Les 26e Entretiens du Centre Jacques Cartier

Les Aînés et la Sécurité routière

LYON 26 et 27 novembre 2013

Partenaires de l'événement

LE CENTRE JACQUES CARTIER

IFSTTAR

RHÔNE LE DÉPARTEMENT

DÉCENNIE D'ACTION POUR LA SÉCURITÉ ROUTIÈRE 2011-2020

SÉCURITÉ ROUTIÈRE TOUS RESPONSABLES

Service public fédéral Mobilité et Transports
Mobilité et Sécurité routière

CIRRELT

RÉSEAU DE RECHERCHE EN SÉCURITÉ ROUTIÈRE

BIVV-IBSR

Québec
- Ministère des Transports
- Société de l'assurance automobile

Ageing and Transportation: Challenges and Opportunities

Liisa Hakamies-Blomqvist
SLS
Finland

n

a

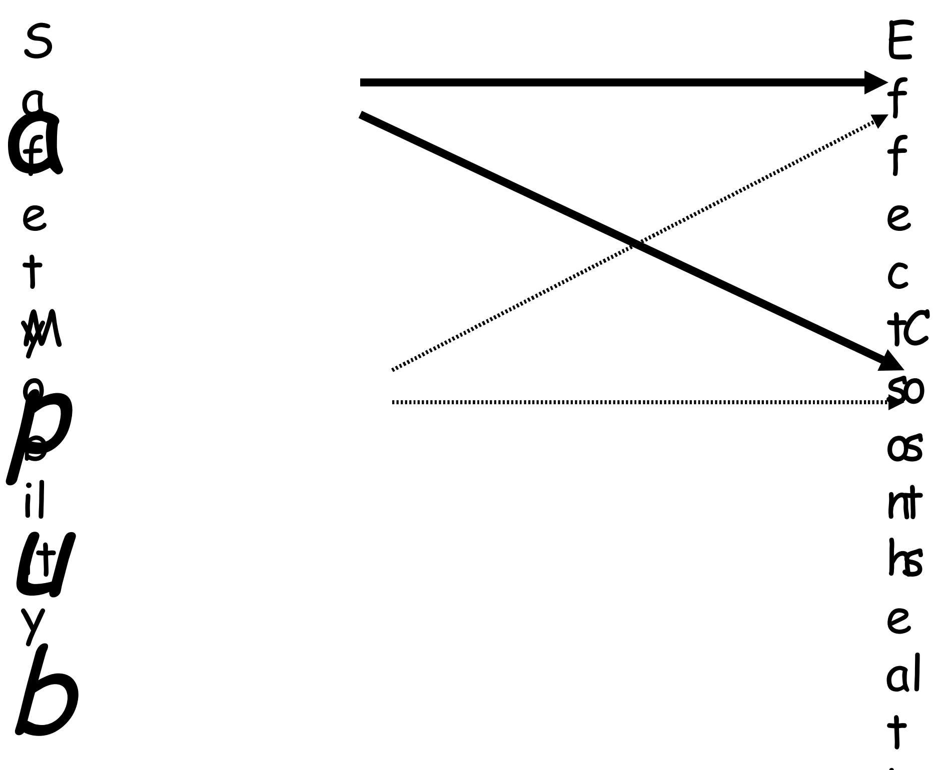
s

a

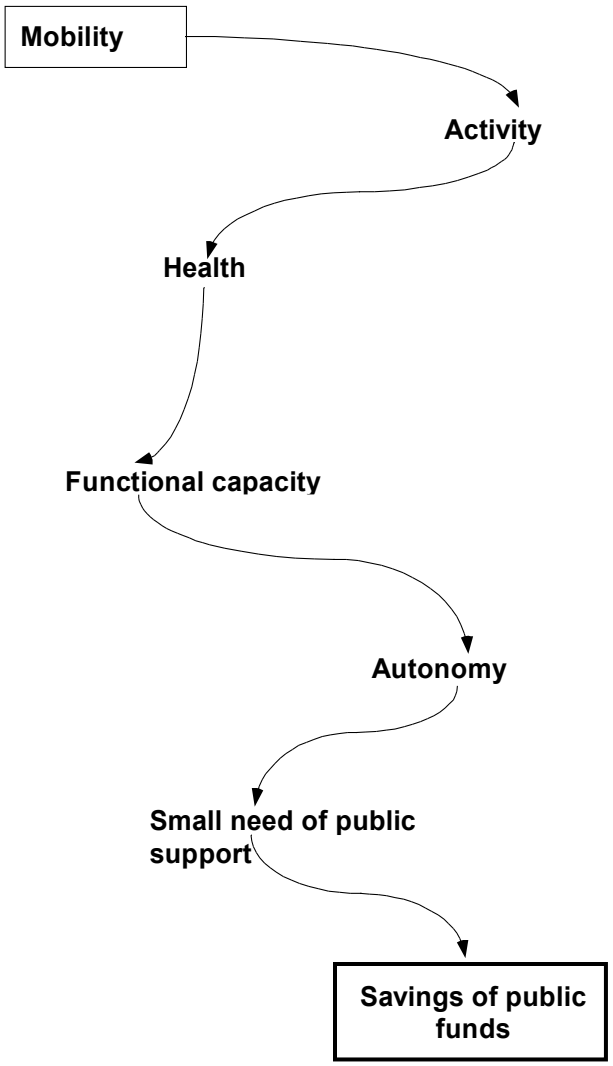
p

u

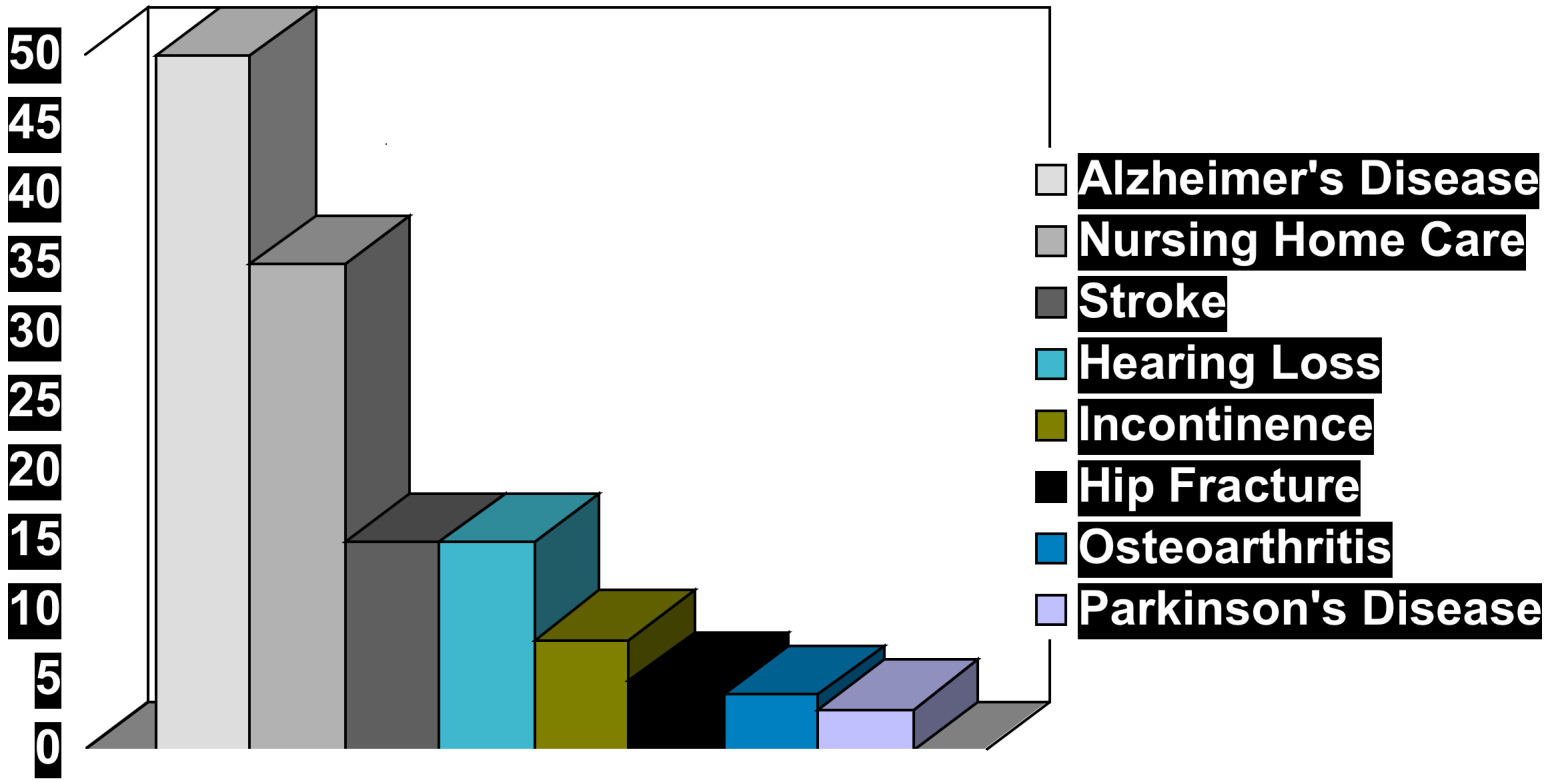
b



e c t s o n h e a l t h ‘ f u



Annual Cost Savings of Delaying Onset of Disease by 5 Years



