

Traffic Safety Seminar
- Liikenneturvallisuusseminaari

Northern dimension & traffic safety

- Pohjoinen ulottuvuus & liikenneturvallisuus

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A safe driver challenges for the future

Esko Keskinen

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Prologue

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Sancta Birgitta 1303 – 1373

***Herre visa mig din väg
och gör mig villig att gå den***

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Globally young novice drivers have a high risk of accidents, especially serious accidents

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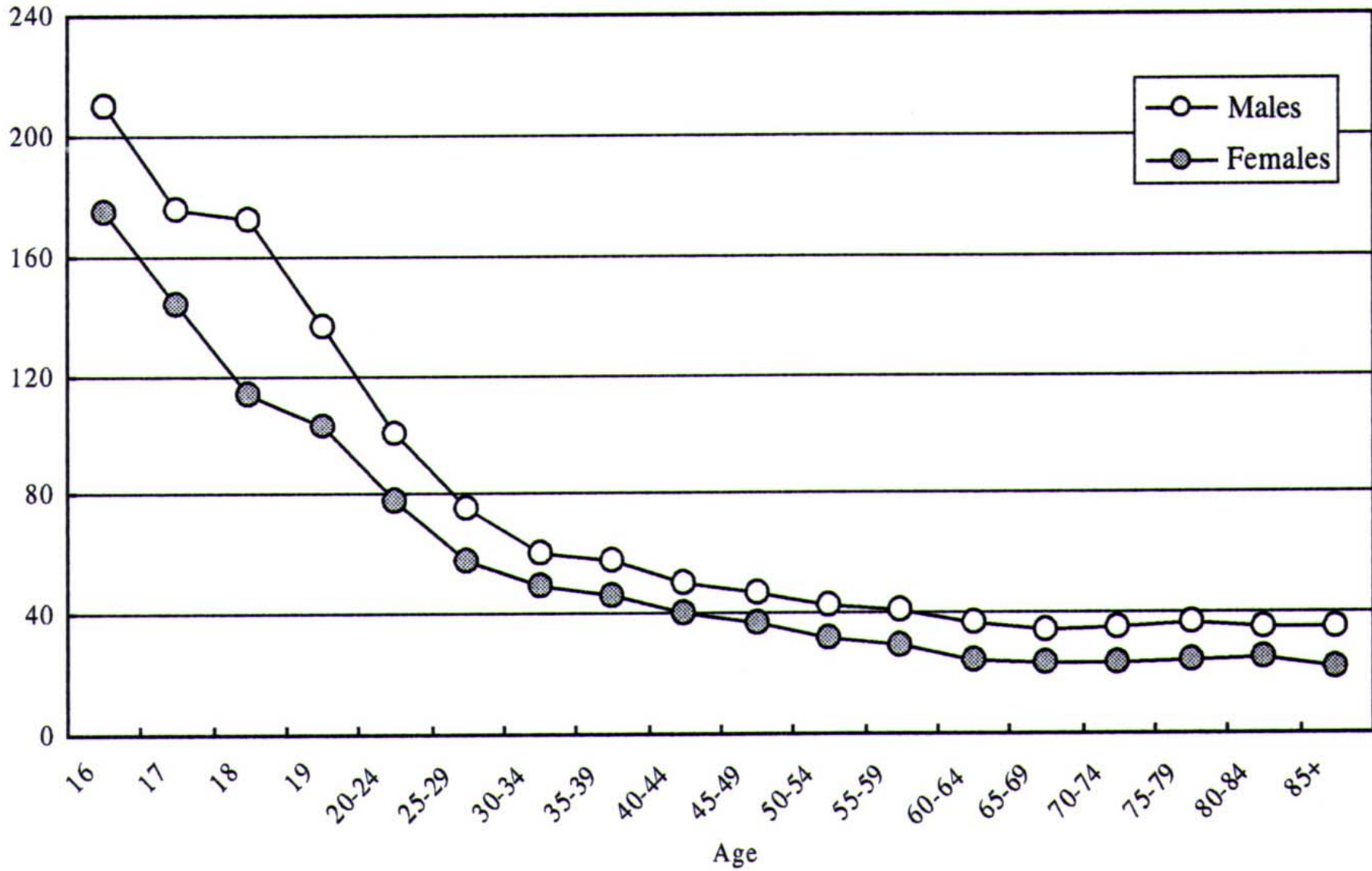
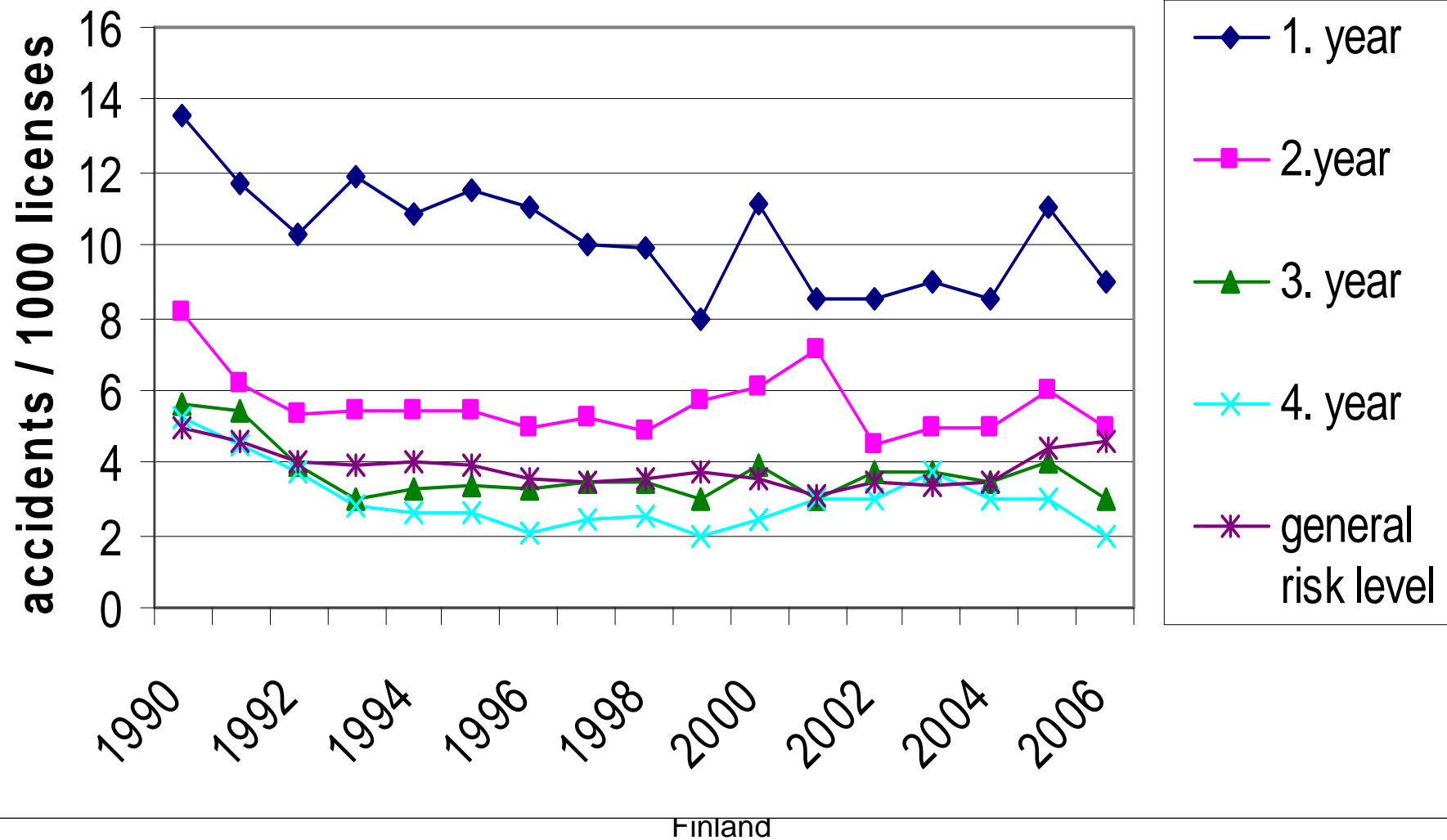
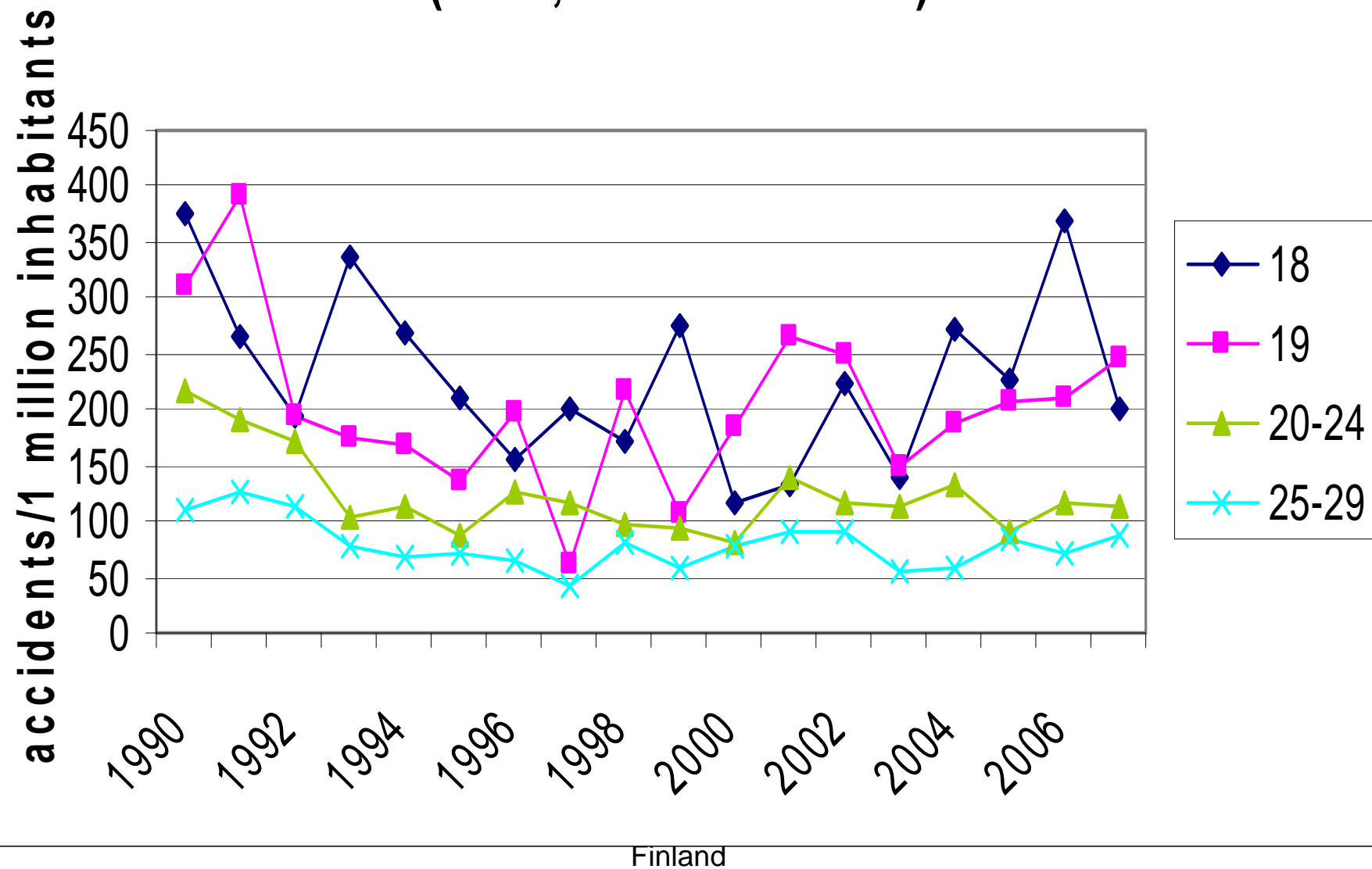


Fig. 3. Driver crash involvements per 1,000 licensed drivers, 2000.

