems in poor illumination force themselves on the attention in a dramatic way. People are also, embarrassingly aware of memory failures in route finding and of uncomfortable and disquieting fatigue. Distractions from concurrent tasks make themselves clearly felt. Parking problems can be very inconvenient and embarrassing and so impress themselves very strongly. Individuals’ self-ratings tend to pick up precisely such problems as force themselves on conscious attention, but to miss other problems which, although they may be potentially more severe, provide less definite and vivid feedback. **It is important to stress that what self-ratings cannot pick up are insidious problems of which people seem to remain subjectively unaware; such as increasing difficulties with accurate judgements of speed and distance, (Holland & Rabbitt, 1992) and the inexorable slowing of reaction times with increasing age.**

**Nevertheless it must also be stressed that although they are sometimes poor guides to the objective severity of particular problems, subjective self-ratings can make a different, and unique contribution to our understanding of changes in performance in old age. In cases in which they can be compared with objective evidence, they highlight precisely those difficulties which people do not recognise. Thus they potentially identify precisely those situations in which the discrepancy between the objective impact and the subjective consciousness of increasing difficulty is particularly blatant. Because of this, self-ratings can be our best sources of information as to the types of information and education that people actually need in order to recognise objective changes in their behaviour and so to drive more safely.**

As Figure V.1 shows those drivers who do not set any definite term to their driving report less subjective perception of change than those who are prepared to envisage giving up. In general the contrasts are not very illuminating since the CO group, who gave lower ratings on most situations, have a rank order of problems which closely resembled those given by the GU group and by ex-drivers. To give some idea of the sizes of differences, 4.0% of the CO group as compared with 7.2% of the GU group and 25% of ex-drivers reported increased difficulty with peripheral visual detection of cyclists and pedestrians; 8.8% of the CO group as compared to 13.1% of the GU group and 33.5% of ex-drivers reported increased difficulty with following a route once walked or driven and 8.5% of the CO group as compared with 15% of the GU group and 39.4% of ex-drivers reported difficulty with reverse parking in awkward locations.

Another way of examining these data is to consider perceived change in these 14 areas as joint and independent predictors of the number of years which people in the GU group estimate that they will continue to drive. To do this we considered individuals’ reports of perceived change over the last three years which appeared to be the most

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sensitive index. With age entered as a variable in addition to all 14 categories of driving demand the overall prediction was highly reliable ( $F=3.957$ ,  $p=.0000001$ ), but accounted for only 2.6% of variance between individuals. The only factor that made a reliable independent prediction was a perception of increasing difficulty in coping with competing demands, such as driving and conversation; ( $t=-1.95$ ,  $p=0.05$ ) and the only other factor that approached reliability was a perception of increased difficulty in peripheral visual detection of cyclists and pedestrians ( $t=-1.741$ ,  $p=0.081$ ).

When age was left out of the regression equation the overall prediction was still robustly reliable ( $F=2.697$ ,  $p=0.000626$ ) but the amount of variance between individuals accounted for by all perceived changes taken together reduced to 1.4%. In this case perceived change in the ability to do two things at once was still reliable at a slightly increased level, ( $t=-2.06$ ,  $p=.039$ ) a perceived increase in the difficulty of driving in poor illumination was also reliable; ( $t=-1.91$ ,  $p=0.05$ ). Perceived change in peripheral visual detection of cyclists and pedestrians still approached, but did not reach reliability at the conventional 5% level ( $t=-1.70$ ,  $p=0.089$ ).

It must be stressed that there is no logical conflict between the picture presented by these multiple regression analyses and by direct comparisons between the relative frequencies of reports of problems by drivers and ex-drivers. **Respondents were asked to rate their perceptions of changes in these potential sources of driving difficulty. In the resulting comparisons differences between drivers and ex-drivers are what we would expect, and the rank ordering of these perceptions of difficulty provide an interesting insight into individuals' relative sensitivities to changes in their ability to cope with different driving demands.** The multiple regression analyses ask quite another question: the extent to which individuals' perceptions of problems in particular situations correlate with their answers to quite the quite different question as to how long they will continue to drive?

**It is quite understandable that while relatively few individuals perceived any change in their ability to cope with two things at once, or in peripheral visual detection of cyclists and pedestrians, those, relatively few, individuals who *did* perceive changes in these particular abilities, either because they had become a source of stress or because they had caused alarming, and so well-remembered, "near misses", were more likely than others to think of giving up driving relatively soon.**

## 5.2 Perceptions of causes of accidents and of advantages and drawbacks of car ownership

**Our working hypothesis was that among important factors that can influence the timing of a decision to give up driving are perceptions of degree of responsibility as a driver for safety of oneself and others; the extent of agreement with stereotypes of loss of driving skill in old age; perceptions of the desirability or convenience of owning a car and realisation of alternatives to car ownership and of some advantages of giving up a car.**

The questionnaire included 21 statements on these themes. Respondents indicated the extent of their agreement or disagreement with each on a 5 point scale from "Strongly Agree", through "Neutral" to "Strongly Disagree".

Statements about possible causes of accidents were of two kinds. One set of four mentioned causes which were external to drivers and not under their control.

These were:

- (1) "It is difficult to prevent accidents in bad weather conditions such as darkness or rain";
- (2) "Most accidents are due to pedestrians not following the rules of the road";
- (3) "Accidents are mainly due to various unpredictable events";
- (4) "Driving with no accidents is largely a matter of luck".



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A second set of four statements emphasised driver control and responsibility. These were:

- (1) "Accidents are often caused by drivers not paying full attention to their driving";
- (2) "Most accidents are the result of driver error";
- (3) "A careful driver can prevent most accidents"; and
- (4) "Most accidents are caused by inexperienced drivers".

Responses from drivers and from ex-drivers were tabulated separately. Table 5.2 sets out percentages of agreements and disagreements with each of the four statements attributing accidents to factors beyond the driver's control:

**Table 5.2**  
**Responses from drivers/ex-drivers to statements relating to causes of accidents**

Statement: Accidents are often due to:	Percentage of drivers who agree	Percentage of drivers who disagree	Percentage of ex-drivers who agree	Percentage of ex-drivers who disagree
Poor driving conditions	33.8	52.6	51.7	31.0
Poor pedestrian behaviour	23.7	48.1	36	33.9
Unpredictable events	40.1	42.6	51.2	23.0
Luck	26.2	48.3	35	47.5

**In responses to all four statements ex-drivers, more than drivers, agreed with the view that accidents are often, or even usually, caused by events which are not under a driver's control.**

Table 5.3 sets out similar data on responses to the four statements that attribute control and responsibility to drivers rather than to external events.

**Table 5.3**  
**Responses from drivers/ex-drivers to statements relating to driver responsibility for accidents by percentage**

Statement	Percentage of drivers who agree	Percentage of drivers who disagree	Percentage of ex-drivers who agree	Percentage of ex-drivers who disagree
Inattention by driver	97.1	1.4	95.8	0.9
Driver error	81.9	6.0	74.8	10.5
Careful driver can prevent most accidents	89.8	3.3	86	3.0
Inexperienced drivers cause most accidents	45.3	28.6	50.7	25.4

**Both drivers and ex-drivers tend strongly to support statements that place responsibility for accidents with drivers. Differences between drivers and ex-drivers are not significant.**

**The bias towards acceptance of driver responsibility for safety is so strong that it could hardly be more marked in any younger sample. Thus the results strongly make the point that older drivers and ex-drivers accept, and take seriously, their personal responsibility for road safety.**

A further set of three statements reflected positive attitudes towards car ownership. These were:

- (1) A car is an important status symbol;
- (2) Driving enhances a person's independence;
- (3) Driving is vitally important to most people today. Answers by drivers and ex-drivers are given in Table 5.4.

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**Table 5.4**  
**Responses to**  
**statements relating to**  
**car ownership**

Statement: Attitude towards car ownership	Percentage of drivers who agree	Percentage of drivers who disagree	Percentage of ex-drivers who agree	Percentage of ex-drivers who disagree
Status symbol	22.5	41.8	30.3	33.9
Independence	93.4	1.4	86.4	2.7
Vitally important	81.8	5.0	75.5	8.1

**These comparisons are interesting because they suggest that older drivers are relatively unconcerned about car ownership as an adjunct to their images. However both drivers and ex-drivers, though understandably more particularly drivers, perceive and value possession of a car as an aid to independence and mobility.**

A further set of statements raised possible advantages of giving up driving: These were:  
(1) Giving up driving will (or did) save me a lot of money;  
(2) Giving up driving will (or did) simplify my life; and  
(3) Giving up driving will (or did) relieve me of unwanted responsibility. Percentages of answers are given in Table 5.5.

