MOVINGs

Parliamentary spring breakfast

– Keynote lecture: Prof. Dr. Ralf Risser* –

Tuesday, 14 May 2013
08:00 – 09:15 a.m.
Restaurant *Tucher am Tor*
Pariser Platz 6a
10117 Berlin-Mitte
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Inappropriate Speed – Accident Cause No. 1

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**„We speed
because we do not feel
the consequences"**

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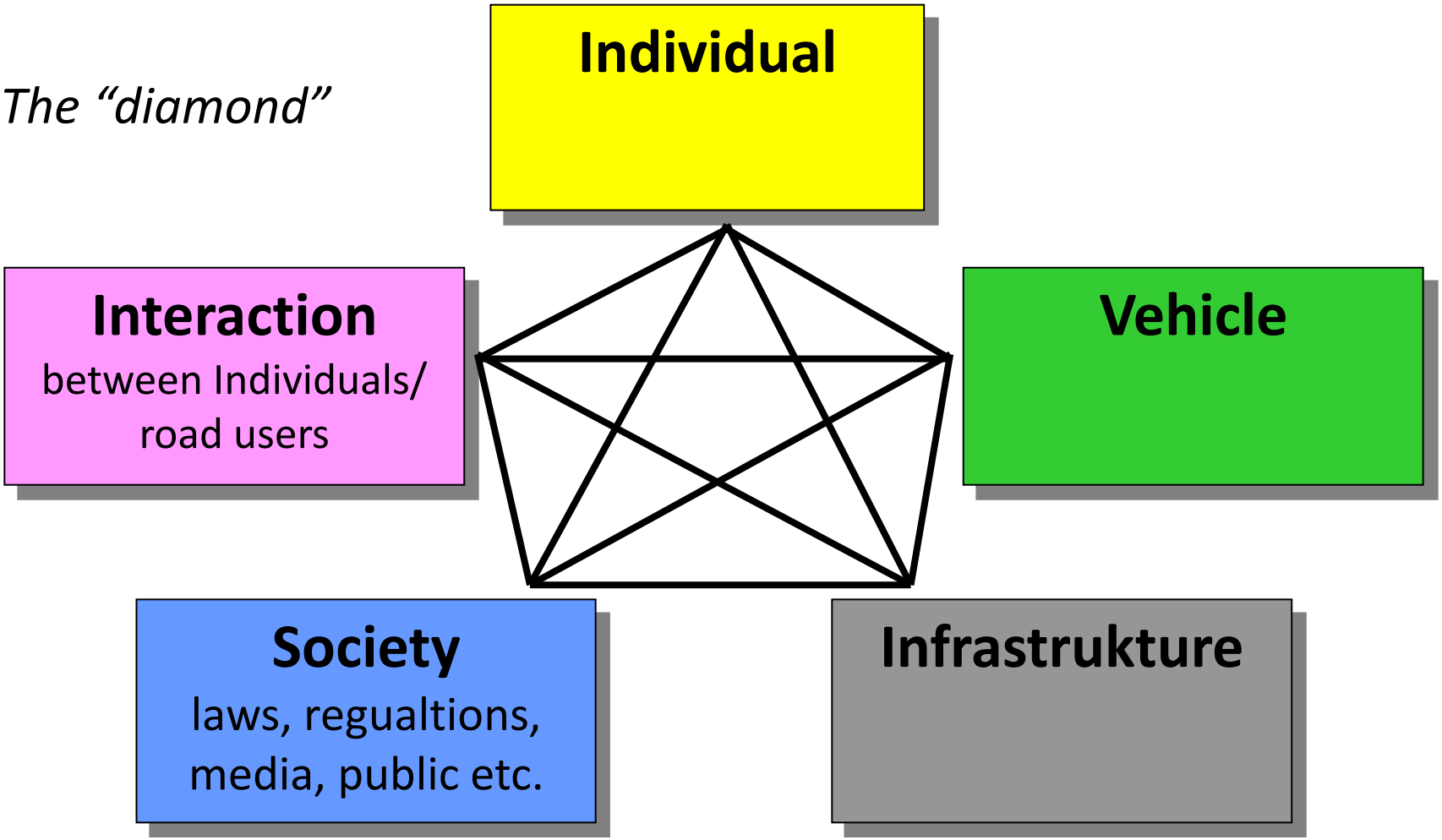
What influences our traffic behaviour?

The "diamond"



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Two Comments

Concerning suggestions of raising speed limit on motorways in Austria:

1) old speed limits are no longer valid for the new and safer cars that we have today,

2) most people drive faster than 130 anyway → it would be more honest to have a 160 km/h limit.