Novice driver's injury accident risk and risk level of all drivers (VALT, AKE)



Risk of fatal accident as a guilty party (VALT, Statistics Finland)



Why, what are the reasons

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Main factors behind novice drivers' risk in traffic (OECD, 2006, 68)

1 Poor technical driving skills

2 Acute impairments in the situation (fatigue, alcohol)

3 Risk-enhancing circumstances, elements of exposure

4 The willingness (not) to drive safely and (wrong) self- assessment

5 General “nature” and “nurture” aspects of young, novice drivers, not directly related to driving

Hierarchical levels of driving behaviour (Keskinen, 1996), Partly based on original ideas of Mikkonen and Keskinen, 1980)

5. Level: Culture and subculture

- Values, social and other norms, legislation, social environment

4. Level: Goals for life and skills for living

- Importance of cars and driving for personal development
- Skills for self-control

3. Level: Goals and context of driving

- Purpose, environment, social context, company

2. Level: Mastering traffic situations

- Adapting to the demands of the present situation

1. Level: Vehicle manoeuvring

- Controlling speed, direction and position

**Lowest levels of driving behaviour are
TOOLS serving higher levels**

**Higher levels give the tasks to lower ones
and control them.**

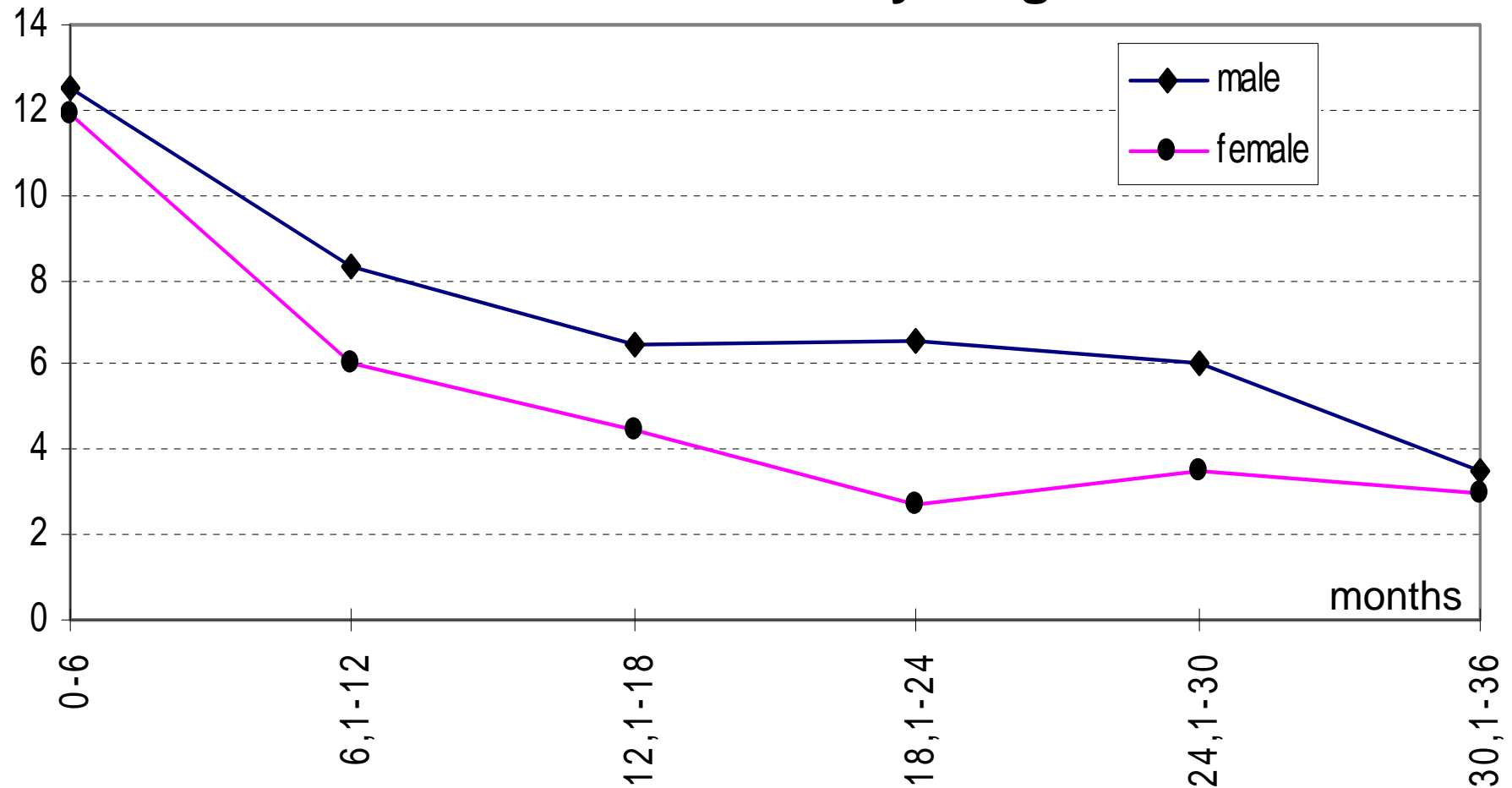
**MOTIVATION, how to use the tools, is
crucial.**

But of course the tools must be sharp too

Sancta Birgitta:

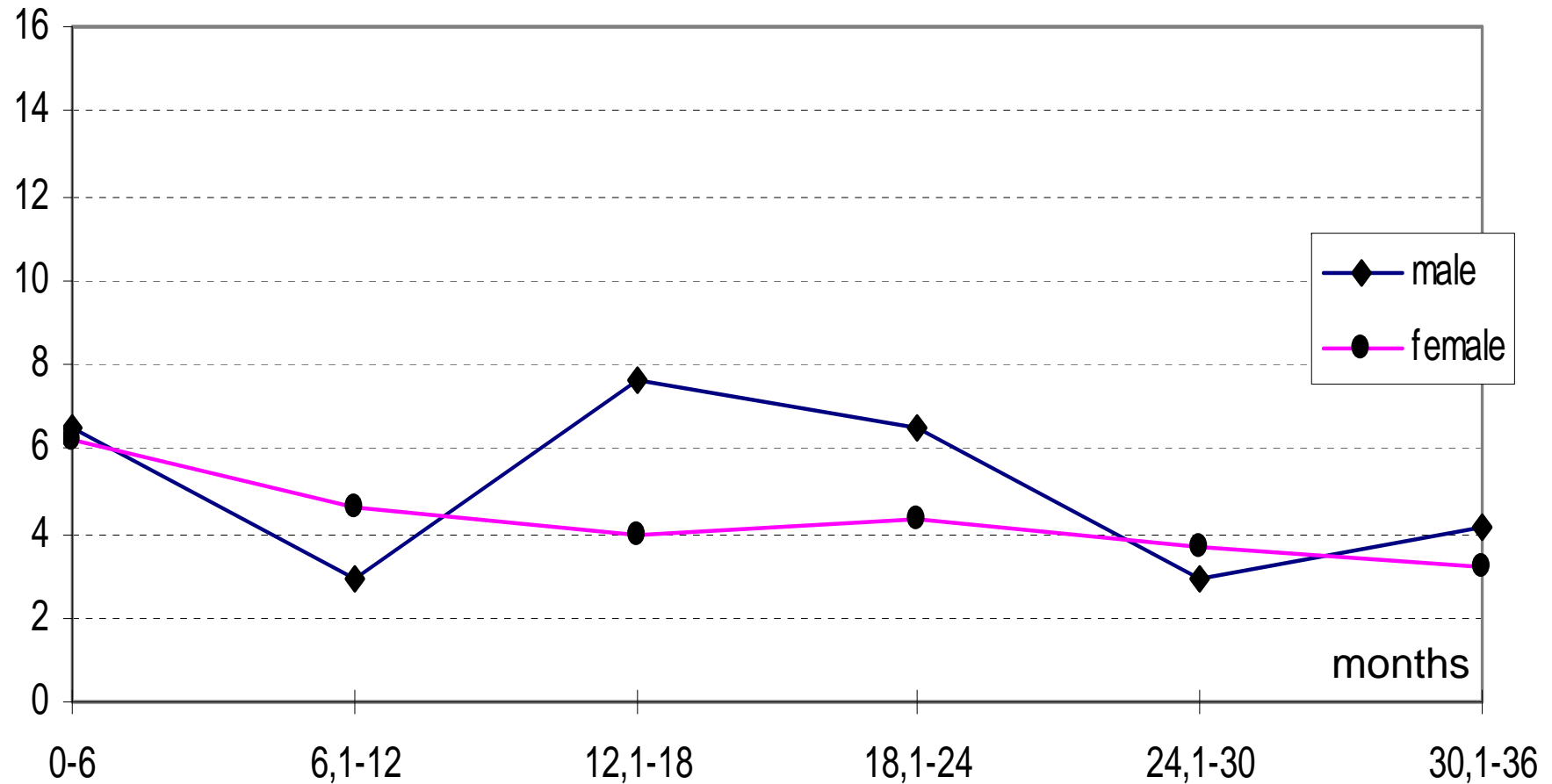
***Herre visa mig din väg
och gör mig villig att gå den***