**Table 5.5**  
**Responses to**  
**statements relating to**  
**the advantages gained**  
**from giving up driving**

Statement: Giving up a car will:	Percentage of drivers who agree	Percentage of drivers who disagree	Percentage of ex-drivers who agree	Percentage of ex-drivers who disagree
Save money	48.9	19.2	76.7	9.1
Simplify my life	11.6	83.2	46.5	31.2
Relieve me of unwanted responsibility	16.1	58.2	58	17.4

**The financial burden of a car is clearly perceived, most especially by those who have given up driving. Evidently most older people who still drive do not think that car ownership increases, rather than relieves, unwanted trouble. Those who have experienced life without a car seem significantly more convinced that giving up driving has advantages.**

**Those still driving are not convinced that giving up a car will relieve them of unwanted responsibility, but 58% of ex-drivers agree that it does. Clearly people who have given up driving begin to appreciate some advantages in giving up a car, or at least perhaps, have learned to live contentedly with a decision that they have been obliged to make. In general, older people who still drive do not believe that giving up their cars will simplify their lives. In the view of current drivers, the advantages of mobility apparently outweigh other disadvantages of car ownership.**

A further seven statements expressed disadvantages of giving up a car. These were:

- (1) Without a car older people are at greater risk of being victims of violence;
- (2) Giving up driving will (or did) restrict my mobility;
- (3) Giving up driving will (or did) restrict my independence;
- (4) Giving up driving will (or did) mean letting down people who rely on me;
- (5) Giving up driving will (or did) cause me difficulties due to unsuitable public transport;
- (6) giving up driving will (or did) limit my ability to make even the shortest journeys; and
- (7) Giving up driving is not an option for someone who cares for a mobility impaired spouse or relative. Views of drivers and non-drivers are tabulated in Table 5.6.

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**Table 5.6**  
**Responses to**  
**statements relating to**  
**disadvantages**  
**resulting from giving**  
**up driving**

Statement: Problem with giving up a car	Percentage of drivers who agree	Percentage of drivers who disagree	Percentage of ex-drivers who agree	Percentage of ex-drivers who disagree
Violence	44.1	17.9	49.2	26.3
Restricted mobility	92.3	4.6	73.8	19.7
Restricted independence	91.3	4.1	79.9	23.1
Letting people down	54.9	16	27.4	40.5
Difficulty with public transport	80.1	9.1	53.1	32.7
Limit even short journeys	50.1	34.9	36.6	38.9
Not an option for a carer	75.6	6.5	68.8	7.8

**It is indeed sad that over 40% of elderly drivers feel that giving up a car may put them at greater risk of violence. It is even more sad that the proportion who feel this should remain equally high among those who have learned to live without a car.** This is particularly unfortunate because statistics on the incidence of violent crime suggest that public apprehensions of the threat of violent crime are very much greater than the actual incidence of such crimes might justify and also that older members of the community are very much less at risk of physical assault than are young adults. **This is a clear case in which perceptions of difficulties that are not directly connected with driving seem to affect decisions about motoring behaviour. It underlines the point that personal decisions about car ownership are based on a very disparate range of factors, many of which do not directly relate to the simple logistics of personal transportation and mobility. Evidently changes in driving behaviour cannot be brought about solely by better information on how to cope with driving difficulties.**

It is clear that **an overwhelming concern of people who currently drive is the loss of mobility and independence that giving up a car will entail. This is still a dominant issue for those who are now without a car, though many ex-drivers seem to have adapted quite successfully.**

This topic may conveniently be taken in conjunction with worries about the adequacy of public transport. **Many car owners express anxiety about the poor quality of public transport services, perhaps because more of them live in rural or suburban areas where this is indeed a problem. This anxiety seems to be based in reality because 50% of those individuals who have given up driving feel public transport to be, at least in some measure, inadequate. The provision of adequate public transport is an extremely important factor in mitigating the widely expressed fears of loss of independence and mobility.**

Even in a healthy population over half of all who still own a car and over a third of ex-drivers who are adapting to life without a car, feel that lack of a car makes even short journeys difficult.

The statement about responsibility to others ("letting people down") and the statement about the difficulty of those who have to care for individuals whose mobility is impaired may be taken together. Over 50% of current drivers see possession of a car as necessary to fulfil obligations to others. However only 27% of those who have given up motoring agree with this statement, and 40% disagree. **As raised in this question the issue of responsibility to others is vague, and may cover both serious unavoidable commitments and quite casual obligations. However the question sharpens when the particular responsibility of carers for mobility reduced individuals is raised. Almost all current drivers and ex-drivers see car ownership as essential for carers.**

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A final set of statements related specifically to attitudes to driving by older people. These were:

- (1) Anyone who continues driving after the age of 70 puts both themselves and others at risk;
- (2) People should be free to continue driving whatever their age, so long as they can demonstrate adequate driving ability if called upon to do so; and
- (3) people should be free to continue driving, whatever their age, so long as they feel confident about their own driving ability. Responses are given in Table 5.7.

**Table 5.7**  
***Responses to statements expressing attitudes to driving by older people***

<b>Proposition:</b>	<b>Percentage of drivers who agree</b>	<b>Percentage of drivers who disagree</b>	<b>Percentage of ex-drivers who agree</b>	<b>Percentage of ex-drivers who disagree</b>
Over 70's are risky drivers	12.1	71.9	36.0	43.9
No age limit if ability is shown	81.6	3.6	68.4	19.1
No age limit if self-confident	48.0	31.8	51.1	35.0

The first statement, obviously, was deliberately provocative for this particular population and was duly rejected by 71.9% of drivers but only by 43.9% of ex-drivers. Surprisingly, for a sample in this age range, it was endorsed by 12.1% of drivers and by 36% of ex-drivers. **The stereotype of the dangerously incompetent elderly driver is, apparently, still alive even in this older age group. Perhaps the relatively harsher views of ex-drivers are, to some extent, brought about by the natural human feeling that others, also, should follow, and so validate, the decision that they have made.**

Answers to the remaining two propositions show more tolerance; 81.6% of drivers and 68.4% of ex-drivers agreed, and only 3.6% of drivers and 19.1% of ex-drivers disagreed with the proposition that people might be allowed to continue driving indefinitely while they can demonstrate competence. To this extent, and against the blanket stereotype which appears to guide comments on the statement that "people who continue to drive after the age of 70 put themselves and others at risk" there is support for the idea that older drivers do not pose a risk provided that their competence can be checked.

The remaining statement that continuing driving should be a matter for personal confidence and judgement brought a more muted response. Here 48% of drivers and 51.1% of ex-drivers agreed, and 31.8% of drivers and only 35% of ex-drivers disagreed.

**The inconsistencies between levels of agreement with these three propositions are interesting. A stereotype boldly stated seems to command agreement. A proposal that driving should be conditional on satisfaction of external criteria of competence is apparently strongly endorsed. The idea that competence should be self-assessed, rather than externally assessed, still meets with strong support.**

**There seems to be a strong, but ill-founded belief, both among drivers and ex-drivers, both in this elderly sample and in the population at large, that self-evaluation may be as valid as objective external evaluation. This conviction is not supported by the bulk of empirical evidence (Rabbitt, 1994) or, indeed, from analysis of this particular questionnaire (see, for instance, Table 5.7 above).**

## Chapter 6 Acceptability of proposals and sanctions to increase safety of older drivers

### 6.1 Ratings of possible sanctions and proposals for compulsory assessment and for provision of information about current driving competence

Respondents were asked to rate the acceptability and effectiveness of 21 different courses of action that might conceivably be taken to examine and regulate the efficiency of older drivers. These included continuing the present system without modification, re-testing drivers after accidents, convictions and bans, suggestions that GPs or opticians should inform Driver and Vehicle Licensing Agency (DVLA) of any medical condition likely to affect a driver's ability, and other suggestions for intervention.

Respondents first rated each proposal on a 7 point scale, with 1 indicating minimum and 7 indicating maximum acceptability. They next rated the items according to their view of how effective they would prove in practice, from 1 as least effective, to 7 as most effective.