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Behaviuour problems in traffic

Two types of traffic infringements

Endanger myself and others

- Speeding/inappropriate speed (Limit/Situation)
- Driving against red lights
- Lacking seatbelt use

Disadvantage others by violating rules

- Obstruction of traffic/other traffic users (e. g. illegal parking)
- Driving on emergency lane
- No/lacking insurance coverage

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SPEED: FACTS

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Exponential model by G. Nilsson

(v_1/v_0) ➔ *Number of accidents*

$(v_1/v_0)^2$ ➔ *Number of injured road users*

$(v_1/v_0)^3$ ➔ *Number of severely injured road users*

$(v_1/v_0)^4$ ➔ *Number of killed road users*

v_0 = speed before change, v_1 = speed after change

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One example

Speed change	90 →	91 →	+1,01%
Alle Verletzten	1400 →	1431 →	+2,20%
Alle Schwerverletzten	500 →	520 →	+3,40%
Alle Getöteten	100 →	104 →	+4,50%

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Relative Risks of Involvement in a Casualty Crash

Comparision speed vs. alcohol

Speed		Alcohol	
Km/h	**Relative Risk**	**g/100ml**	**Relative Risk**
60	1.0	Zero	1.0
65	2.0	0.05	1.8
70	4.2	0.08	3.2
75	10.6	0.12	7.1
80	31.8	0.21	30.4

Kloeden CN, McLean AJ, Moore VM & Ponte G 2000, Travelling speed and the risk of crash involvement, Volume 1: Findings, NHMRC Road Accident Research Unit, The University of Adelaide

This study shows that elevated speeds are at least as huge a problem as elevated BAC.

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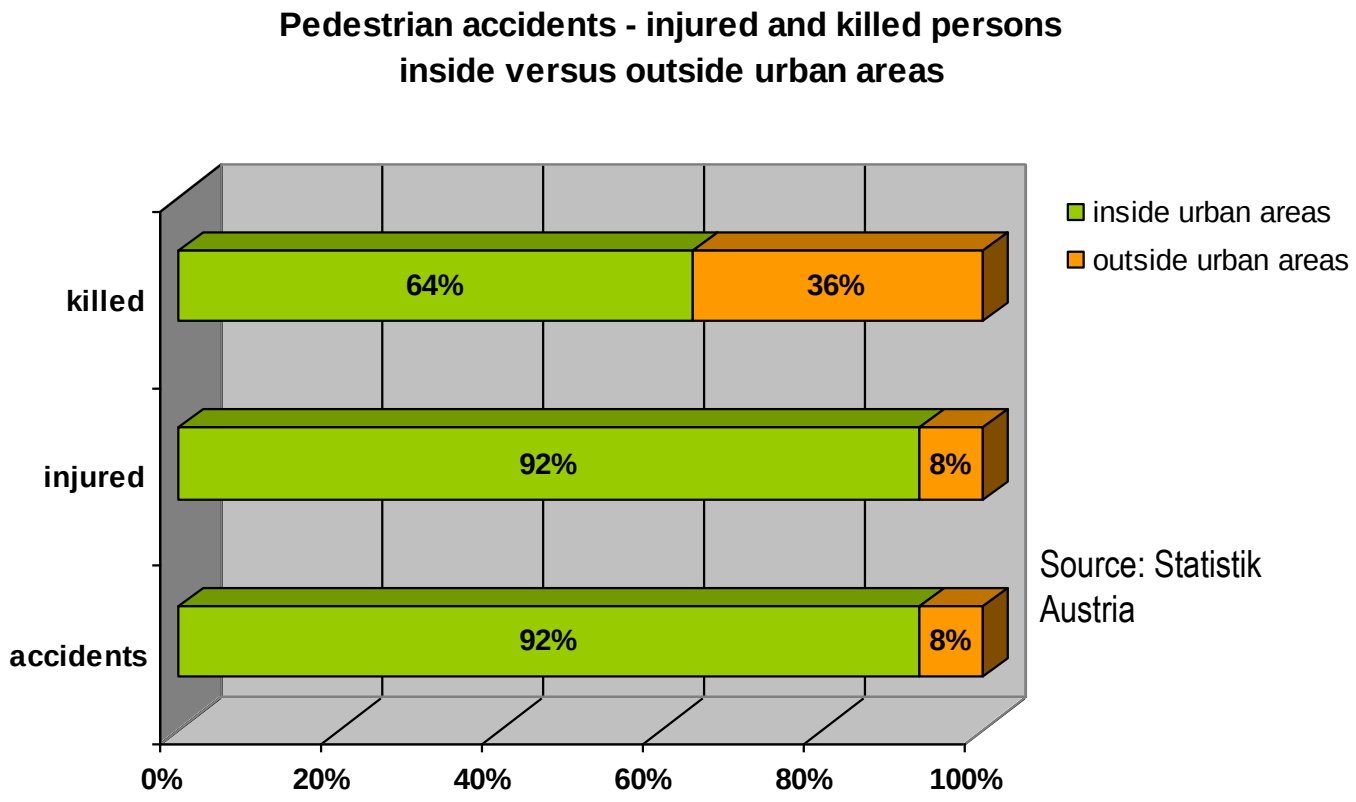
Safety of pedestrians

Safety of pedestrians is precarious: lacking or very bad walking conditions in rural areas cause severe safety problems.