Novice drivers' accidents: younger



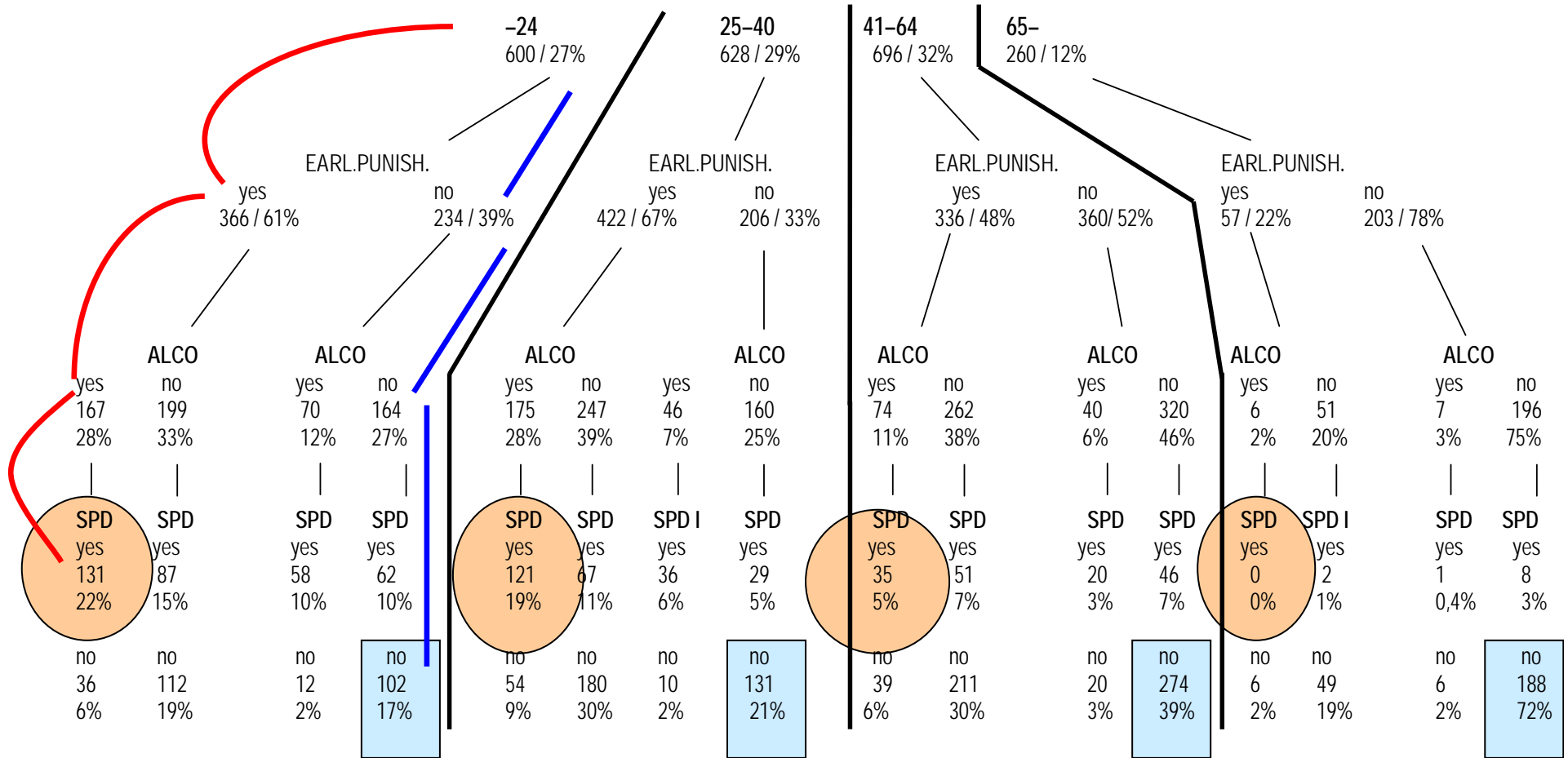
Self reported accidents per 100 novice drivers according to time from licensure. Length of driving career at least 36 months. Age of drivers: **younger than 23 years**. Males, n=768, females n=846 (BASIC 2003)

Novice drivers' accidents: older



Self reported accidents per 100 novice drivers according to time from licensure. Length of driving career at least 36 months. Age of drivers: **23 years and older**. Males, n=170, females n=373

Male drivers AGE



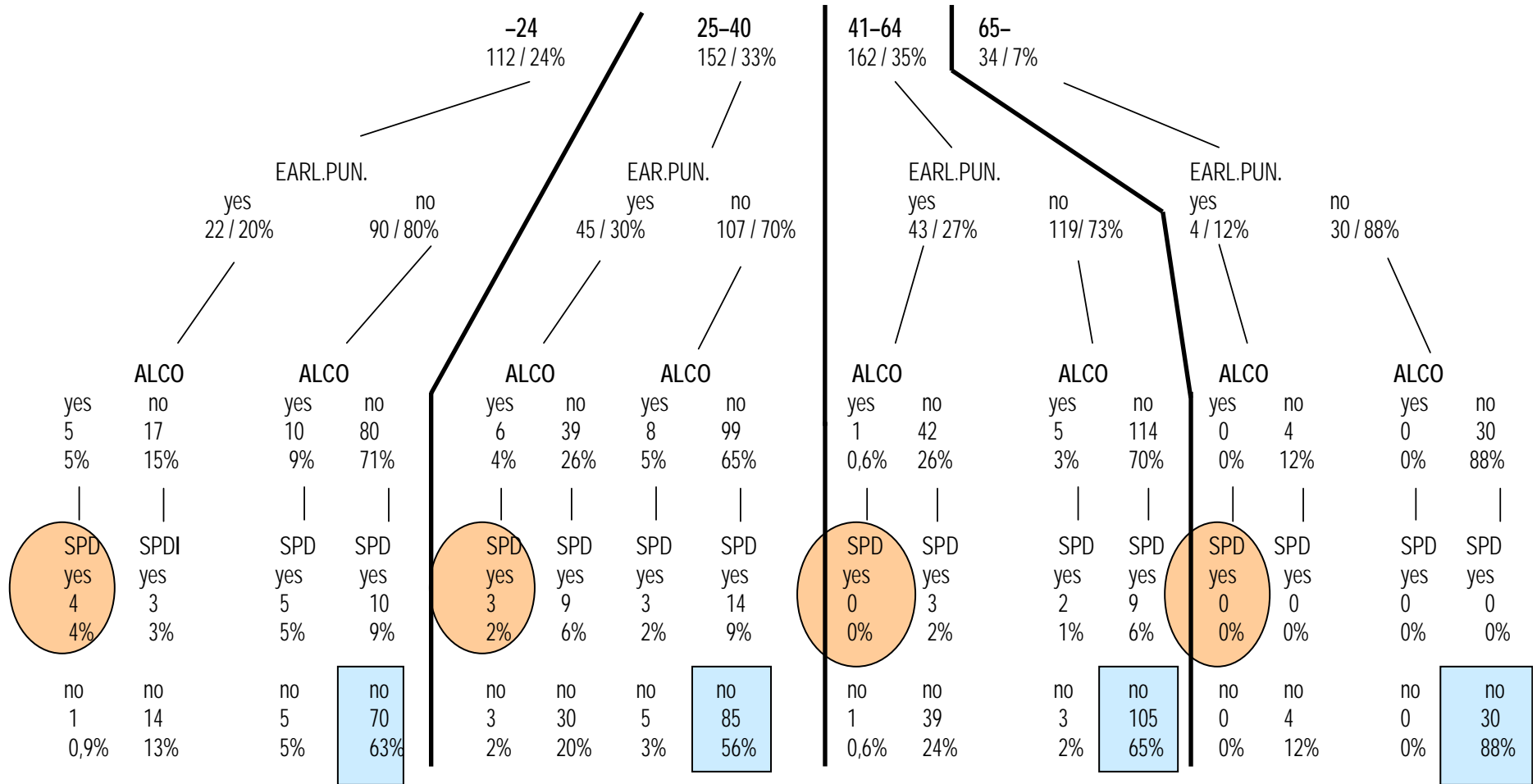
Car drivers in fatal accidents, their age, earlier punishments (3 years), being drunken and speeding in the accident situation. % of age according all drivers and other % inside age groups (n=2184), (Salo and Keskinen, 2003)

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Female drivers

AGE



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Car drivers in fatal accident in Finland (n=160) (Salo and Keskinen, 2003)