Averages of ratings give an incomplete idea of judged acceptability or effectiveness of proposals because they are, in effect, "weighted average votes" in which those who express very strong opinions have a proportionately stronger voice than those who express moderate or neutral opinions. A more accurate picture of the relative acceptability and effectiveness of proposals can be gained by comparing the percentages of individuals polled who did not give "neutral" votes, but declared either clear positive or clear negative views. This allows ratings to be translated, in effect, into votes for (ie ratings of 5 through 7) and against (ie ratings of 1 through 3) particular proposals, excluding "don't knows"(ie ratings of 4). The complete list of questions, and votes on acceptability, are given in Table 6.1.

The numbers given in Table 6.1 indicate the percentages of all respondents, including "don't knows" who supported or rejected proposals. When ratings are translated into votes in this way a useful guideline is to consider whether each proposal is accepted or rejected by more than 50% of respondents. Votes of over 50% are highlighted in Table 6.1. A point, in the context of which other responses should be considered, is moderate support for the *acceptability*, but very little credence in the *effectiveness* of the support for the *status quo*. of the present licensing system. Adopting the 50% vote as a cut-off for significance, **the proposals found most acceptable, in rank order, are that drivers should themselves be responsible for informing the DVLA of medical conditions that might interfere with their driving (72.2%), that information booklets should be provided (68.6%) that drivers should be re-tested after any ban, (61.1%) that GPs should be required to inform DVLA of any conditions that might interfere with a patient's driving (60.3%), that drivers should be re-assessed after any ban, (60.1%) that opticians should be required to inform DVLA of conditions that may interfere with patients' driving (59.1%) and that the police should have the powers to make anyone displaying risky driving behaviour to undergo re-assessment (51.6%). The most strongly opposed proposals are re-testing after any accident (55%) and compulsory re-testing on a ten year cycle after passing first test (54.8%) and a five year cycle after age 60, (51.8%).**

Judged as most effective was the sanction of re-testing after every ban (74.4%). Compulsory reassessment after a ban (with the implication that failure would not necessarily be penalised by suspension of a licence to drive, as would be the case for re-testing) was also seen to be an effective measure (55.4%). The other measures seen as most effective were impositions of obligations on drivers themselves (67.8%), opticians, (67.4%) and GPs (64.4%) to inform the DVLA of conditions likely to interfere with driving competence.

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**Table 6.1**  
**Responses as to the acceptability and effectiveness of actions to examine and regulate the efficiency of older drivers**

	Acceptable (percentages)		Effective (percentages)	
	No	Yes	No	Yes
The testing and licensing system that is in existence now	15.9	43.7	28.1	25.7
Drivers should be retested every ten years after passing their first test	<b>54.8</b>	24.3	33.5	37.8
Drivers should be re-tested every five years after the age of 60	<b>51.8</b>	24.2	32.0	37.9
Drivers should be re-tested after any accident	<b>55.0</b>	22.3	41.8	30.6
Drivers should be re-tested after any ban	18.9	<b>61.1</b>	15.3	<b>74.4</b>
Drivers should be re-tested after any driving conviction	34.5	42.6	26.9	47.6
Drivers should be assessed every ten years after passing their first test	37.5	46.4	31.9	48.2
Drivers should be assessed every five years after the age of 60	33.8	25.5	26.8	42.5
Drivers should be assessed after any accident	39.5	34.0	34.5	35.9
Drivers should be assessed after any ban	20.3	<b>60.1</b>	21.3	<b>55.9</b>
Drivers should be assessed after any driving conviction	31.7	43.1	29.6	40.7
Driving assessments should be readily available but when and how often they are used is the sole responsibility of the driver	35.2	42.2	51.1	33.5
Drivers should be required to undergo a full medical examination at an age of around 60 years	37.4	46.8	31.2	41.1
Opticians should be required to inform the Driver and Vehicle Licensing Authority (DVLA) of any condition that may affect a patient's ability to drive	24.0	<b>59.1</b>	15.3	<b>67.4</b>
GPs should be required to inform DVLA of any medical condition that may affect a patient's ability to drive	23.0	<b>60.3</b>	14.6	<b>64.4</b>
Drivers themselves should be required to inform DVLA of any medical condition they have which may effect their ability to drive	12.7	<b>72.2</b>	22.2	<b>67.8</b>
The Police should have the power to compel anyone displaying risky behaviour on the roads to undergo a re-test	39.5	37.5	29.4	45.4
The Police should have the power to compel anyone displaying risky behaviour on the roads to undergo an assessment	24.5	<b>51.6</b>	23.2	48.8
A licensing system should be introduced which can more flexibly limit various aspects of everyone's driving with regard to their health, ability and driving record	36.8	34.7	34.8	37.2
A 'do it yourself' test kit should be made available so that drivers can test themselves for the important basics of driving ability (eg vision, mental quickness etc) and obtain appropriate information which would indicate whether there is any need to seek further professional advice about their driving future	35.9	46.5	<b>56.3</b>	21.1
Information (eg booklets, courses etc) should be made available so that drivers can obtain general advice about common issues for older drivers such as the relationship between changing ability and changing driving habits	19.3	<b>68.6</b>	31.0	38.3

**A modest proportion of respondents felt that it would be acceptable if assessments were generally available on demand, with the implication that the decision as to whether, and how their results were used was left to the drivers who volunteered to take them. However this was the only measure rated by more than 50% of respondents as unlikely to be effective; ineffective (56.3%). The other measure considered to be moderately acceptable, but ineffective was the provision of DIY self-testing kits, (46.5%).**

This discrepancy between judged acceptability and judged effectiveness is encouraging because it suggests that **respondents did indeed make some distinction between the extent to which a measure would be tolerated and it's potential usefulness if implemented.**

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**6.2  
Differential effects of age and socio-economic advantage on assessments of proposals**

It was of interest to know whether drivers' ratings of acceptability and effectiveness of these proposals vary with their ages or with the socio-economic groups to which they belong. To explore the effects of age on ratings of acceptability, age was used as a predictor of ratings for each proposal in turn. Average ratings increased with age for only eight of the 21 proposals examined. These are listed in Table 6.2 with the F values, levels of statistical reliability and amount of variance accounted for in each case.

**Table 6.2**  
*Effects of increasing age on ratings of acceptability of proposals to improve driving safety of older motorists*

Proposal	F value and level of significance of regression of age on ratings	Percentage of total variance between individuals accounted for by Age
Re-test after any accident	F=3.79; p=.05	0.1
Re-test after any conviction	F=4.75; p=.029	0.2
Assess every 10 years	F=7.04; p=.008	0.4
Assess every 5 years after age 60	F=20.71; p=.0006	1.16
Opticians to inform DVLA of conditions likely to reduce driving safety	F=3.92; p=.048	0.17
Drivers obliged to inform DVLA of conditions likely to reduce driving safety	F=10.36; p=.0013	0.5
Police powers to compel re-test of individuals found driving at risk	F=8.24; p=.004	0.4
Provision of "Do it yourself" assessment kit	F=3.99; p=.045	0.2

**Older drivers were significantly more likely than younger to rate these proposals as acceptable. Trends with age in the cases illustrated were significant in the sense that they were extremely unlikely to have occurred by chance but, in any single case, the effect of age was very small, accounting for, at most, 1.16% of total variation in ratings between individuals. It is somewhat unexpected that within this older sample of respondents, who would be directly affected by such a sanction, so many find it acceptable that drivers should be assessed (but, note, not tested, with the implication of possible refusal of a continued licence to drive) every five years after the age of 60, and also find it acceptable that drivers of all ages should be assessed every ten years after obtaining their licences. There is also increasing approval with increasing age of respondents for the idea that GPs, opticians and drivers themselves, should be obliged to notify the DVLA of conditions likely to reduce driving safety. Support for a "do it yourself" self-assessment kit increases with age but, curiously, there is no increasing support with increasing age for the provision of advice on driving through information booklets or courses.**

A similar analysis was carried out to examine the effects of membership of socio-economic groups on judgements of acceptability of these proposals. SEG membership significantly affected level of approval in only the six cases listed in Table 6.3.

**Table 6.3**  
*Effects of increasing socio-economic advantage on ratings of acceptability of proposals to increase driving safety of older motorists*

Proposal	F value and significance of regression of SEG on ratings	Percentage of total variance between individuals accounted for by SEG
Assess every 10 years	F=3.704; p=.054	0.1
Opticians obliged to inform DVLA of conditions increasing driving risk	F=11.34; p=.0007	0.6
GPs obliged to inform DVLA of conditions increasing driving risk	F=9.68; p=.027	0.5
Police powers to compel re-test of individuals found driving at risk	F=4.86; p=.027	0.2
Provision of "Do it yourself" assessment kit	F=17.23; p=.00003	0.9
Provision of information booklets, courses etc	F=6.237; p=.0126	0.3

### *When and why older drivers give up driving*

Approval for re-assessment (but not re-testing) of all motorists every ten years increases with the level of socio-economic advantage. There was also a trend for more advantaged individuals to support the proposal that motorists should be assessed every five years after the age of 60. However this fell short of conventional levels of statistical reliability; ( $F=2.89$ ;  $p=.09$ ). The strongest trend with increasing socio-economic advantage is increasing support for the provision of DIY self-assessment kits and, consistently with this, for provision of information by means of booklets and courses for older drivers. Perhaps this is a demonstration of a tenet of the educated upper middle class that most difficulties in life can be overcome by appropriate provision of opportunities for self-education and access to information.