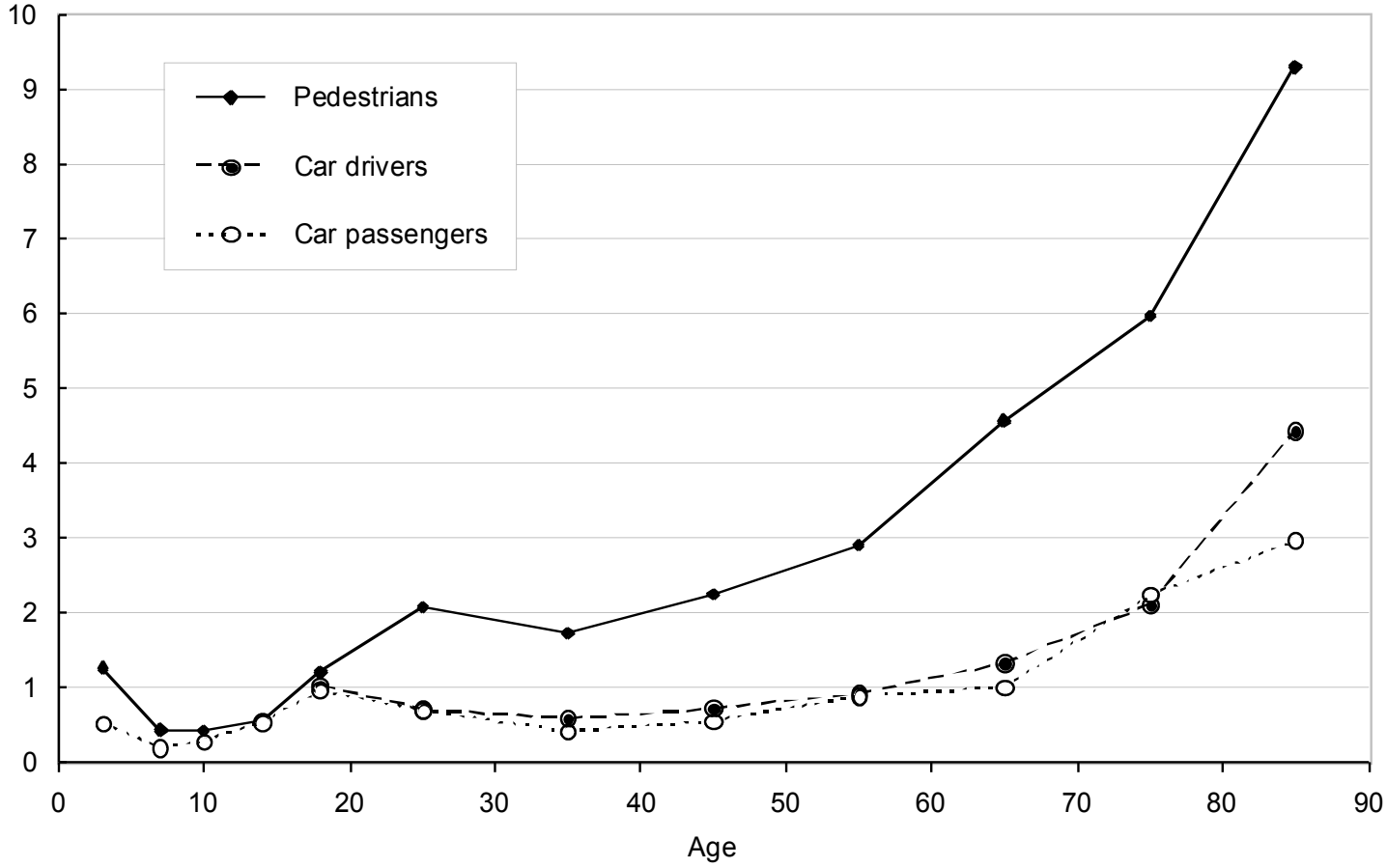
Additional perspectives on mobility

- OECD report 2001: "*even after retirement, older people continue having mobility needs*"
- A highly gendered issue: differences in
  - longevity
  - labour force participation and available resources
  - licensing rates and access to car
  - patterns of illness
- The Widow's Gap
- A Resource Perspective

What About Safety?

