



Deconstructing a gender difference: Driving cessation and personal driving history of older women

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Abstract

Problem: The purpose of this study is to understand the reasons behind older women's driving cessation by comparing the driving histories of Finnish women who either gave up or renewed their drivers license at the age of 70. **Method:** A mail survey was sent to all Finnish women born in 1927 who gave up their license in 1997 ($N=1,476$) and to a corresponding random sample of women who renewed their license ($N=1,494$). The total response rate was 42.1%. **Results:** The length and level of activity of personal driving history were strongly associated with driving cessation and continuation. Ex-drivers tended to have an inactive driving career behind them, whereas drivers had a more active personal driving history. In addition, those women with an active, "male-like" driving history who had decided to stop driving gave reasons for driving cessation that were similar to what is known about older men's reasons to give up driving. The results suggest that the decision to stop driving is related to driving habits rather than gender.

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1. Introduction

Driving cessation in older drivers has been the subject of several studies since the early 1990s (Campbell, Bush, & Hale, 1993; Chipman, Payne, & McDonough, 1998; Forrest, Bunker, Songer, Coben, & Cauley, 1997; Gallo, Rebok, & Lesikar, 1999; Hakamies-Blomqvist & Wahlström, 1998; Marattoli et al., 1993, 1997, 2000; Persson, 1993; Rabbit, Carmichael, Jones, & Holland, 1996). In these studies, a constant finding has been the distinctive gender difference in the process of driving cessation. Women drivers are more likely than men to voluntarily give up driving, at a younger age, and in better health (Gallo et al., 1999; Hakamies-Blomqvist & Wahlström, 1998; Rabbit et al., 1996). In other words, whereas men tend to keep on driving as long as their health allows them to, women give up driving for various, less pressing reasons (Hakamies-Blomqvist & Wahlström, 1998).

This gender difference has significant impact on both safety and mobility. Voluntary driving cessation of older drivers has mostly been discussed as positive behavior implying good judgment (Persson, 1993), without consid-

ering possible negative implications. Previous studies focusing on the consequences of driving cessation have, however, shown it to be related to personal mobility loss and decrease in out-of-home activities (Marattoli et al., 2000), along with increased depressive symptoms (Marattoli et al., 1997). In addition, most available alternatives for car driving are less safe for older persons (OECD, 2001). Therefore, voluntary driving cessation at a relatively early old age may indeed be problematic because it may restrict mobility without increasing safety. Since early retirement from the wheel mainly concerns older women, the underlying reasons and components for the found gender difference become essential in preventing early driving cessation and mobility loss of older women.

In social and behavioral sciences, the socially constructed nature of most gender differences is emphasized. That is, such differences are based and constructed upon the social roles and positions of genders in the social realm. Thereby they can also be deconstructed and unraveled beyond the plain term "gender." Since higher level complex behavioral patterns (e.g., driving behavior) can hardly originate to gender per se, attempts to deconstruct the concept "gender" may be especially appropriate when dealing with apparent differences between women and men in traffic. A social constructionist approach has, however, rarely been applied

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in the field of traffic research. Neither has the commonly found gender difference in driving cessation been analyzed or conceptualized any further. On the few occasions in literature when there have been attempts to explain this difference, this has been loosely done and not well anchored in relevant empirical findings. Speculative explanations have included references to, for example, psychological (Burkhardt, Berger, & McGavok, 1996) or physical (Campbell et al., 1993) differences between the genders and, implicitly, to women- and men-like driving habits (Burkhardt et al., 1996; Gallo et al., 1999).

The aim of the present study is to gain a deeper and more detailed understanding of older female drivers' driving cessation. We chose to do this in a within-gender setting by comparing women who gave up versus renewed their license at the age of 70 years. The aim was not to replicate the common gender effect finding, but rather to understand the factors that lead to an older woman voluntarily ending her driving career as opposed to sticking to her license "like a man." The study's focus was on driving habits and experience.