### **6.3 Comparisons of ratings of acceptability and effectiveness of proposals by CO and GU group drivers, and by ex-drivers**

The first proposal was that drivers of all ages should be tested at ten-year intervals after passing their first test, irrespective of health or driving record. Table 6.4 compares percentage of agreements and disagreements by CO and GU drivers and by ex-drivers.

**Perhaps, unsurprisingly, this proposal sharply divides current drivers from ex-drivers. Most current drivers were not in favour of schemes for compulsory testing at regular intervals irrespective of health or driving record. More CO group drivers than GU group drivers voted against this proposal. In contrast 53% of ex-drivers thought the proposal acceptable, and 37.2% did not.**

**Table 6.4**  
*Ratings of acceptability of drivers being re-tested every ten years after passing their first test*

	Percentage of CO group drivers 656 in total	Percentage of GU group drivers 1118 in total	Percentage of ex-drivers 317 in total
Not acceptable	60.0	56.8	37.2
Acceptable	30.8	33.7	53.0

It is interesting that when the word 're-tested', which implied the possibility of a ban on driving following failure, was replaced with the word 'assessed', which carries the implication that the outcome would be advice on improvement of driving skills and on how to cope with any difficulties encountered, 48.6% of CO group drivers, 51.5% of GU group drivers and 50.5% of ex-drivers were in agreement. There was some polarisation. The minority who dissented tended to strongly disagree.

Ex-drivers were, in general, quite supportive of the introduction of measures to control driving by older people. They are, for example, more strongly in favour than drivers of the idea of extending police powers to compel anyone displaying risky behaviour on the road to undergo a re-test or an assessment. However it must be borne in mind that this particular proposition does not predicate a sanction specific to *older* drivers, but rather one that would affect *all* drivers including younger motorists who are seen by older motorists and, indeed, who appear in accident statistics, as being most likely to cause accidents by careless driving.

It is clear that respondents' ratings of the acceptability of particular proposals are strongly affected by their opinions as to whether they are likely to prove effective in reducing accidents. This is apparent from the marked tendency of all respondents to give similar ratings for the acceptability and effectiveness of any particular proposal. For example patterns of ratings of acceptability (Table 6.5) and of effectiveness (Table 6.6) of the proposal that 'Drivers should be re-tested after any ban' are almost identical.



*Acceptability of proposals and sanctions to increase safety of older drivers*

**Table 6.5**  
**Ratings of**  
**acceptability of drivers**  
**being re-tested after**  
**any ban**

	Percentage of CO group drivers 659 in total	Percentage of GU group drivers 1120 in total	Percentage of ex-drivers 317 in total
1 Least	7.1	6.6	7.3
2	5.0	5.6	4.4
3	6.1	7.0	7.3
4	8.0	7.9	8.8
5	10.8	11.9	8.8
6	12.9	13.1	9.8
7 Greatest	50.1	47.9	53.6

**Table 6.6**  
**Ratings of**  
**effectiveness of drivers**  
**being re-tested after**  
**any ban**

	Percentage of CO group drivers 656 in total	Percentage of GU group drivers 1112 in total	Percentage of ex-drivers 308 in total
1 Least	5.0	5.4	5.8
2	3.5	4.4	3.9
3	5.3	6.4	5.5
4	8.4	8.3	8.8
5	11.9	12.9	9.7
6	15.5	14.6	13.0
7 Greatest	50.3	48.1	53.2

We must take into consideration the possibility that the responses of older motorists may reflect a conviction that members of their own age group are less likely to be banned from driving. On the whole, schemes involving re-testing (either on a regular basis or after a conviction or ban) received higher ratings for effectiveness than for acceptability. Schemes involving assessment, with no implications that driving would necessarily be curtailed, tended to produce very similar ratings on both scales.

**Curiously both drivers and ex-drivers rated provision of a ‘do it yourself kit’ which might allow drivers to test their own vision, speed of reaction time, etc, as being unacceptable. Since, at first sight, this seems a harmless and minimally intrusive measure, it is likely that their opposition stemmed from the view that it was also likely to be ineffective. (compare the very similar patterns of ratings for acceptability and effectiveness given in Tables 6.7 and 6.8). The complete statement read: “A ‘do it yourself’ test kit should be made available so that drivers can test themselves for the important basics of driving ability (eg vision, mental quickness etc) and obtain appropriate information which would indicate whether there is any need to seek further professional advice about their driving future”. This pattern of responses again emphasises that ratings of the relative “acceptability” of measures do tend strongly to reflect opinions about their likely effectiveness in practice.**

**Table 6.7**  
**Ratings of**  
**acceptability of**  
**self-testing kit**

	Percentage of CO group drivers 649 in total	Percentage of GU group drivers 1114 in total	Percentage of ex-drivers 306 in total
1 Least	30.5	23.1	28.1
2	9.6	9.9	9.8
3	7.4	7.9	10.1
4	8.0	9.9	10.5
5	9.1	11.0	9.8
6	10.0	9.5	8.2
7 Greatest	25.4	28.8	23.5

## When and why older drivers give up driving

**Table 6.8**  
Ratings of effectiveness of self-testing kit

	Percentage of CO group drivers 647 in total	Percentage of GU group drivers 1103 in total	Percentage of ex-drivers 293 in total
1 Least	33.5	28.2	27.6
2	11.9	14.8	14.0
3	12.4	13.4	10.9
4	11.6	11.4	11.9
5	10.4	11.4	11.3
6	5.9	6.6	6.8
7 Greatest	14.4	14.1	17.4

## 6.4 Relative acceptability of different sources of advice on driving behaviour

It is clear from these ratings that, in general, respondents feel that there are real problems to be addressed in terms of ensuring the safety of older drivers. **The imposition of legal obligations on drivers, or on GPs and opticians, to report conditions that might make driving hazardous is seen both as acceptable and as likely to be effective.** A more gentle procedure might be to urge older people to seek, and carefully consider advice to modify their driving habits or even to give up driving. To assess the relative acceptability of different sources of advice the questionnaire asked respondents to rate on a seven point scale from 1 = not influential to 7 = extremely influential, what they would consider would be the relative impact on them of advice to give up driving from their GP, their optician, from their family and friends, from the DVLA, from the Police and from a Law Court. Average ratings are given in Table 6.9.

**Table 6.9**  
Response in respect of acceptability of advice from different sources

Source	Mean rating	Percentage of respondents rating as low influence	Percentage of respondents rating as high influence
GP	6.17	8.6	49.64
Optician	6.05	9.8	58.25
Family	4.19	34.64	25.83
Police	5.26	21.15	58.05
DVLA	4.60	33.28	46.33
Court	5.49	20.27	61.14
Other	6.06	8.14	77.01

Unsurprisingly advice from the Police, from Courts or from the DVLA tends to be taken very seriously. Evidently such "advice" may imply the possibility of future sanctions if it is ignored. Advice from GPs and opticians is rated highly. Other sources of advice not specified on the questionnaire are, also, considered to be very influential. In most cases respondents identified the source of such "other" advice as a close friend.

Most respondents do not seem to rate advice from members of their own families very highly. This is, perhaps, a source of concern if it means that advice from individuals who are likely to have the greatest experience of the driving habits and skills of elderly motorists is the most likely to be disregarded.

## Chapter 7 Summary and Conclusions

Older people are involved in many fewer accidents than young adults but in more accidents than the middle aged. To discover some of the characteristics of older drivers, the problems that they face, and the factors that make them eventually retire from driving we gave a driving questionnaire and the abbreviated Cornell Medical Index to 2134 people, 55 percent of whom were men (mean age 71.4 years) and 45 percent of whom were women, (mean age 68.4 years). Of these 1795 were still driving – mean age 70.5 years – and 339 had given up driving – mean age 76.7.