Arrests per thousand population

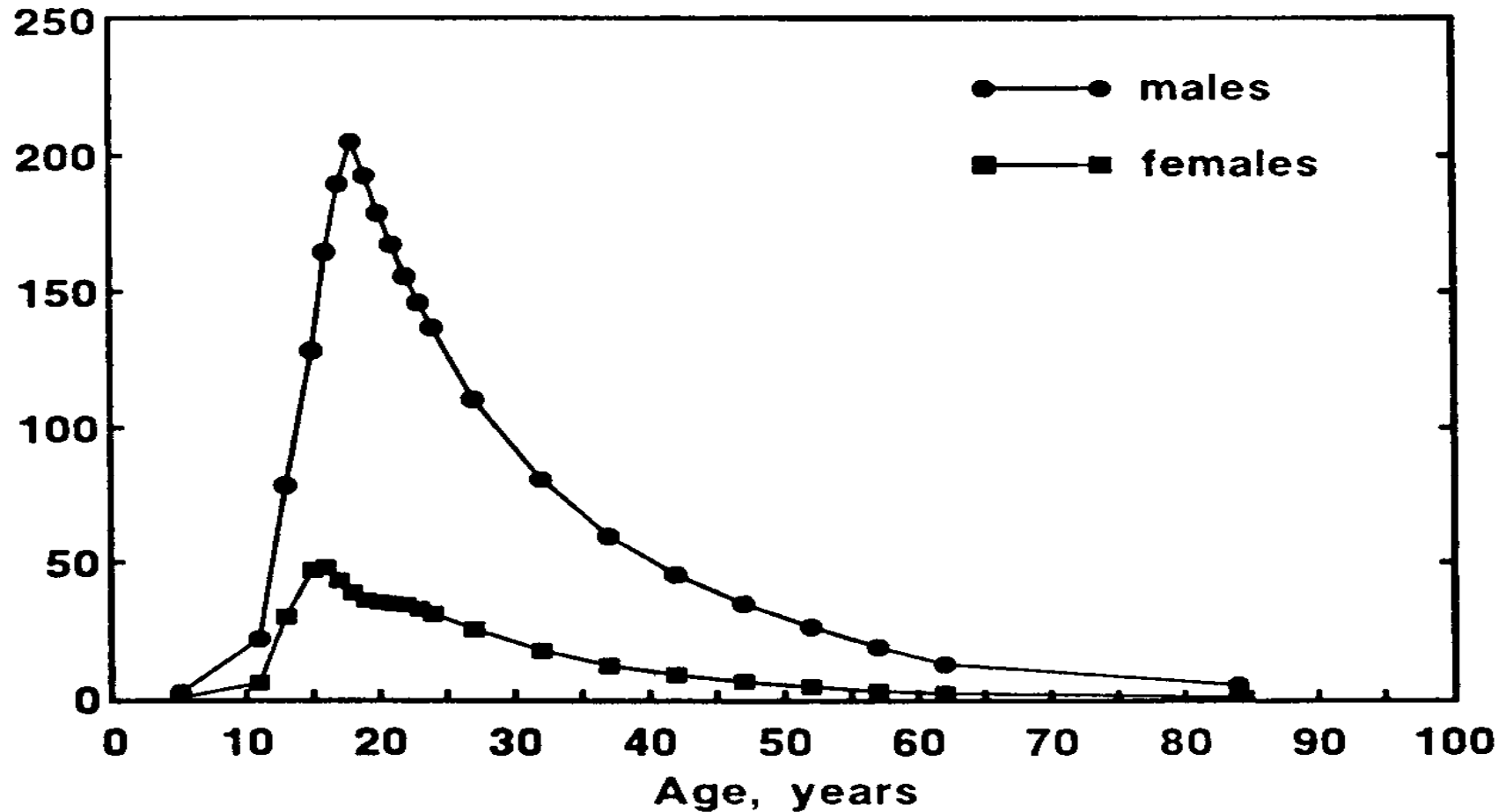


Figure 6-7. *Top:* Estimated car-driver involvements in single-car severe crashes per capita. *Bottom:* Number of arrests (for all offenses except those related to traffic laws) per capita. From Evans [1987a].

Not only the SKILLS but also the WILL

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What shall we do with the novice drivers?

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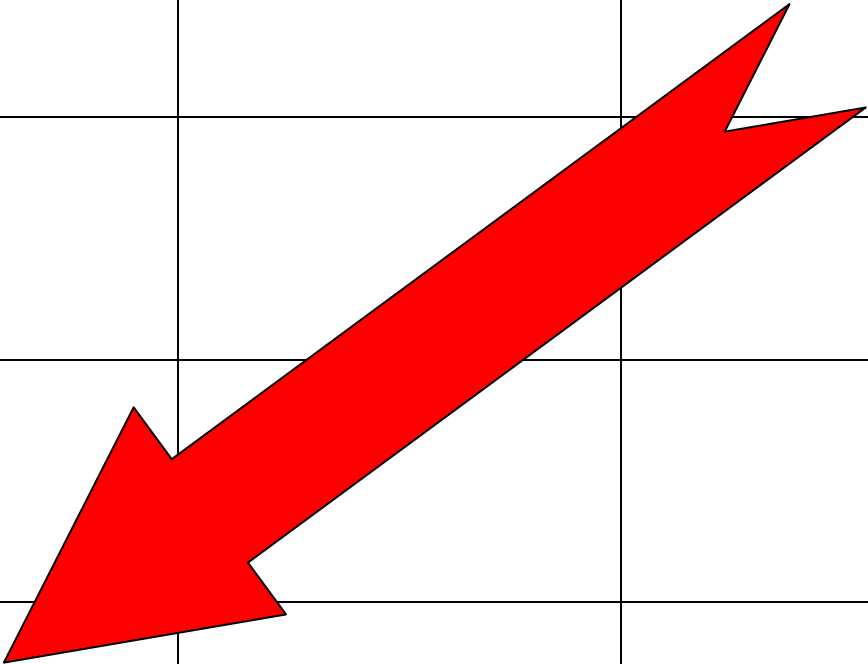
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GDE-model (Goals and Contents for Driver Education)

(Hatakka, Keskinen, Glad, Gregersen, Hernetkoski, 2002)

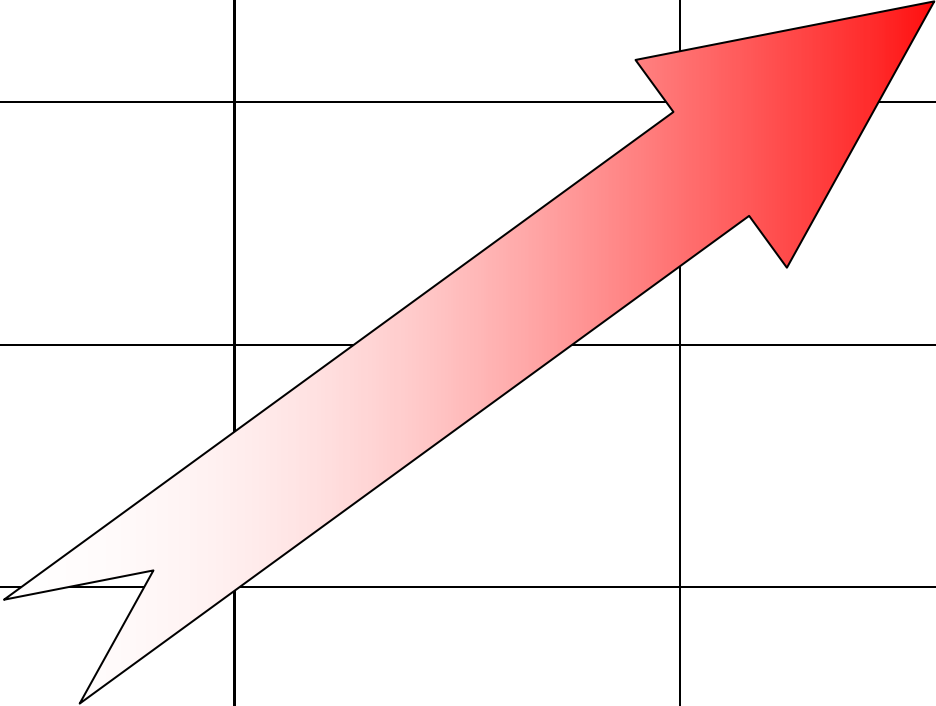
| | Knowledge and skills | Risk-increasing factors | Selfevaluation |
|--|---|--|--|
| Goals for life, skills for living (general) | Lifestyle, age, group norms, motives, self-control, personal values | Sensation seeking Group norms Complying to social pressure Use of alcohol | Risky tendencies Personal skills for impulse control Safety negative motives |
| Goals and context of driving (trip related) | Modal choice Choice of time Trip goals Social pressure | Alcohol, fatigue Purpose of driving Rush hours Extra motives: competing | Planning skills Typical goals Typical risky motives |
| Mastery of traffic situations | Traffic rules Observation Driving path Communication | Disobeying rules Information overload Unsuitable speed. | Awareness of personal strengths and weaknesses |
| Vehicle manoeuvring | Control of direction, position Tyre grip Physical laws | Unsuitable speed Insufficient automatism Difficult conditions | Strong and weak points of basic manoeuvring |

| | | Essential curriculum | | |
|----------------------------------|--|----------------------|-------------------------|-----------------|
| | | Knowledge and skills | Risk-increasing factors | Self-evaluation |
| Hierarchical levels of behaviour | Goals for life and skills for living (general) | | | |
| | Driving goals and context (journey-related) | | | |
| | Mastery of traffic situations | | | |
| | Vehicle manoeuvring | | | |



Stefan Siegrist (Bfu), Hatakka, Keskinen, Glad, Gregersen, Hernetkoski, 2002

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Stefan Siegrist (Bfu), Hatakka, Keskinen, Glad, Gregersen, Hernetkoski, 2002

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Drivers' social skills in traffic SOSITA

Esko Keskinen, Sirkku Laapotti, Ari
Katila, Kati Hernetkoski ja Antero Lammi

A LINTU-project 2006-2007

Social skills in traffic

1. prosocial behaviour

- willingness to act prosocially
- knowing the norms

2. prediction skills

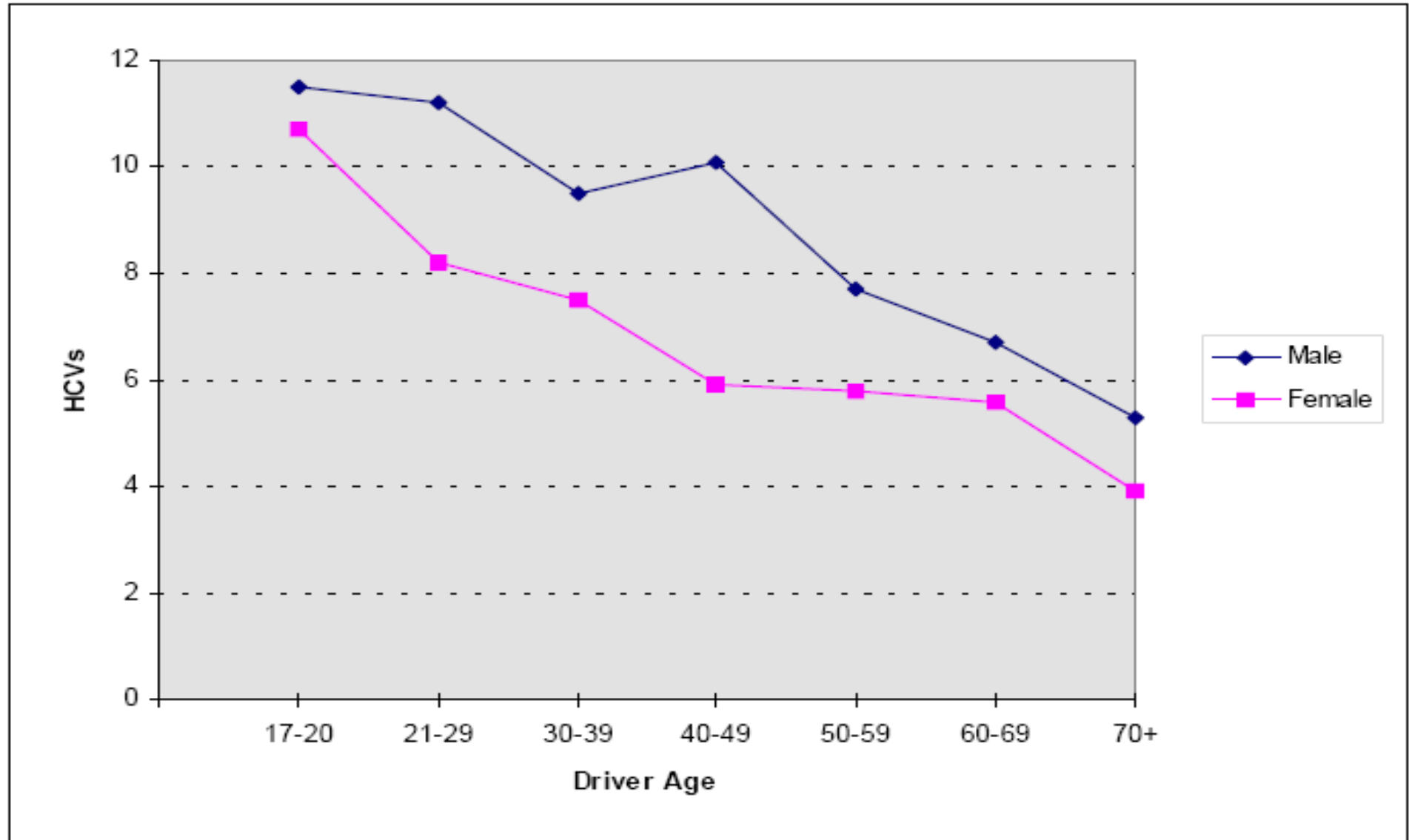
- prediction of others behaviour
- making own behavior predictable