- Overrepresented among injured unprotected road users, especially as pedestrians
- Overrepresented among injured public transport riders
- Low accident rates per capita as drivers
- Main problem: increased physical fragility and vulnerability to injury

Fatality Ratio Percent of all Injuries by Age and Mode of Travel



Older drivers?

- **Most important travel mode,**

  but also
- Erroneously perceived as an important public health threath
- Need of scapegoats? Ageism? Easy (and big!) money to make?

Difference in Daily Trip Rates: US v. UK: Men

US	***65 –69***	***70 –74***	***75 –79***	***80 –84***	***85+***
Driver	4.4	4.4	3.8	3.7	3.3
Nondriver	1.6	1.4	1.2	1.6	0.9
% Diff.	-62%	-68%	-68%	-56%	-68%
UK					
Driver	3.0	2.9	2.6	2.1	1.8
Nondriver	2.4	2.1	1.6	1.3	1.0
% Diff.	-19%	-30%	-36%	-38%	-42%

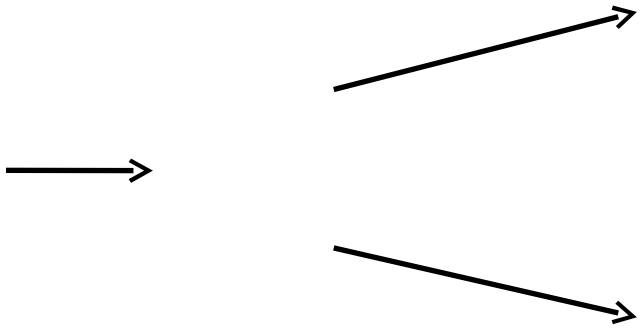
2000: Apocalypsis -- Soon

Example: Hu et al. (2000) (supported by many others) projected that the absolute number of drivers aged 65 years and older killed in road crashes will:

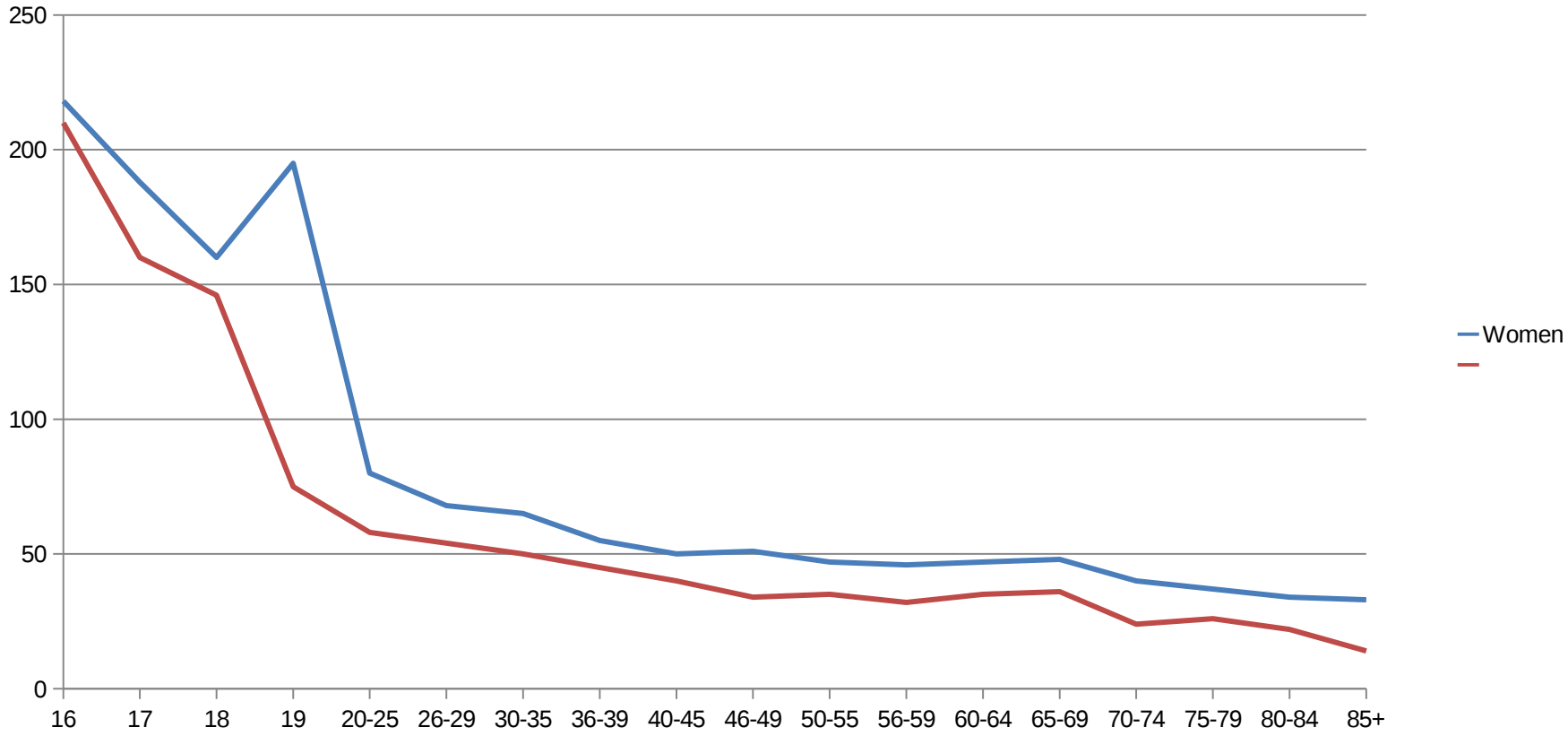
- increase almost three-fold from 1995 to 2025
- and on the way, increase by 50 percent from 1995 to 2005