More responding drivers than ex-drivers live in suburban and rural areas. Drivers tend to be from slightly more prosperous socio-economic groups: It is likely that differences in levels of income and entailed differences in options of location of residence and lifestyle may affect timing of the decision to give up driving. The average age at which ex-drivers had given up was 72.1 years. Current drivers produced an average intended age of giving up of 79.3 years. Both in terms of their estimated age of giving up driving and the period of time for which they will then have driven current drivers' expectations exceeded the reality experienced by the ex-drivers. However most ex-drivers strongly disagreed that they had continued driving too long before giving up.

In terms of Cornell Medical Index scores ex-drivers, who were older, also reported more health problems than drivers but all respondents were relatively more healthy than their age peers in the population at large. The most frequently reported health problems were with vision but an encouraging point is that 83% of all drivers also reported that they had visited an optician for an eye check during the last two years and the mean estimated time since a last visit to an optician was 1.3 years.

Psychological problems were neither frequent nor serious and Cornell scores were broadly consistent with the benevolent stereotype of the "older motorist" as a relatively calm and stable person, with slight, but not excessive, concerns about personal competence – quite desirable characteristics from the point of view of road safety.

For ex-drivers modal ages for beginning to drive were between 40 and 55. For drivers the modal ages for beginning to drive were between 16 and 25 years for men and between 30 and 40 for women – a gap of 15 years. Women typically began to drive much later than men but trends in the data suggest that this difference will disappear over the next 20 years and that actuarial and other trends will eventually have the effect that the majority of older drivers will be women. Extrapolation from these data suggest a significant future trend for both men and women to learn to drive earlier. The data also suggest that both men and women who have learned to drive at a younger age also tend to continue driving until relatively late in life. We may expect that longer survival of both men and women, increased car ownership, and generally prolonged driving careers, will result in a marked increase in the number of older people, especially women, who are capable of driving, who have been used to driving for all of their adult lives, who have developed life-styles which heavily depend on driving and who will, therefore, strongly wish to continue.

About a third of respondents who are still driving say that they intend to carry on driving until obliged to stop by circumstances which are both beyond their control and unforeseeable at present. This CO (carry on) group differs in terms of demographical and personal characteristics both from those current drivers who are willing to estimate a particular date for giving up driving (the GU group) and from ex-drivers. The CO group include equal numbers of men and women. Compared to GU drivers CO group drivers are slightly but significantly older, better off, and report fewer health problems. The older ex-drivers report more health problems than either group of current drivers.

### ***When and why older drivers give up driving***

CO group drivers estimate slightly higher average weekly mileages than GU group drivers over the last three years (152.4 as against 138.5). However over the last three years estimated average weekly mileage steadily reduces at the same rate, about 50 miles a week, for CO and GU group drivers. Both CO and GU group drivers report higher mileages during the last three years than ex-drivers report for the three years before they gave up driving. The CO group includes more individuals with advanced driving qualifications. CO group drivers report fewer convictions for driving offences, fewer road accidents and fewer minor mishaps. They also report fewer difficulties in particular, stressful driving situations and less difficulty with externally imposed stresses such as poor lighting and weather conditions. It seems likely that, in spite of their slightly greater average age, CO group drivers are rather more experienced and skilful than GU drivers. There is no indication that CO and GU groups differ in their needs to own and use a car, or in the extent of their social life or their ease of access to friends and relatives. However, not surprisingly, individuals who are unwilling to predict a particular date for giving up driving do report somewhat greater dependence on car ownership.

Respondents rated their current levels of driving ability; ex-drivers were the least confident, and CO group drivers the most confident of their current ability. Rank orders of perceived difficulties of particular driving problems were highly consistent across rather different self-rating scales and groups of respondents. While over 20% of ex-drivers reported some loss of competence in each of 14 driving situations investigated, only 4% to 6% of all those still driving reported noticing any change over the last three years. In descending order of rated severity problems were declining vision in low illumination, maintaining alertness over long periods of time, glare, dividing attention between two or more concurrent tasks and increased difficulty with parking. It is noteworthy that older drivers gave low ratings to failures highlighted in the Road Research literature as characteristic of "elderly accidents", notably inefficiency in judging speed of oncoming traffic, judging gaps in traffic and the ability to make fast decisions when pulling out into traffic or crossing a traffic stream. This, and other evidence makes it likely that self-ratings do not pick up insidious problems which provide no immediate feedback and so remain unrecognised. However where objective data are available, rating scales have the unique advantage that they can highlight situations, as in the present case, in which individuals may remain aware of growing difficulties that provide them with little immediate or compelling feedback and so may escalate without drawing themselves to awareness.

Both drivers and ex-drivers tend strongly to support statements that place responsibility for accidents with drivers. Differences in attributions of responsibility by drivers and ex-drivers are not significant. The bias towards acceptance of driver responsibility for safety is so strong that it could hardly be more marked in any younger sample. Thus the results make the point that older drivers and ex-drivers accept, and take seriously, their personal responsibility for road safety.

Older drivers are relatively unconcerned about car ownership as an adjunct to their images. However both drivers and ex-drivers, though understandably more particularly drivers, perceive and value possession of a car as an aid to independence and mobility.

The financial burden of a car is clearly perceived, most especially by those who have given up driving. Most older people who still drive do not think that car ownership increases, rather than relieves, unwanted trouble but those who have experienced giving up driving seem significantly more convinced of the advantages of relinquishing car ownership.

An overwhelming concern of people who currently drive is the loss of mobility and independence that giving up a car will entail. This is still a dominant issue for those who are now without a car, though many ex-drivers seem to have adapted quite

### ***Summary and Conclusions***

successfully. Many car-owners express anxiety about the poor quality of public transport services, perhaps because more of them live in rural or suburban areas where this is indeed a problem. This anxiety seems to be based in reality because 50% of those individuals who have given up driving feel public transport to be, at least in some measure, inadequate. The provision of adequate public transport is an extremely important factor in mitigating the widely expressed fears of loss of independence and mobility.

Respondents were polled on the relative acceptability and likely effectiveness of proposals that might increase regulation of driving by older people, and by traffic offenders. The proposals found most acceptable, in descending rank order, were that : drivers should themselves be responsible for informing the DVLA of medical conditions that might interfere with their driving; that information booklets should be provided for the guidance of older drivers; that drivers should be re-tested after any ban; that GPs (and, with less emphasis, opticians) should be required to inform DVLA of any conditions that might interfere with their patients' driving competence; that drivers should be re-assessed after any ban and that the police should have the powers to make anyone displaying risky driving behaviour to undergo re-assessment. The proposals most strongly opposed were re-testing (as distinct from re-assessment) after any accident and compulsory re-testing on a ten or a five year cycle after age 60.

Judged as most effective was the sanction of re-testing after every ban. Also seen as effective were impositions of obligations on drivers themselves, and on GPs and opticians to inform the DVLA of conditions likely to interfere with driving competence, and compulsory re-assessment after any ban .

Respondents' ages and socio-economic status did have some effects on their perceptions of the acceptability of proposals but there were more marked differences between current drivers, who were relatively cautious about proposals involving introduction of sanctions, and ex-drivers, who took a harder line towards their imposition.

Advice on driving behaviour was rated very differently according to the source from which it came. Respondents said that they would take very seriously advice from the Police, from Courts or from the DVLA. Evidently such "advice" may imply the possibility of future sanctions if it is ignored. Advice from GPs and opticians was also rated as being taken very seriously, as was advice from "valued others" such as a close friend. In contrast, advice from family members was relatively discounted. This is, perhaps, disquieting if it implies that elderly motorists are likely to disregard advice from precisely those individuals who are likely to have the greatest experience of their driving competence.

## Chapter 8 References

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## Chapter 9 Acknowledgements

The authors wish to thank all those respondents who took the time and effort to complete the lengthy questionnaires involved with this research which was funded by the AA Foundation for Road Safety Research. Without their help the knowledge gained by this research would have been severely restricted on a topic which will become increasingly important as the age profile of the driving and "having driven" population of the UK alters.

The authors acknowledge with gratitude the valuable discussions they had with Miss Barbara Sabey, Technical Advisor to the AA Foundation, and her excellent advice and meticulous editorial readings of drafts of this paper. They also greatly appreciate the many comments and editorial vigilance of Mr Brian Langer, manager of the AA Foundation. The heavy task of data entry was impeccably carried out by Ms Linda Hazel.

We also acknowledge the authorisation to use an abbreviated version of the Cornell Medical Index health questionnaire.