3. emotion skills

- perceiving others' emotions
- expressing own emotions in an appropriate way
- controlling the negative consequences of own emotions

Figure 3
Mileage

Highway Code Violations By Age Band And Sex, Correcting For Stradling & Meadows



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Social skills in traffic

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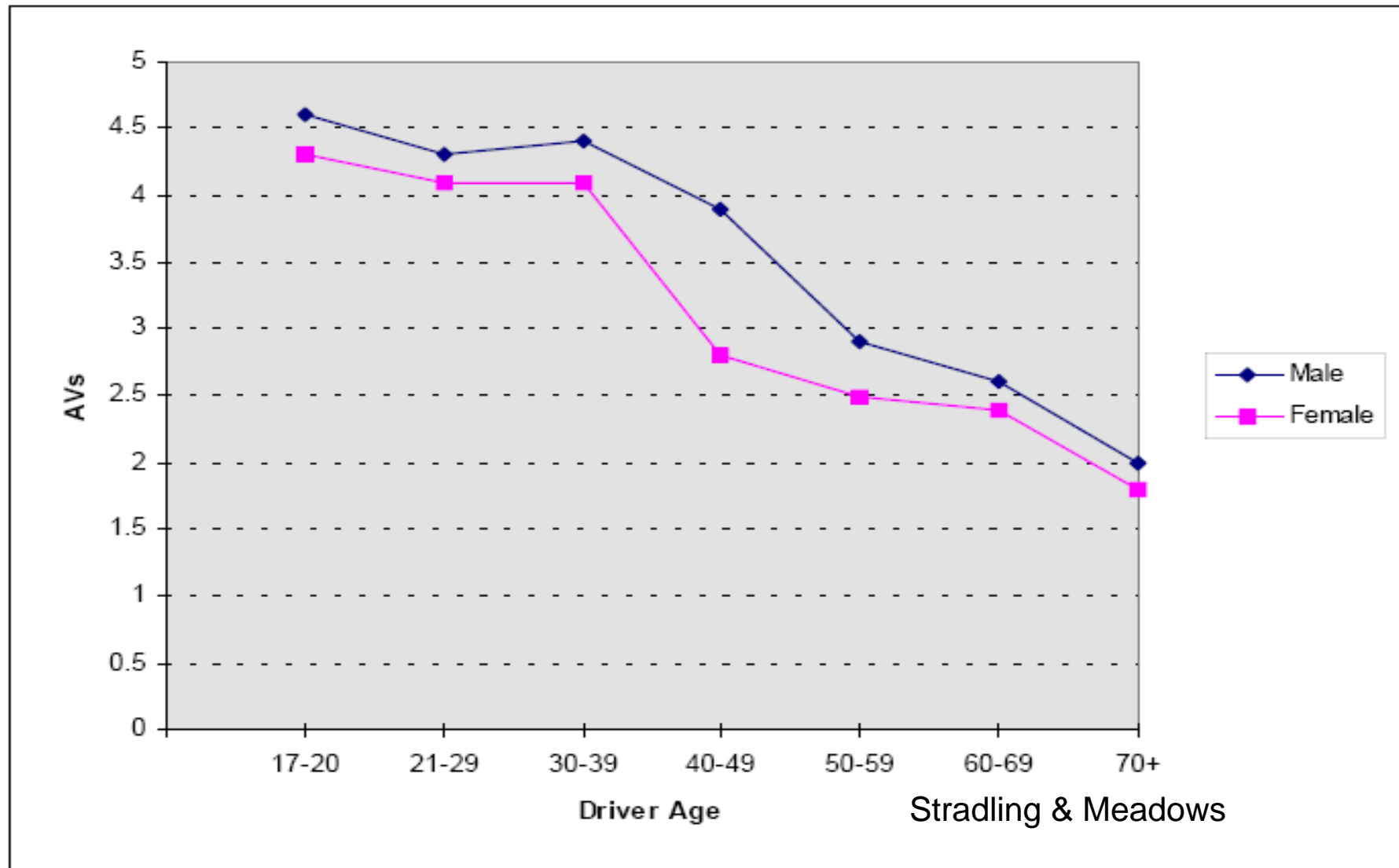
2. prediction skills

- prediction of others behaviour
- making own behavior predictable

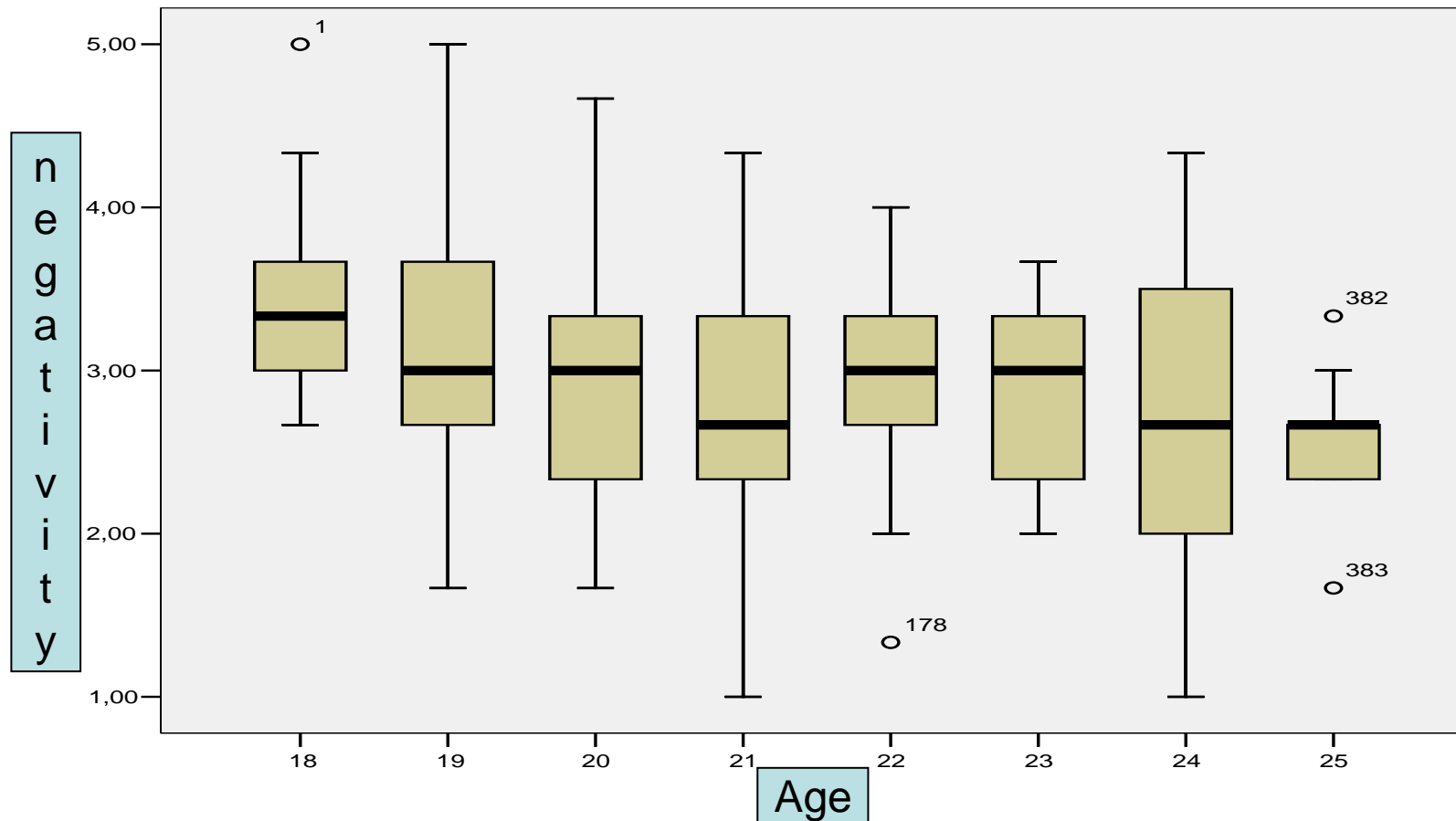
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Figure 4 Aggressive Violations By Age Band And Sex, Correcting For Mileage



Self reported negativity concerning traffic safety and age of novice drivers (scale 1= no negativity ja 5=very neagtive) (Koskenpää 2008)
Notice self selection of drivers. No effect of experience.