2. Materials and methods

A mail survey was sent to all Finnish female license holders born in 1927 who did not renew their driver's license at the age of 70 in 1997 ("ex-drivers"), and to a random sample of female license holders born in 1927 who did renew their license ("drivers"). (In Finland, driver's licenses are valid until the age of 70 years. After that, a new license has to be applied for every 5 years, after which they expire if not renewed.) The original samples, both consisting of 1,495 individuals, were drawn from the driver's license register maintained by the Finnish vehicle administration center. The register of ex-drivers was ordered as complete. However, there were 19 women in this register whose addresses were not available, and these were not included in the final sample ($N=1,476$). The register of drivers, in turn, was ordered in a random order, and the first 1,495 on the list were taken to form the sample. There was one woman in this group whose address was not available, and she was not included in the final sample ($N=1,494$). A total of 1,251 (42.1%) questionnaires were returned; 810 were completed by drivers and 441 by ex-drivers. No reminders or follow-ups were sent to those not returning the questionnaire. After the removal of incomplete answers, the following analyses are based on 1,198 cases (799 drivers; 399 ex-drivers).

Personal driving history was assessed by using questions about past and recent driving habits (including annual kilometers and the frequency of driving), the total length and extent of the driving career (years of being licensed driver, years of active driving [i.e., 6 months or more annually], and total kilometers driven), experiences while driving, and the reasons for driving cessation or license renewal.

Table 1

The means and *SD* of drivers' and ex-drivers' annual driven kilometers at different points of driving career prior to omitting the outliers

Time after licensing	Drivers (%)		Ex-drivers (%)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1–10 years	8,897	12,665	8,299	21,539
11–20 years	10,583	17,390	9,347	27,417
21–30 years	12,150	27,083	8,944	25,599
31–40 years	10,361	25,263	8,978	23,214
41–50 years	8,617	11,053	3,044	3,530

For comparisons of subgroups defined by driver status, an independent samples *t* test was used for continuous variables and Pearson's χ^2 for categorized variables.

The data of average annual kilometers at different time points of respondents' past driving career was corrected by omitting a few outlier values to control the effects large standard deviations in the analysis. The means and standard deviations for both drivers and ex-drivers prior to correction of the data are presented in Table 1. Targeting and omitting the outlier values was done by using standard scores 4 (when $n>300$), 3 (when $n=80-299$), and 2.5 (when $n<80$). A total of 16 values from drivers' data and 6 values from ex-drivers' data were omitted.

3. Results

3.1. The driving career

The drivers had been licensed as drivers longer than the ex-drivers ($M=33$ and 31 years, respectively; $t=3.05$, $p<.01$, $n=1097$). Drivers also had had more active driving careers than the ex-drivers: they had more years of driving (a minimum of 6 months) in relation to the age of their licenses ($t=16.81$, $p<.001$, $n=1148$). The average ratio (active years per licensed years) for drivers was 0.92 and for ex-drivers 0.33. Moreover, the total amount of kilometers driven per licensed years was higher for drivers ($M=7,588$, $s=7,854$) than the ex-drivers ($M=4,056$, $s=10,978$; $t=3.65$, $p<.001$, $n=899$).

3.2. Past driving habits

The respondents were asked to retrospectively report about their driving at different times in the past, that is, during the first 10 years after licensing, 11–20 years after licensing, 21–30 years after licensing, 31–40 years after licensing, and 41–50 years after licensing.

Throughout their driving history, drivers had larger annual mileages than ex-drivers (Fig. 1). The differences were statistically different at four measurement points: 11–20 years after licensing ($t=2.10$, $p<.05$, $n=672$), 21–30 years after licensing ($t=3.05$, $p<.01$, $n=590$), 31–40 years after licensing ($t=3.15$, $p<.01$, $n=385$), and 41–50 years after licensing ($t=2.62$, $p<.05$, $n=98$).