# Appendix A – Sample Driving Questionnaire

Today's date	...../...../.....	Date of birth	...../...../.....
Date you last drove	...../...../.....	Sex	<b>MALE</b> <b>FEMALE</b>
Please indicate with a tick the kind of area you live in (please tick one only).			
<b>City</b>	<input type="checkbox"/>	<b>Town</b>	<input type="checkbox"/>
<b>Suburban</b>	<input type="checkbox"/>	<b>Rural</b>	<input type="checkbox"/>
<b>Other</b>	<input type="checkbox"/>	(please describe).....	

For how many years were you in <u>full time</u> education?
<b>Years of education</b> .....

What is your occupation (or your most recent occupation if you are presently unemployed or retired)?
<b>Occupation</b> .....
Are you presently involved in any activity or work (either paid or voluntary) for which the use of your own car would be preferable?
<b>Yes</b> <b>No</b>

Did you take an initial driving test?	<b>Yes</b>	<b>No</b>
If <b>Yes</b> in which year did you pass your test?		.....
If <b>No</b> in which year did you start driving regularly?		.....
How many times did you take the test until you were successful?		.....

Was the test you took for cars with automatic or manual gears?	<b>Manual</b>	<b>Automatic</b>
If <b>Automatic</b> have you since changed your licence for manual?	<b>Yes</b>	<b>No</b>
		Year.....
If <b>Manual</b> have you since started driving automatic vehicles?	<b>Yes</b>	<b>No</b>
		Year.....

Do/Did you share the driving of your car with anyone else? (Please circle one.)
<b>Often</b> <b>Sometimes</b> <b>Rarely</b>

Have you ever driven professionally? (eg taxi, lorry driver etc)	<b>Yes</b>	<b>No</b>
If <b>Yes</b> , describe the job and the number of years you did it for.		
<b>Type of driving</b> .....	<b>Number of Years</b> .....	



**When and why older drivers give up driving**

Have you taken any further driving qualifications? (eg Advanced Driving or Heavy Goods etc.) Please list the tests taken below and indicate for each whether you passed or failed.

TEST TAKEN	YEAR	Pass/Fail
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

(Please continue on the back of this sheet if necessary)

Please give the date and description of any convictions you have received for driving offences within the last **ten** years (or your last ten of driving, if you have given up).

YEAR	DESCRIPTION OF OFFENCE
.....	.....
.....	.....
.....	.....
.....	.....

(Please continue on the back of this sheet if necessary)

Please indicate (with a tick) any types of vehicle other than cars which you have driven more than just occasionally (and estimate the overall mileage driven in each case).

<b>Motorcycles and Mopeds</b>	<input type="checkbox"/> .....	<b>3 wheel cars and vans</b>	<input type="checkbox"/> .....
<b>Large, 4 wheelers eg vans and mini-buses</b>	<input type="checkbox"/> .....	<b>Very large vehicles eg lorries and buses</b>	<input type="checkbox"/> .....
<b>Heavy plant vehicles eg tractors and diggers</b>	<input type="checkbox"/> .....	<b>Other.....</b>	<input type="checkbox"/> .....
		(please describe)	

Please estimate roughly how many different motor vehicles you have driven in your life (ie include every different car, van etc, you have ever driven). .....

Please estimate the number of miles you have driven in countries which drive on the right-hand side of the road. ....

Please estimate the number of miles you have driven in competitive sports (eg rallying etc). .....

**Appendix A**

In this section you will see some questions about various aspects of your driving and how they may have changed in recent years. Each question requires two answers each relating to the two most recent blocks of three years in your driving history. If you still drive that simply means that answers to the **Previously** part should cover the period ranging from six years to three years ago and **Last three years** from three years ago to the present day. If you have given up, **Last three years** means your last three years of driving and **Previously** the three year period before that.

---

Please estimate your overall *weekly* mileage?

**Previously** ..... **Last three years** .....

---

Please estimate your *annual* mileage for towing a trailer or caravan?

**Previously** ..... **Last three years** .....

---

How many road accidents have you been involved in?

**Previously** ..... **Last three years** .....

---

Not counting serious accidents how many minor mishaps have you had while driving (eg backing into gate post etc)?

**Previously** ..... **Last three years** .....

During your driving history have there been any gaps or marked reductions in your driving of more than about a month? If so, please indicate the approximate dates of the most recent of these gaps and briefly explain the reason for the gap (eg illness, no car or no need to drive etc).

Date		Reason
From	To	
..... / .....	.....	.....
..... / .....	.....	.....
..... / .....	.....	.....
..... / .....	.....	.....

(Please continue on the back of this sheet if necessary)

During your driving history have there been any periods in which you drove much more than average? If so, please indicate the approximate dates of these periods and estimate the average weekly mileage for each. Please also indicate for each whether you feel the intensive driving was imposed upon you or if it was your own choice.

Date		Approximate Weekly mileage	Choice/Imposed (please tick one)	
From	To		Choice	Imposed
..... / .....	.....	.....	Choice <input type="checkbox"/>	Imposed <input type="checkbox"/>
..... / .....	.....	.....	Choice <input type="checkbox"/>	Imposed <input type="checkbox"/>
..... / .....	.....	.....	Choice <input type="checkbox"/>	Imposed <input type="checkbox"/>
..... / .....	.....	.....	Choice <input type="checkbox"/>	Imposed <input type="checkbox"/>

(Please continue on the back of this sheet if necessary)

**When and why older drivers give up driving**

Do/Would you need to wear glasses or contact lenses for driving?	<b>Yes</b>	<b>No</b>
When was the last time you had your eyes tested?	...../...../.....	

If you take any medication at present do you feel that it impairs your concentration?	<b>Yes</b>	<b>Slightly</b>	<b>No</b>
---	------------	-----------------	-----------

When seated does stiffness make it difficult for you to look over your shoulder?	<b>Yes</b>	<b>Slightly</b>	<b>No</b>
--	------------	-----------------	-----------

Do you suffer any stiffness or weakness in your arms, back and/or legs that could affect your ability to drive?		
Stiffness	<b>Yes</b>	<b>Slightly</b> <b>No</b>
Weakness	<b>Yes</b>	<b>Slightly</b> <b>No</b>
If so, is this problem constant or intermittent?	<b>Constant</b>	<b>Intermittent</b>
If you answered <b>intermittent</b> , please briefly describe the conditions which usually bring this about.		
.....		
.....		
.....		
.....		

Do you suffer any other medical condition which you feel affects (or would affect) your ability to drive? If so, please describe the condition and its effects.
.....
.....
.....
.....

**Appendix A**

Please read the statements below, then give each a rating of what you feel your level of ability as a driver is (or would be if you still drove) **in general** by circling the appropriate phrase.

Ability to read road signs early enough to give adequate time to act upon them.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to judge gaps in traffic (for pulling out of junctions or for crossing the road).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to notice vehicles, cyclists and pedestrians out of the corner of your eye.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to see clearly in very low light conditions.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to see clearly in very bright light conditions.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to make decisions quickly (eg when to pull out into traffic or when to cross the road through traffic).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to react quickly (eg braking in an emergency or avoiding unexpected traffic).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to navigate efficiently through an unknown area.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to follow from memory a route driven/walked only once previously (or the return part of a unfamiliar outward journey).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to stay alert for long periods.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to recognise when your attention has wandered from your primary task (eg driving or reading).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to judge speed of oncoming traffic.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to divide your attention between two different tasks (eg talking to someone while driving).	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>
Ability to reverse park in an awkward or confined space.	<b>Very Good</b>	<b>Good</b>	<b>Adequate</b>	<b>Poor</b>	<b>Very Poor</b>

*When and why older drivers give up driving*

For each statement below, please rate your level of ability in relation to the majority of other people of your age by circling the appropriate phrase.

Ability to read road signs early enough to give adequate time to act upon them.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to judge gaps in traffic (for pulling out of junctions or for crossing the road).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to notice vehicles, cyclists and pedestrians out of the corner of your eye.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to see clearly in very low light conditions.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to see clearly in very bright light conditions.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to make decisions quickly (eg when to pull out into traffic or when to cross the road through traffic).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to react quickly (eg braking in an emergency or avoiding unexpected traffic).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to navigate efficiently through an unknown area.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to follow from memory a route driven/walked only once previously (or the return part of a unfamiliar outward journey).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to stay alert for long periods.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to recognise when your attention has wandered from your primary task (eg driving or reading).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to judge speed of oncoming traffic.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to divide your attention between two different tasks (eg talking to someone while driving).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to reverse park in an awkward or confined space.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>

*Appendix A*

For each statement below, please rate your **current level of ability compared to that of three years ago** by circling the appropriate phrase.