BUT some researchers maintained that these predictions exaggerated the risk because of ignoring certain key effects such as…

The Frailty Bias



Driver Crash Involvement Per 1K Drivers by Age and Sex, 2003



Driver Fatal Crash Involvement per 100K Drivers, 2003

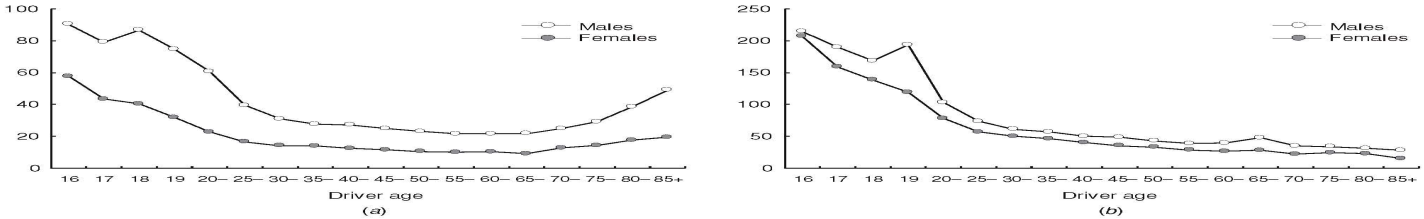


FIGURE 1 (*a*) Driver fatal crash involvements per 100,000 licensed drivers, 2003; (*b*) driver crash involvements per 1,000 licensed drivers, 2003.

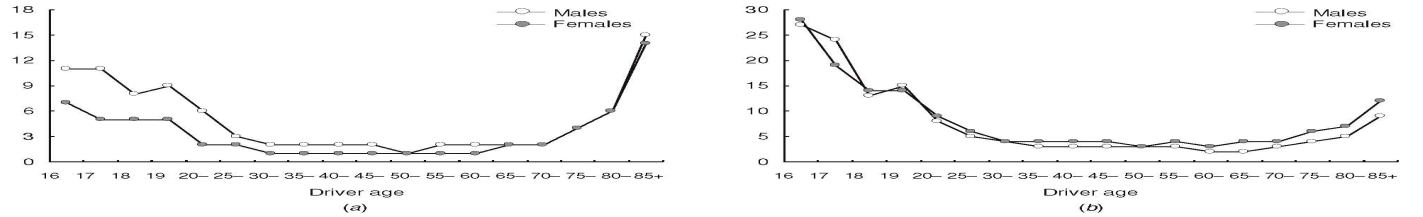


FIGURE 2 (*a*) Driver fatal crash involvements per 100 million miles traveled, 2001–2002; (*b*) driver crash involvements per million miles traveled, 2001–2002.