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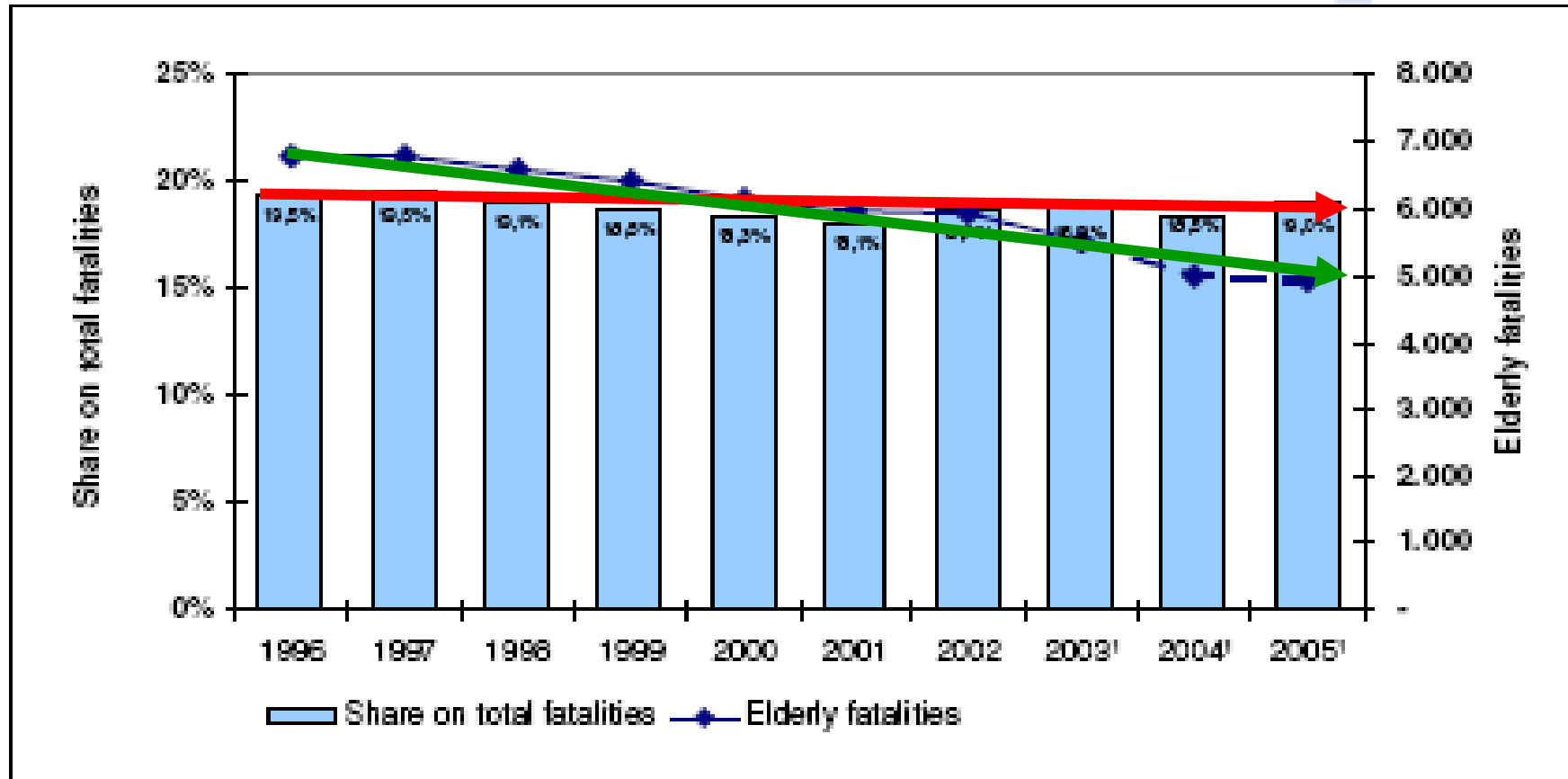
- perceiving others' emotions
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What about older drivers

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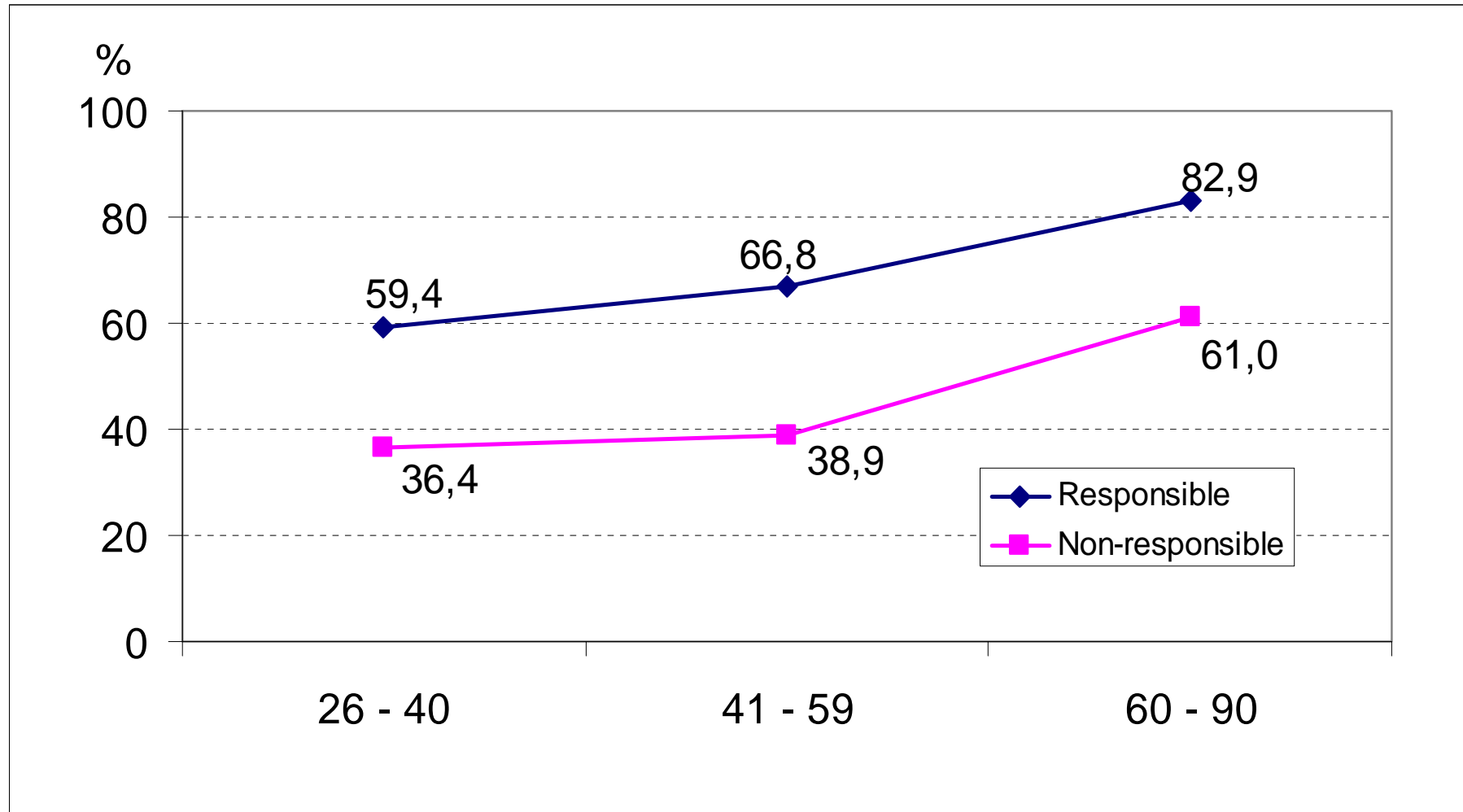
Figure 1: Number of elderly fatalities and their proportion on total fatalities in EU-14, 1996-2005¹



Source: CARE Database / EC
Date of query: October 2007

SEVERELY OR FATALLY INJURED DRIVERS IN CAR TO CAR COLLISIONS.