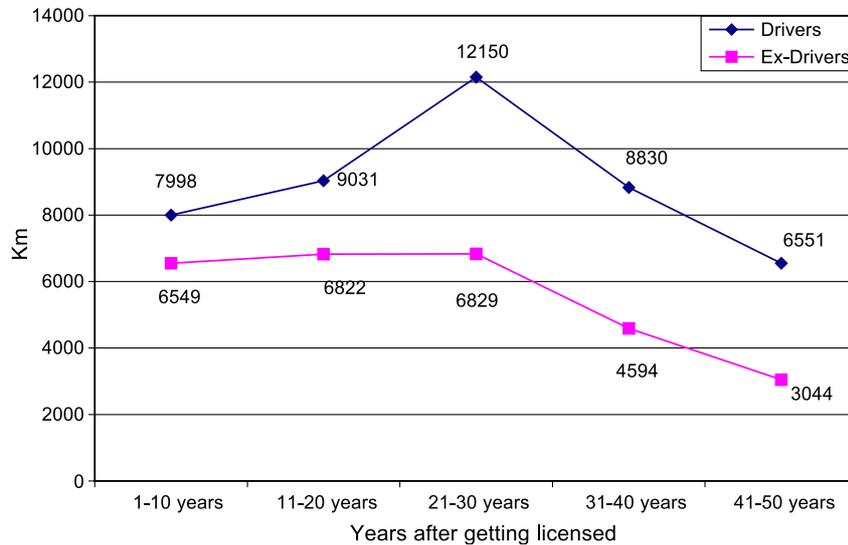


Fig. 1. Average annual kilometers driven by drivers and ex-drivers at different stages of their driving career.

Drivers had also driven more frequently throughout their driving history than ex-drivers. Table 1 displays the proportions of drivers and ex-drivers reporting driving at least once a week at different times of their driving career (Table 2).

3.3. Recent driving habits

The respondents were also asked to report on their recent driving habits. For drivers, this was defined as the last 2 years prior to the time of the study, and for ex-drivers 2 years prior to cessation.

Average distance driven for drivers was significantly larger ($M=6,700$, $s=8,300$) than for ex-drivers ($M=3,100$, $s=7,400$; $t=5.80$, $p<.001$, $n=859$). Drivers also reported more frequent driving than ex-drivers ($\chi^2=229.11$, $p<.001$, $n=1150$). Of the drivers, 70.4% reported driving a car at least once a week, as compared to 34.5% of the ex-drivers.

3.4. Experiences while driving

The respondents were asked to rate different traffic situations and road conditions on a 4-point scale with levels “heavy stress,” “moderate stress,” “negligible stress,” and “no stress.” The list of situations and conditions was used in an earlier study (Hakamies-Blomqvist & Wahlström,

1998) and it includes the following conditions: slippery roads, fatigue, night driving, competitiveness of others, rush hours, unfamiliar surroundings, long distances, overcautiousness of others, overtaking, parking/reversing, crossings, adjusting to flow, lane switching, traffic signs, highways, and merging from side road. Ex-drivers rated most of the situations and conditions more frequently as highly or moderately stressful than the drivers did (Fig. 2). In general, the stressful situations that were most frequently experienced in both groups included fatigue, slippery roads, night driving, and the competitiveness of others.

The respondents were also asked to assess how much they had been enjoying driving on a scale “very much,” “moderately,” “only little,” and “not at all.” Of drivers, 85% reported enjoying driving moderately or very much. A significantly lower share of ex-drivers (64%) reported the same ($\chi^2=59.30$, $p<.001$, $n=1149$).

3.5. Reasons for driving cessation and license renewal

Those respondents who had given up their license were presented with a list of possible reasons for driving cessation and asked to rate the importance that each reason had on their decision to give up their license. The proposed reasons were “I don’t need a car,” “My spouse chauffeurs me if needed,” “Someone else chauffeurs me if needed,” “Driving is expensive,” “Health reasons make driving difficult,” “A physician or someone else recommended me to stop driving,” and “Driving is unpleasant.” The respondents were asked to rate these reasons on a scale “not at all important reason,” “a somewhat important reason,” and “a very important reason.”

In general, the ex-drivers found most of these reasons unimportant. Most frequently rated as “not at all important” were the reasons: “A physician or someone else has recommended me to stop driving” (82.1% of the ex-driv-

Table 2

The proportion of drivers and ex-drivers reporting driving at least once a week at different times after licensing

Time after licensing	Drivers (%)	Ex-drivers (%)	Sig.
1–10 years	82.1	66.0	0.001
11–20 years	84.2	57.8	0.001
21–30 years	84.1	46.8	0.001
31–40 years	81.2	27.6	0.001
41–50 years	78.8	7.7	0.001