Ability to read road signs early enough to give adequate time to act upon them.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to judge gaps in traffic (for pulling out of junctions or for crossing the road).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to notice vehicles, cyclists and pedestrians out of the corner of your eye.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to see clearly in very low light conditions.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to see clearly in very bright light conditions.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to make decisions quickly (eg when to pull out into traffic or when to cross the road through traffic).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to react quickly (eg braking in an emergency or avoiding unexpected traffic).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to navigate efficiently through an unknown area.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to follow from memory a route driven/walked only once previously (or the return part of a unfamiliar outward journey).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to stay alert for long periods.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to recognise when your attention has wandered from your primary task (eg driving or reading).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to judge speed of oncoming traffic.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to divide your attention between two different tasks (eg talking to someone while driving).	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>
Ability to reverse park in an awkward or confined space.	<b>Much Better</b>	<b>Better</b>	<b>Same</b>	<b>Worse</b>	<b>Much Worse</b>

**When and why older drivers give up driving**

Listed below are a number of brief descriptions of common driving situations. For each one can you give a rating on the basis of how much you have driven in those situations in the last three years, compared to the three year period before that. If you have given up driving, please compare your last three years of driving with the three year period before that.

Driving at night.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving at dawn/dusk.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving in rush hours.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving on motorways.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving in bad weather.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving when tired.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving when not in best of health.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving unfamiliar vehicles.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
City centre driving.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving in an unfamiliar area.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving in country lanes.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving long distances (100+ miles).	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>
Driving when you would rather be doing something else.	<b>Much More</b>	<b>More</b>	<b>Same</b>	<b>Less</b>	<b>Much Less</b>

**Appendix A**

The next section of questions ask how often you do certain things. Please write down what you think is a good overall average of the number of times each would occur in **an average month**. We appreciate that these things probably vary from month to month but please try and indicate what you feel is your overall monthly average.

**Please Note:**

**Drivers** – answers to the **Previously** part should cover the period from six years to three years ago and **Last three years** from three years ago to the present day.

**Ex-Drivers** – answers for **Last three years** should be the three year period immediately before you stop driving and **Previously** the three year period before that.

How often do you use public transport?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do you use taxis?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do you use a self-drive rental car?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do you get lifts in the cars of family or friends?	<b>Previously</b> .....	<b>Last three years</b> .....
How often does a family member or friend drive you somewhere in your car?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do you walk further than 'just around the corner'?	<b>Previously</b> .....	<b>Last three years</b> .....
How many road accidents have you witnessed (but not been directly involved in)?	<b>Previously</b> .....	<b>Last three years</b> .....
How many road accidents are you aware of which have involved someone that you know?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do you visit friends or relatives at their homes?	<b>Previously</b> .....	<b>Last three years</b> .....
How often do your friends or relatives visit you at your home?	<b>Previously</b> .....	<b>Last three years</b> .....
How often are you on the telephone with friends or relatives?	<b>Previously</b> .....	<b>Last three years</b> .....



*When and why older drivers give up driving*

Please read the following statements carefully and indicate how much you agree or disagree with each by circling the appropriate phrase.

It is difficult to prevent accidents in bad conditions such as darkness or rain.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Travelling by car is more expensive than travelling by public transport.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
A car is an important status symbol.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Accidents are often caused by drivers not paying full attention to their driving.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Most accidents are due to pedestrians not following the rules of the road.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
It would be better altogether if there were fewer cars on the roads.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Accidents are mainly due to various unpredictable events.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Driving enhances a persons independence.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Most accidents are the result of driver error.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Driving is vitally important to most people today.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
A careful driver can prevent most accidents.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
People should be free to continue driving whatever their age, so long as they can demonstrate adequate driving ability if called upon to do so.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Driving with no accidents is mainly a matter of luck.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Most accidents are caused by inexperienced drivers.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>

*Appendix A*

Anyone who continues to drive after the age of about seventy puts both themselves and others at risk.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
People should be free to continue driving whatever their age, so long as they feel confident about their own driving ability.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Without a car older people are at greater risk of being victims of violence.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did restrict my mobility.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did limit my independence.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did save me a lot of money.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did mean letting down people who rely on me.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did cause me difficulties due to unsuitable public transport.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did limit my ability to make even the shortest journeys.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did relieve me of unwanted responsibility.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving will/did simplify my life.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
Giving up driving is not an option for someone who cares for a mobility impaired spouse or relative.	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>

**When and why older drivers give up driving**

Below is a list of brief descriptions of possible methods for maintaining good levels of safety among an ageing driver population. We would like you to give each of the described methods two ratings.

Once you have read all of the descriptions carefully go through each and first give them a number from 1–7 based on how acceptable you personally feel that method would be (where 1=totally unacceptable and 7=very acceptable).

Then give another rating from 1–7 based on how effective you feel each method would be in monitoring the safety of the driving population, regardless of your personal feelings of its acceptability (where 1=totally ineffective and 7=very effective).

You will also notice that some of the methods described are identical except for the words 're-tested' and 'assessed'. The important distinction between these phrases lies in the outcome of the test or assessment. That is to say, a system involving 're-tests' would mean that to fail would result in loss of licence and/or a requirement for retraining. Whereas, 'assessment' would mean the driver being given feedback and advice about their driving ability, upon which it is solely the drivers responsibility to act.

	ACCEPTABILITY	EFFECTIVENESS
The testing and licensing system that is in existence now.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be re-tested every ten years after passing their first test.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be re-tested every five years after the age of 60.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be re-tested after any accident.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be re-tested after any ban.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be re-tested after any driving conviction.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be assessed every ten years after passing their first test.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be assessed every five years after the age of 60.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be assessed after every accident.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be assessed after any ban.	<input type="checkbox"/>	<input type="checkbox"/>

**Appendix A**

	ACCEPTABILITY	EFFECTIVENESS
Drivers should be assessed after any driving conviction.	<input type="checkbox"/>	<input type="checkbox"/>
Driving assessments should be readily available but when and how often they are used is the sole responsibility of the driver.	<input type="checkbox"/>	<input type="checkbox"/>
Drivers should be required to undergo a full medical examination at the age of around 60 years.	<input type="checkbox"/>	<input type="checkbox"/>
Opticians should be required to inform the Driver and Vehicle Licensing Authority (DVLA) of any condition that may affect a patient's ability to drive.	<input type="checkbox"/>	<input type="checkbox"/>
GPs should be required to inform DVLA of any medical condition that may affect a patients ability to drive.	<input type="checkbox"/>	<input type="checkbox"/>
The driver themselves should be required to inform DVLA of any medical condition they have which may affect their ability to drive.	<input type="checkbox"/>	<input type="checkbox"/>
The Police should have the power to compel anyone displaying risky behaviour on the roads to undergo a re-test.	<input type="checkbox"/>	<input type="checkbox"/>
The Police should have the power to compel anyone displaying risky behaviour on the roads to undergo an assessment.	<input type="checkbox"/>	<input type="checkbox"/>
A licensing system should be introduced which can more flexibly limit various aspects of everyone's driving with regard to their health, ability and driving record.	<input type="checkbox"/>	<input type="checkbox"/>
A 'do it yourself' test kit should be made available so that drivers can test themselves for the important basics of driving ability (eg vision, mental quickness etc) and obtain appropriate information which would indicate whether there is any need to seek further professional advice about their driving future.	<input type="checkbox"/>	<input type="checkbox"/>
Information (eg booklets, courses etc) should be made available so that drivers can obtain general advice about common issues for older drivers such as the relationship between changing ability and changing driving habits.	<input type="checkbox"/>	<input type="checkbox"/>

**When and why older drivers give up driving**

In the next two sections you will be asked to give ratings to very broad categories of reasons why people may stop driving, and of groups of people and institutions who may advise older drivers about stopping driving. As these categories are very broad we hope that everyone will be able to give each a rating. However, if you think of something that does not fit well into these categories feel free to use the 'Other' section if it seems more appropriate.

Please give a rating (1–7) for each type of reason based on its importance if you were deciding to stop driving (where 7 = extremely important and 1 = not important). If necessary add another general reason that you feel may play a role and give it a rating.

Financial/Economical

Accident/Safety

Medical/Ability

Personal/Social

Other (please specify) .....

Please give a rating (1–7) for how influential you feel advice from each of these groups to give up driving would be to you (where 7 = extremely influential and 1 = not influential). If necessary add another group which influenced you and give it a rating.