Peräaho & Keskinen, 2004

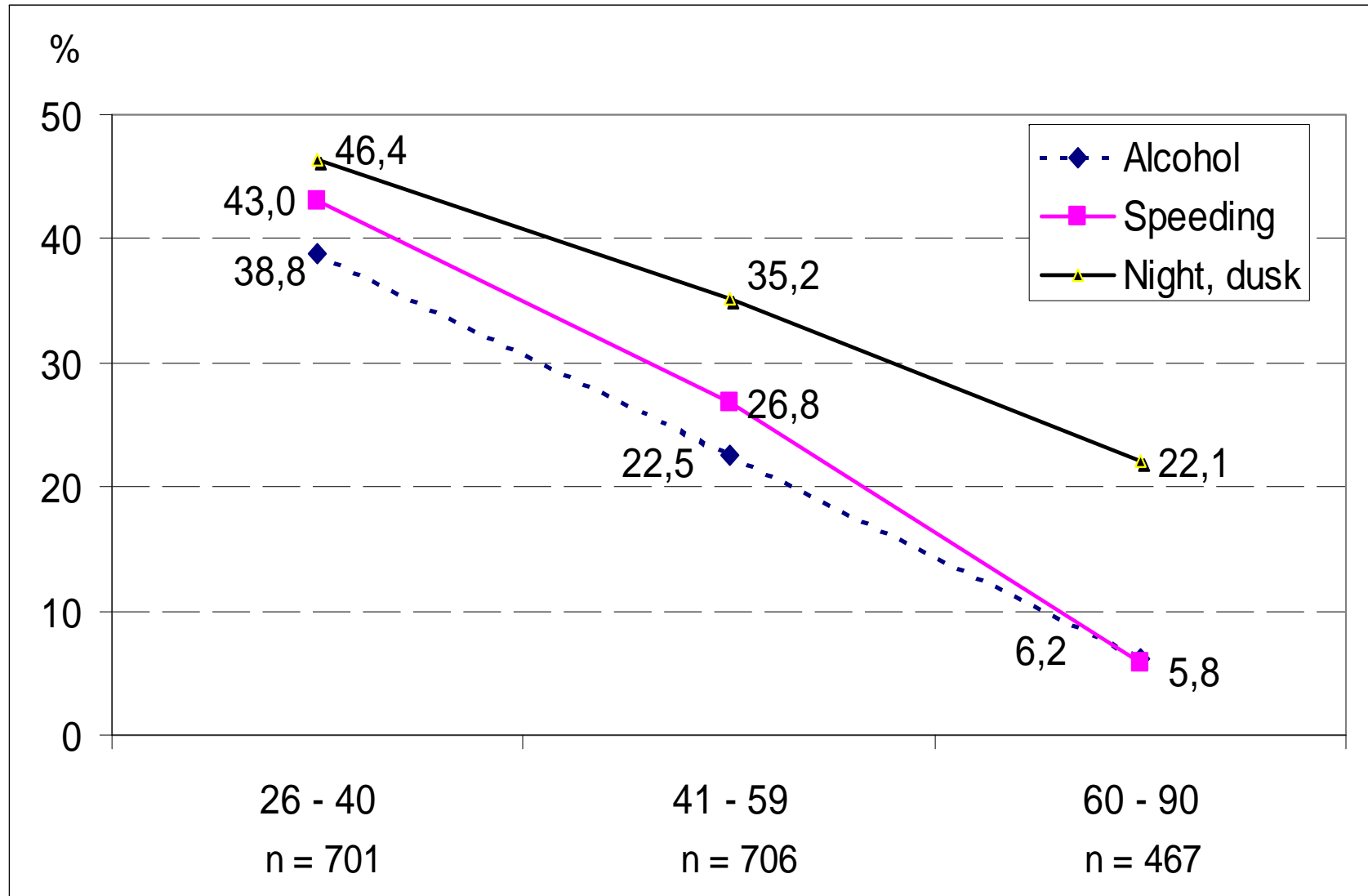


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ALCOHOL, SPEEDING, NIGHT DRIVING: RESPONSIBLE DRIVERS

Peräaho & Keskinen 2004

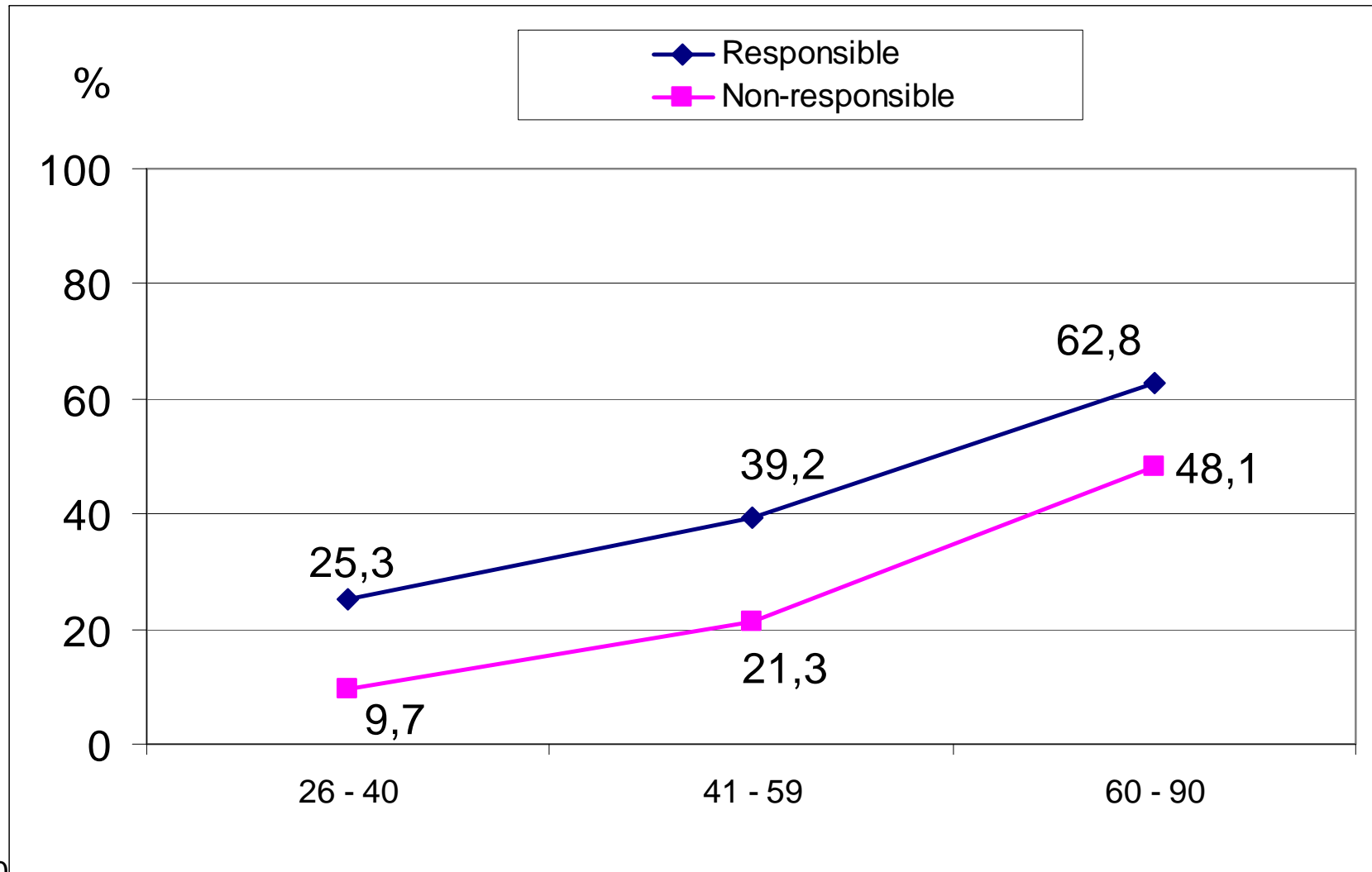


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MORE LONG-TERM ILLNESSES AMONG RESPONSIBLE DRIVERS.

Peräaho & Keskinen, 2004



**Older drivers have problems in their
COMPETENCE (health), but not in
their motivation to behave safely**

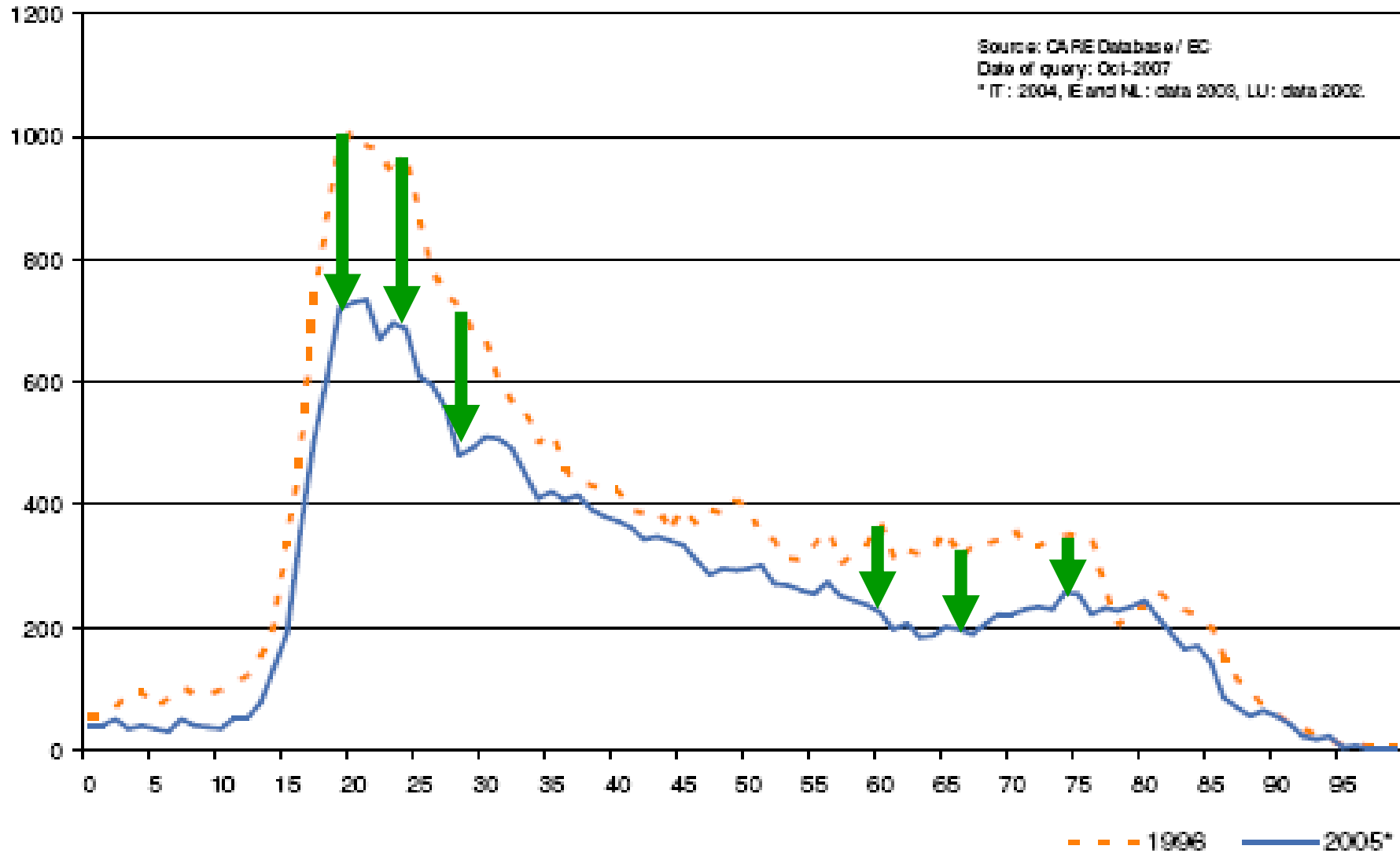
**They are also not a special risk for
others in traffic but mainly for them
selves**