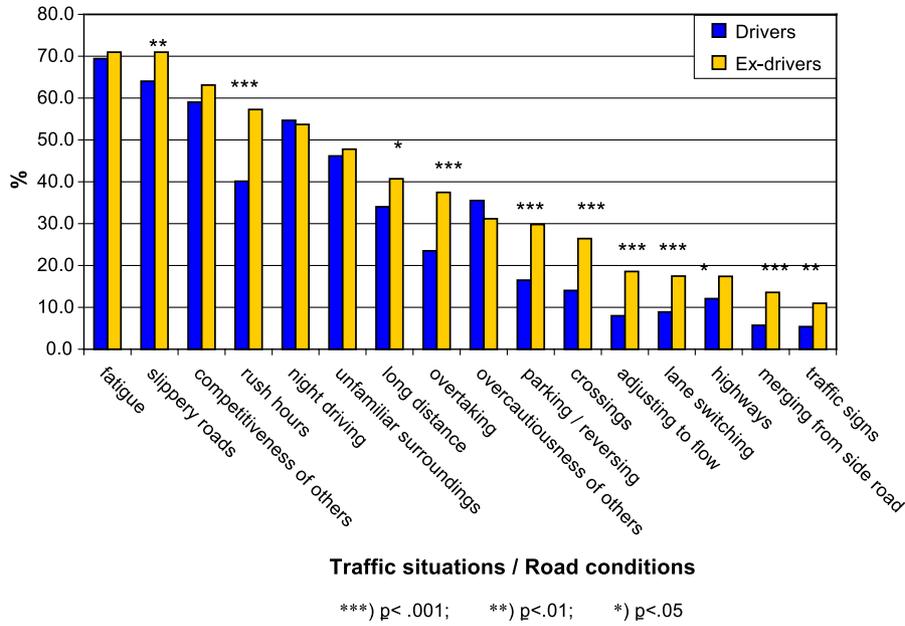


Fig. 2. The proportion of drivers and ex-drivers reporting high or moderate stress in each of the traffic situation and road condition.

ers), “driving is uncomfortable”(71.5% of the ex-drivers), and “health reasons make driving difficult” (51.4% of the ex-drivers). Only the reason “my spouse chauffeurs me if needed” was rated as very important by a majority of ex-drivers (51%).

Similarly, the respondents who had renewed their license were presented a list of possible reasons for license renewal and asked to rate the importance that each reason had had on their decision to renew the license. The proposed reasons were “Car is a necessity,” “It would be difficult without the car,” “I want to retain the option to drive,” and “I want to be independent.” The respondents were asked to rate the reasons respectively with the scale “not at all important

reason,” “a somewhat important reason,” and “a very important reason.”

In general, a majority of drivers found all these reasons very important. Most frequently rated “very important” was the reason “I want to retain the option to drive” (72% of the drivers).

3.6. The reasons for cessation by active ex-drivers

Given the strong association in both earlier literature and the present material between personal driving history and driving cessation, we were especially interested in exploring the reasons for driving cessation of those women who had

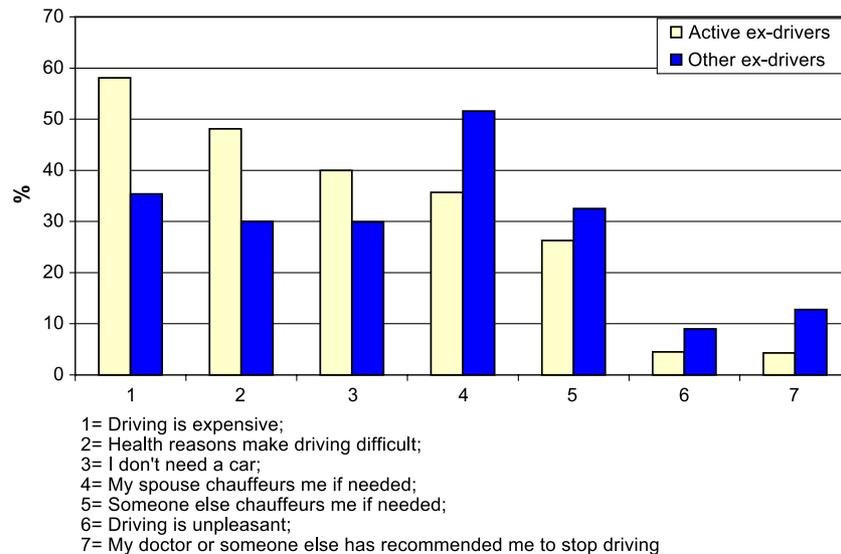


Fig. 3. The proportions of active ex-drivers and other ex-drivers who rated each of the reasons as very important.