Risk Perception and Risky Driving

A number of studies have shown that men rate the crash risk of driving situations lower than do women. Trankle et al. (1990) asked male and female drivers of various ages (18 to 21, 25 to 45, 65 to 75) to classify traffic scenes in terms of risk. Young men tended to rate crash risk lower relative to young women, older men, and older women. In a similar study Mundt et al. (1992) evaluated the effect of sex on risk perception of a crash in various scenarios among young college students. Women consistently rated crash likelihood higher compared with men, including when the effects of alcohol on driving were factored in.

Men also tend to rate their driving abilities more highly. Drivers of all ages tend to rate their driving as better than average, but men do so to a greater extent than women (Delhomme 1991; Sivak et al. 1989; Williams 2003; Williams et al. 1995). A national survey of U.S. drivers found that men were more likely than women to compare themselves favorably with other drivers and to rate themselves highly on driving skill and safety (Williams 2003; Williams et al. 1995).

Men also adopt riskier driving styles than women. They are less likely to use seat belts and more likely to speed, follow too closely, and drive after drinking. U.S. surveys in 2003 reported belt use rates among front-seat occupants of 84% (women) and 77% (men) (Glassbrenner 2004). Belt use also was higher among women in an observational study of Michigan drivers during 1984–1996. However, belt use during this 12-year period increased at similar rates among men and women (Kostyniuk et al. 1996). In 2003 a higher percentage of male drivers who died in passenger vehicle crashes were unrestrained compared with female drivers (unpublished analyses of data from FARS, 2005).

Men also are more likely than women to speed. A study of U.S. fatal crashes in 2003 found that the relative

Low mileage bias

		Yearly driving exposure		
		≤ 3000 km	>3000 km ≤ 14000 km	>14000 km
Age				
26-40	**n drivers**	38	64	98
	Σ km/year	48350	543800	2502500
	mean km/driver/year	1272,48	8496,9	25535,7
	Σ acc*	3,5	8,0	14,5
	acc/1 million km	**72.4**	**14,7**	**5.8**
65+	**n drivers**	202	515	163
	Σ km/year	319253	4150568	3331418
	mean km/driver/year	1580,5	8059,3	20438,1
	Σ acc*	15,5	48,0	20,5
	acc/1 million km	**48.6**	**11.6**	**6.2**

facc/km: Older: 10.8, younger: 8.3

"It is likely that most of the over-representation of older drivers is attributable to outcome severity and to differences in kinds of exposure, not to age-specific frequency of involvement. If so, the motivation for seeking remedy to older driver over-representation in measures aimed at reducing the frequency of involvement may be without foundation."

(Hauer, 2006)

Cohort effects

PERGAMON

Transportation Research Part F 2 (1999) 131–138

TRANSPORTATION RESEARCH PART F

www.elsevier.com/locate/trf

Cohort effects in older drivers' accident type distribution: are older drivers as old as they used to be?

Liisa Hakamies-Blomqvist [a,b,*], Per Henriksson [b]

[a] *Swedish School of Social Science, University of Helsinki, P.O. Box 16 (Topeliusgatan 16), 00014 Helsinki, Finland*
[b] *Swedish Road and Transport Research Institute (VTI), Linköping, Sweden*