How about future

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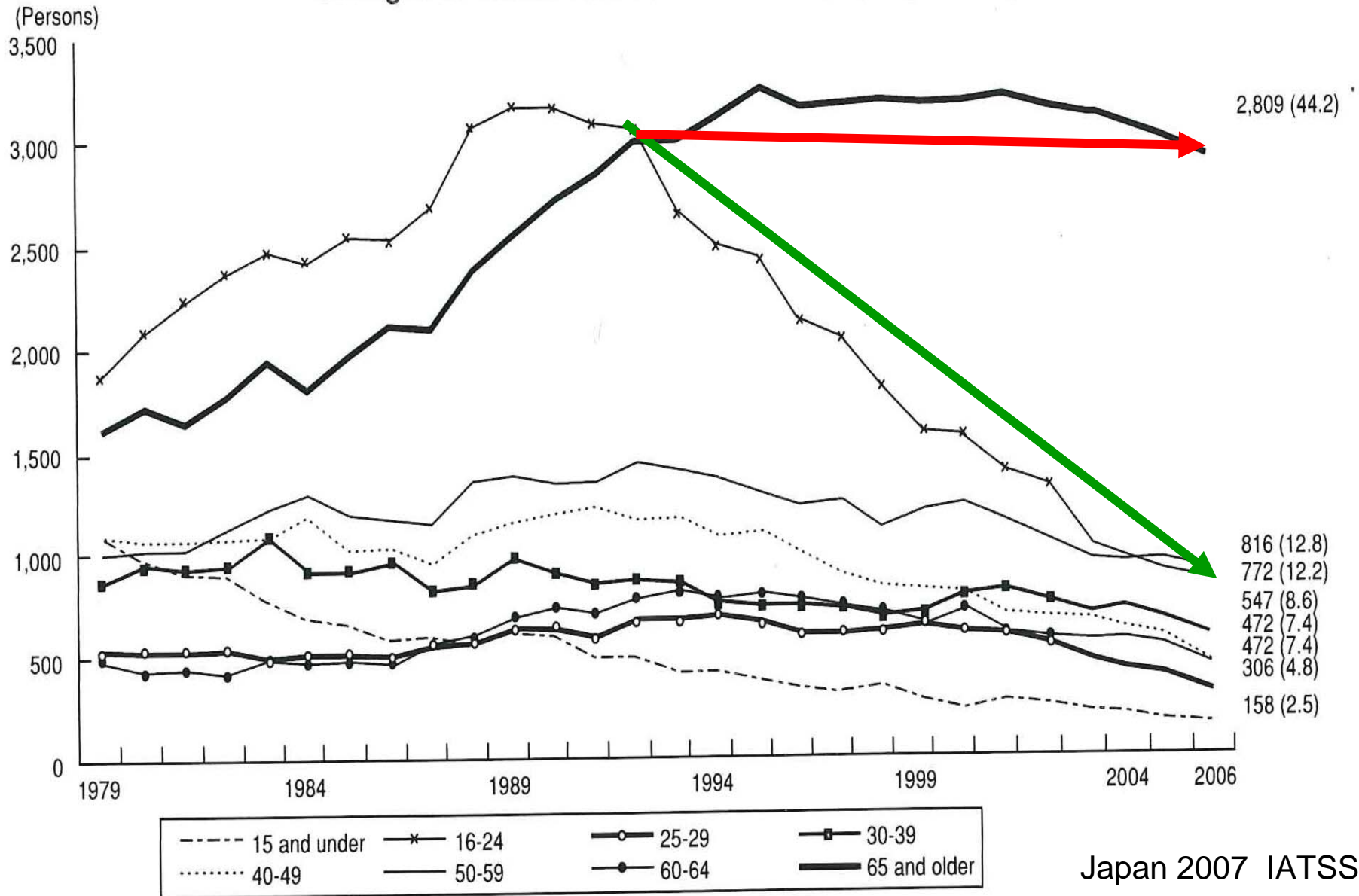
Figure 18: Annual number of fatalities by year and age, EU-14 (1996 and 2005*)



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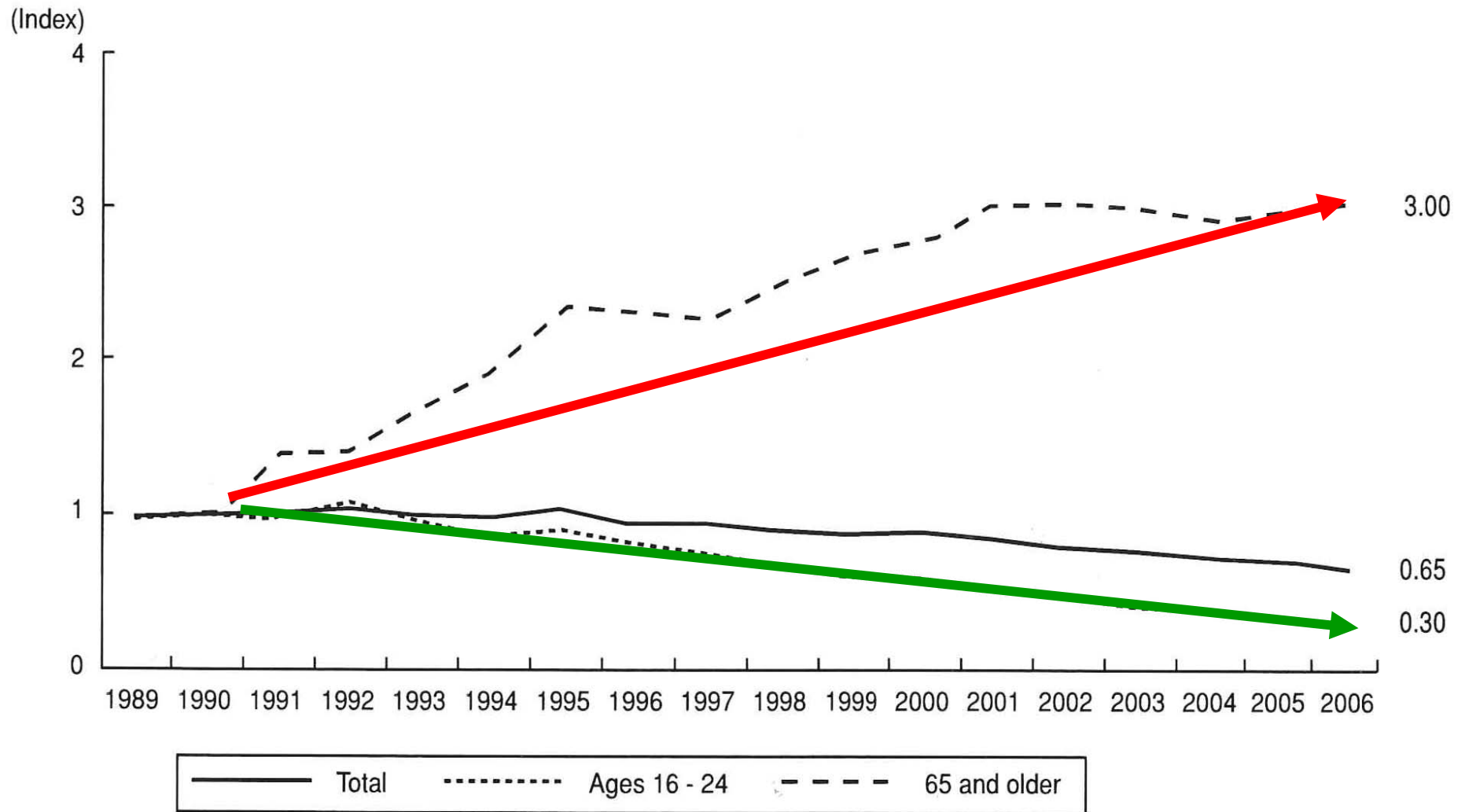
Changes in Traffic Accident Fatalities, by Age Group



Japan 2007 IATSS

- Notes:**
- Source: National Police Agency
 - Figures in parentheses show percentage (%) of fatalities by age group.

Changes in Fatal Accidents Caused by Primary-party Automobile Drivers (Young and Elderly)

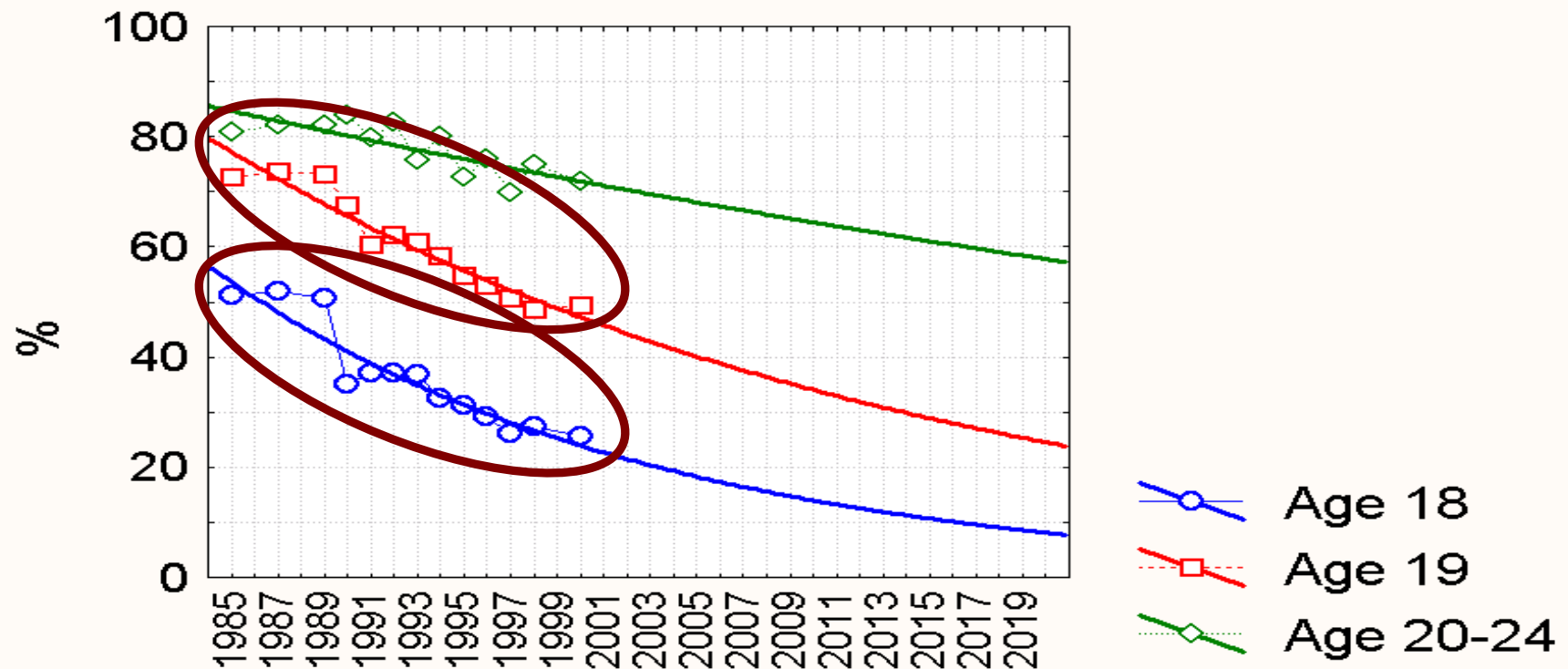


Notes: 1. Source: National Police Agency
 2. Index figures are based on 1989 (= 1).

Swedish strategies for improving safety among young drivers

Nils P. Gregersen, VTI, 2002

Proportion licences for age groups 18, 19 and 20-24 between 1985 and 2000 in Sweden



Citizens, decision makers, traffic safety and decision making process in Finland 2006

Kati Hernetkoski, Esko Keskinen, Mika Hatakka and Ville Pitkänen
University of Turku
Department of Psychology
Department of Political History, Centre for Parliament studies

Main finding

Citizens and decision makers both were safety oriented e.g. in accepting safety increasing restrictions

but decision makers thought that citizens would not be as safety minded as decision makers were

and decision makers also thought that citizens were not as safety minded as citizens were in reality

**Considering safety measures for drivers
we have to take care of**

**drivers' skills,
drivers' motives,
drivers' competencies,**

**decision makers' knowledge and motives
creating and affecting culture and values,
regulations, environment and vehicles**

Safe driving to you.

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