been driving actively but had given up their license. Therefore, a subgroup of “active ex-drivers” was formed according to the following criteria. For an active ex-driver: during the whole driving career, the number of average annual kilometers had to be >4286 km (the highest 35% percentile); the number of annual kilometers during the first 10 years of driving history had to be >5000 km (the highest 35% percentile); the respondent had reported driving at least once a week during the first 10 years of driving history; and the ratio between years being licensed as driver and years of active driving was >0.75 (the highest 35% percentile). A total of 13.1% of the ex-drivers fell into this category ($n = 52$).

These active ex-drivers differed significantly from the rest of ex-drivers because their reasons for giving up their license (Fig. 3) emphasized significantly more often health-related reasons ($\chi^2 = 4.80$, $p < .030$, $n = 257$) and the expenses of car driving ($\chi^2 = 4.68$, $p < .040$, $n = 271$).

4. Discussion

On a general level, the findings of this study suggest that a long and active driving career is strongly associated with driving continuation for older women. This is in accordance with previous studies about older drivers in general (Rabbit et al., 1996).

For those women who had stopped driving, it is important to note that the reasons to do so were not generally considered important, with the one exception of having a spouse who could chauffeur them. This supports the earlier conclusion by Hakamies-Blomqvist and Wahlström (1998) that older women stop driving for more varied and less pressing reasons than older men.

However, a distinctly novel contribution of this study is showing that those ex-drivers who had an active driving career behind them, and who thus resembled in their driving history those women who had continued driving, differed from the rest of the ex-drivers by having more pressing reasons for driving cessation than ex-drivers in general. The driving cessation of women with an active driving history was closely similar to what is known about the driving cessation of men (Hakamies-Blomqvist & Wahlström, 1998). The finding strongly suggests that while strongly correlated with gender, the decision about driving cessation is related to personal driving history rather than gender per se.

The present study's strength is that it is a population study (i.e., the sample consisted of all female Finnish ex-drivers who gave up their license at age 70 in the year 1997, and a corresponding random sample of women in the same cohort renewing their license). The main source of bias thus is possible selective drop-out of certain subgroups. The response rate for drivers was acceptable (53%), but for ex-drivers low (27%); therefore, the problem of drop-out mostly pertains to the group of ex-drivers. It is reasonable to assume that the group of ex-drivers may have had a

higher prevalence of serious health problems than those still driving. It is also possible that ex-drivers were less motivated to participate in the study. All data considered, we do not feel that these reasons for drop-out are likely to produce a selective bias that could threaten our conclusions.

The results of this study put into question certain cohort-related optimism regarding gender differences in driving. Based on the fact that in most western countries, gender differences in licensing rates have almost disappeared, it has been suggested that older women in future cohorts will spontaneously keep their drivers licenses up to a higher age than those of today (Burkhardt et al., 1996; Rabbit et al., 1996). With women's increased independence, their driving is also thought to increase (see Spain, 1997). Thus, part of the gender mobility problem would gradually be solved by the natural course of things. However, the present findings suggest that this will not be the case unless women acquire more “male-like” driving habits.

At present, there are still barriers for a spontaneous change toward equity in driving. Interestingly enough, even in younger cohorts, women still drive less than men, despite being equally often licensed drivers (e.g., Polk, 1996; Rosenbloom, 1995). In Sweden, an observation study revealed that when a man and a woman were traveling together in a private car, in 89% of the cases, it was the man who was behind the wheel (Cedersund, 1990). Obviously, there are persistent social factors perpetuating the gender difference in driving and, as a consequence of this, in driving cessation. Because of these underlying social factors, it would be naive to claim that it is simply a matter of an individual decision to have an active driving career in order to prevent mobility loss in old age. If premature driving cessation and the ensuing mobility in older women is considered a societal problem, then women's driving should be encouraged by societal actions during the entire life course. As a corollary to this statement, more research is needed to explore the social factors surrounding women's driving behavior during each stage of their life.

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