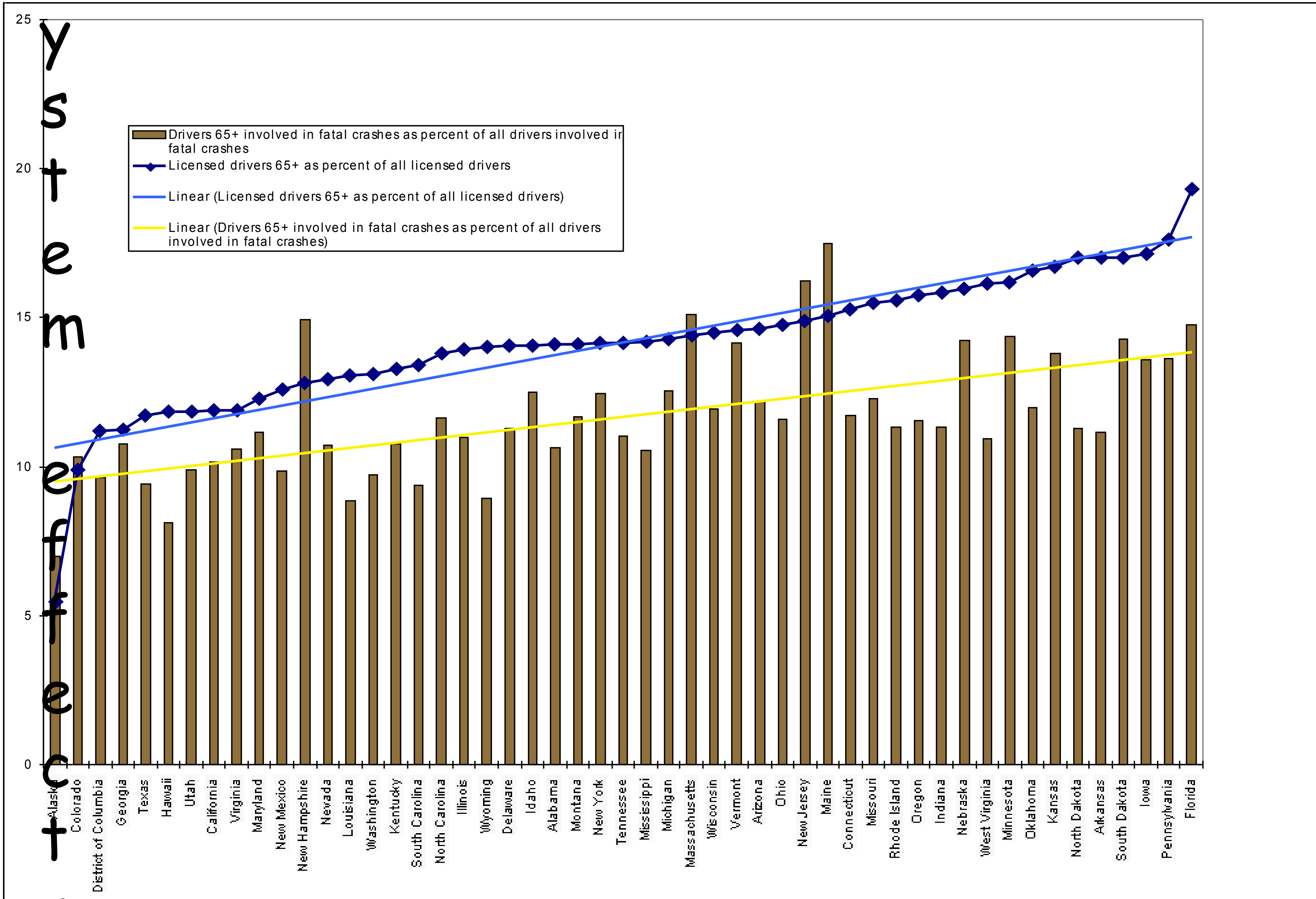
Received 4 January 1999; received in revised form 10 April 1999; accepted 12 April 1999

Abstract

Accident type distributions were compared in successive cohorts of older drivers, with focus on intersection accidents. It was thought that if the increasing share of intersection accidents is a truly age-related phenomenon, as opposed to cohort-related or time-related, it would remain fairly constant over time in different cohorts. The data consisted of Finnish traffic insurance data on private car accidents of drivers aged 60 yr or more who were legally responsible for causing the accident, and covered the years 1987–1995 ($N = 56{,}481$). Some changes in accident type distributions were found across cohorts. Among male drivers aged 60–79 yr, the portion of intersection accidents decreased in successive cohorts, so that the younger cohorts showed the age-typical accident picture at a somewhat later age than the older cohorts. In contrast, for male drivers aged 80 yr or more, there was an increase in the share of intersection accidents in more recent cohorts. Among female drivers, a decrease in intersection accidents only reached statistical significance for drivers aged 60–69 yr, and for the oldest age group (75+ yr) no change was observed. For both male and female drivers, the tendency to incur accidents at intersections increased with age in all cohorts. The occurrence of intersection accidents thus is both an age-related and a cohort-related phenomenon: age-related in the sense that it will emerge eventually, but with cohort-related variance in timing.