General Practitioner

Optician

Family/Friends

Police

DVLA

Law Court

Other (please specify) .....

**PLEASE NOTE**

Whether you are a current driver or have given up driving you should have answered all of the questions in the questionnaire so far. However the last section of the questionnaire is divided into two parts, one for drivers and one for ex-drivers.

**Current drivers:** Please fill in section A (and ignore section B).

**Ex-drivers:** Please fill in section B (and ignore section A).

# Section A

## CURRENT DRIVERS

How long do you expect to keep driving? .....
Have you ever considered giving up driving before? <b>Yes</b> <b>No</b>
If <b>Yes</b> , how many times? .....

Please indicate by ticking the appropriate box whether you are considering the possibility of giving up driving or if you intend to continue driving for the foreseeable future.

**Thinking of giving up**                            **Continuing to drive**     

---

If you ticked the **Thinking of giving up** box, can you tell us as accurately as you can how long you have been thinking about it?

**Years**.....      **Months**.....      **Weeks**.....      **Days**.....

We would like you to use the space below to tell us a bit about your views of your driving future.

If you ticked the **Thinking of giving up** box, can you tell us what you see as the most important issue involved in your decision to give up driving.

If you ticked the **Continuing to drive** box, can you tell us what you see as the most important reason you continue to drive.

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## Section B

### EX-DRIVERS

If there was a specific incident that made you decide to stop driving immediately can you briefly explain what happened and indicate whether the incident demonstrated the potential of a risk factor for you or whether it was an actual occurrence of it.

(Please circle one)

**Actual**

**Potential**

.....

.....

.....

Do you still hold a valid driving licence?	<b>Yes</b>	<b>No</b>
Has your driving licence expired?	<b>Yes</b>	<b>No</b>
Have you returned your driving licence to the DVLA?	<b>Yes</b>	<b>No</b>

Rather than your own decision, circumstances outside of your control made you give up driving.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

It was a series of decisions which led to a gradual reduction in driving until eventually you gave up.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

It was a case of deciding not to start again after an extended period of not driving.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

You think that you continued driving longer than perhaps you should have done.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

You started limiting the situations in which you drove in preparation for giving up.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

You started limiting the amount you drove in preparation for giving up.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

The availability of public transport made it easy for you to give up driving.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

You now regret giving up driving as early as you did.

**Strongly Agree**    **Slightly Agree**    **Neutral**    **Slightly Disagree**    **Strongly Disagree**

Section B continues on next sheet.

## Section B continued

Had you previously considered giving up driving before you actually did?	<b>Yes</b>	<b>No</b>
If <b>Yes</b> , how many times?		.....

Now that you have answered our questions about giving up driving can you briefly explain in your own words what you feel the main reason is you gave up.
.....
.....
.....
.....



# Appendix B – Cornell Medical Index (CMI) Health Questionnaire – (abbreviated version)

Name:

Age:

## Directions:

If you can answer YES to the question asked, put a circle around the Yes.  
If you can answer No to the question asked, put a circle around the No.  
Answer all questions. If you are not sure, guess.

## Section 1

Do you need glasses to read?	Yes	No
Do you need glasses to see things at a distance?	Yes	No
Has your eyesight ever blacked out completely?	Yes	No
Do your eyes continually blink or water?	Yes	No
Do you often have bad pains in your eyes?	Yes	No
Do you have Glaucoma?	Yes	No
Do you have Cataracts?	Yes	No
Are your eyes often red or inflamed?	Yes	No
Are you hard of hearing?	Yes	No
Have you ever had a bad running ear?	Yes	No
Do you have constant noises in your ears?	Yes	No

## Section 2

Has a doctor ever said your blood pressure was too high?	Yes	No
Has a doctor ever said your blood pressure was too low?	Yes	No
Do you have pains in the heart or chest?	Yes	No
Are you often bothered by thumping of the heart?	Yes	No
Does your heart often race like mad?	Yes	No
Have you ever had a heart attack?	Yes	No
Do you often have difficulty breathing?	Yes	No
Do you get out of breath long before anyone else?	Yes	No
Do you sometimes get out of breath just sitting still?	Yes	No
Are your ankles often badly swollen?	Yes	No
Do cold hands or feet trouble you even in hot weather?	Yes	No
Do you suffer from frequent cramps in your legs?	Yes	No
Has your doctor ever said you had heart trouble?	Yes	No
Does heart trouble run in your family?	Yes	No
Do you suffer from any circulatory problems?	Yes	No

## ***When and why older drivers give up driving***

### **Section 3**

Are your joints often painfully swollen?	Yes	No
Do your muscles and joints constantly feel stiff?	Yes	No
Do you usually have severe pains in the arms or legs?	Yes	No
Are you crippled with severe rheumatism/arthritis?	Yes	No
Does rheumatism/arthritis run in your family?	Yes	No
Do weak or painful feet make your life miserable?	Yes	No
Do pains in the back make it hard for you to keep up with your work?	Yes	No
Are you troubled with a serious bodily disability or deformity?	Yes	No
Do you suffer from Osteoporosis?	Yes	No

### **Section 4**

Do you usually have great difficulty in falling asleep or staying asleep?	Yes	No
Do you find it impossible to take a regular rest period each day?	Yes	No
Do you find it impossible to take regular daily exercise?	Yes	No
Do you smoke?	Yes	No
Do you smoke more than 20 cigarettes a day?	Yes	No
Do you drink more than six cups of coffee or tea a day?	Yes	No
Do you usually take two or more alcoholic drinks a day?	Yes	No

### **Section 5**

Do you sweat or tremble a lot during examinations or questioning?	Yes	No
Do you get nervous and shaky when approached by a superior?	Yes	No
Does your work fall to pieces when someone is watching you?	Yes	No
Does your thinking get completely mixed up when you have to do things quickly?	Yes	No
Must you do things very slowly in order to do them without mistakes?	Yes	No
Do you always get directions and orders wrong?	Yes	No
Do strange people or places make you afraid?	Yes	No
Are you scared to be alone when there are no friends near you?	Yes	No
Is it always hard for you to make up your mind?	Yes	No
Do you wish you always had someone at your side to advise you?	Yes	No
Are you considered a clumsy person?	Yes	No
Does it bother you to eat anywhere except in your own home?	Yes	No

## **Appendix B**

### **Section 6**

Do you feel alone and sad at a party?	Yes	No
Do you usually feel unhappy and depressed?	Yes	No
Do you often cry?	Yes	No
Are you always miserable and blue?	Yes	No
Does life look entirely hopeless?	Yes	No
Do you often wish you were dead and away from it all?	Yes	No

### **Section 7**

Does worrying continually get you down?	Yes	No
Does worrying run in your family?	Yes	No
Does every little thing get on your nerves and wear you out?	Yes	No
Are you considered a nervous person?	Yes	No
Does nervousness run in your family?	Yes	No
Did you ever have a nervous breakdown?	Yes	No
Did anyone in your family ever have a nervous breakdown?	Yes	No
Were you ever a patient in a mental hospital (for your nerves)?	Yes	No
Was anyone in your family ever a patient in a mental hospital (for their nerves)?	Yes	No

### **Section 8**

Are you extremely shy or sensitive?	Yes	No
Do you come from a shy or sensitive family?	Yes	No
Are your feelings easily hurt?	Yes	No
Does criticism always upset you?	Yes	No
Are you considered a touchy person?	Yes	No
Do people usually misunderstand you?	Yes	No

### **Section 9**

Do you have to be on your guard even with friends?	Yes	No
Do you always do things on sudden impulse?	Yes	No
Are you easily upset or irritated?	Yes	No
Do you go to pieces if you don't constantly control yourself?	Yes	No
Do little annoyances get on your nerves and make you angry?	Yes	No
Does it make you angry to have anyone tell you what to do?	Yes	No
Do people often annoy and irritate you?	Yes	No
Do you flare up in anger if you can't have what you want right away?	Yes	No
Do you often get into a violent rage?	Yes	No

*When and why older drivers give up driving*

**Section 10**

Do you often shake or tremble?	Yes	No
Are you constantly keyed up and jittery?	Yes	No
Do sudden noises make you jump or shake badly?	Yes	No
Do you tremble or feel weak whenever someone shouts at you?	Yes	No
Do you become scared at sudden movements or noises at night?	Yes	No
Are you often awakened out of your sleep by frightening dreams?	Yes	No
Do frightening thoughts keep coming back in your mind?	Yes	No
Do you often become suddenly scared for no good reason?	Yes	No
Do you often break out in a cold sweat?	Yes	No