Keywords: Older driver; Accident; Cohort

System effects

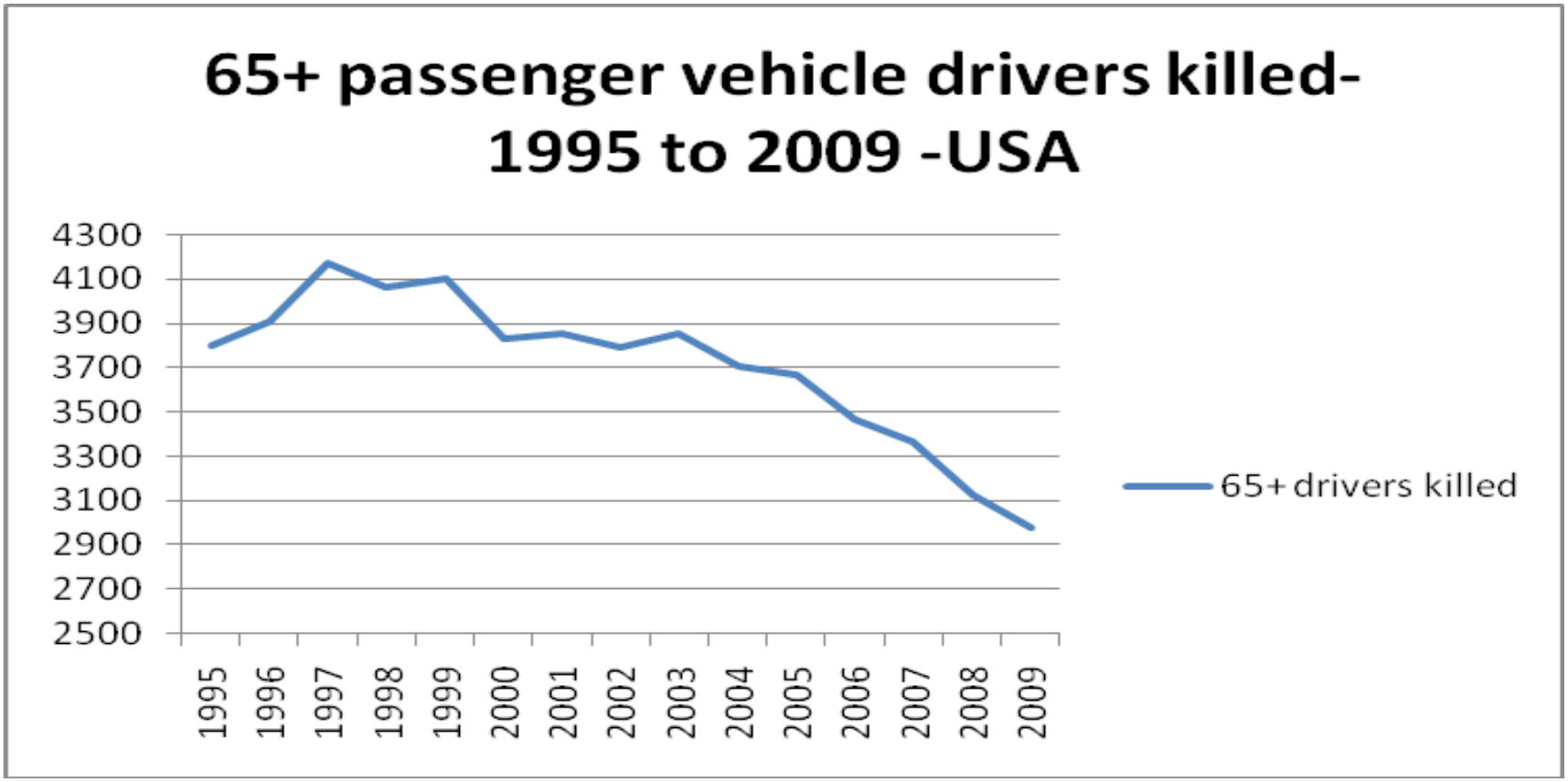


Summing up the opposition: Apocalypotic predictions would fail, because they

- exaggerated older drivers' risk (frailty bias, low mileage bias)
- ignored the historical discontinuity of the older driver population (cohort effects)
- failed to take into account possible positive changes on the traffic system level (system effects)

The Outcome

Acknowledgements to Cheung et al. (2010)



Driver screening: An effective traffic safety measure?

- Average risk 1/13000
- "High risk" 1/6500
- Given perfect specificity and sensitivity,
  preventing one traffic death costs the mobility of 6499 safe older persons
- Conclusion: Risk increases have to be very large for screening to be safety-inducing on system level

Age-Based Driver Screening: Empirical findings

- Intended effect: Exclusion of the bad drivers
- Achieved effect: Premature volontary driving cessation of safe drivers

- Expected benefit: Reduction of older drivers' accidents
- Achieved "benefit": Increase in accidents among older unprotected road users

Conclusions

For succesfull ageing and economic benefit:
>> Mobility

For maximal safety in traffic:
>> Prolonged driving and enhanced injury prevention

For efficient policy development:
>> Broad partnerships with both private and public actors


Lotsa Wheels
CARS FOR OVER 80's
WE'VE CHANGED THE AIR BAGS FOR INCONTINENCE BAGS


Merci de votre attention!
Liisa Hakamies