Source: Statistik Austria

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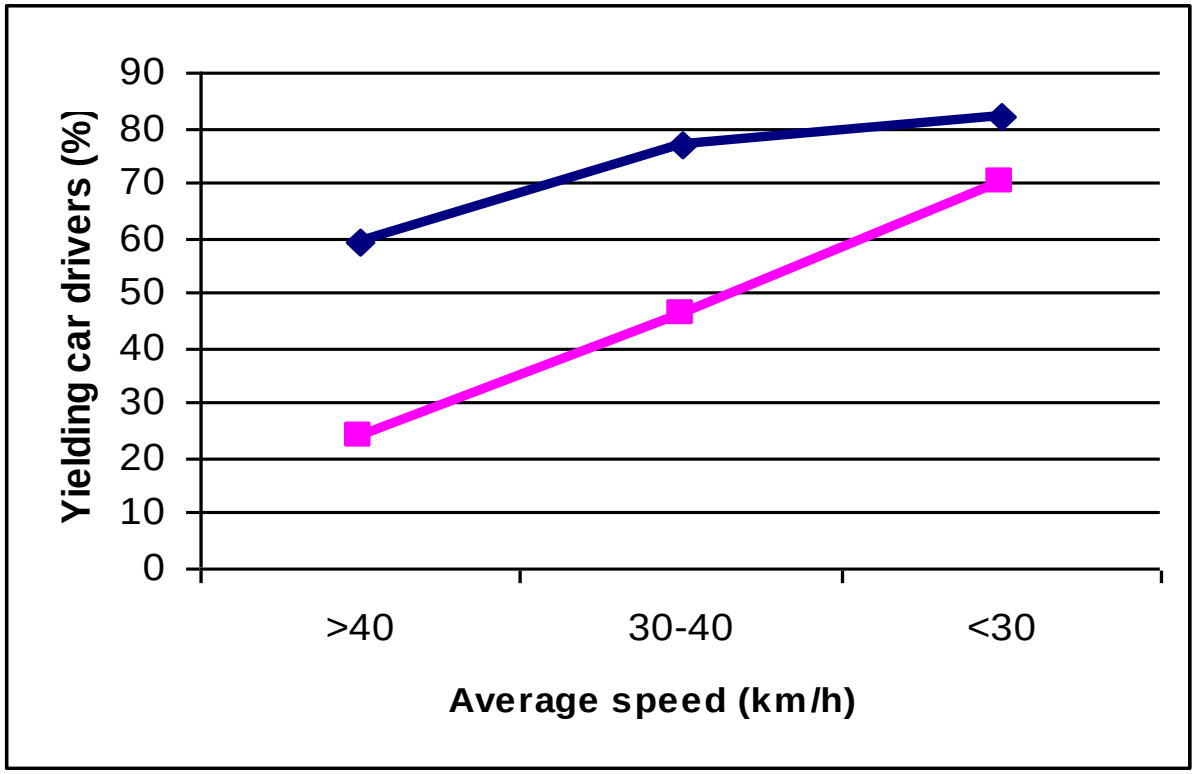
Car drivers make pedestrians renounce their right of way

→ **Pedestrian**

→ **Cyclist**



The faster car drivers go the more they make pedestrians and cyclists renounce their right of way, (Várhelyi, A. 1996)

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SPEED: HUMAN FACTORS

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Why speeding?

Shorter journey times (subjectively)
time pressure/stress
fun, excitement
inattention

Relevant personality traits like

- thrill or sensation seeking
- risk-taking
- ego-gratification

Drivers consider their own driving abilities as:

- above average,
- experience speed limits as erroneous or unnecessary,
- their cars as very well equipped,
- feel forced to speed due to other road users` behaviour.

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Why certain driving mistakes sustain over a long time?

- Often no immediate negative feedback (e.g. after speeding)

- Car drivers experience infringements of other car drivers as provocation and intentional act against the own person
  - ➔ "Others do not respect rules, so why should I"

- Driver is faster (positive feedback).

- Driver often feels pushed by others to speed.

- Speeding as a common behaviour

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The issue of subjective safety: sie steuert unser Verhalten

- This is the problem: we feel safe even when objectively there is a risk, which regarding the number of road users leads to accidents.

- We are not acting based on interpretation of statistics, but based on what degree of safety or lack of safety we perceive.

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The speeding problem is not felt sufficiantly as an individual problem

• At the same time, an acceptable speed level is a a zentral requirement for improvement of road safety – e. g. “vision zero”.

That’s why ➔

• individuals need help to adjust speed in an appropriate way
• such help should derive
  – from the vehicle → technology,
  – from infrastructure → self-explaining roads
  – from politics → clear announcements!

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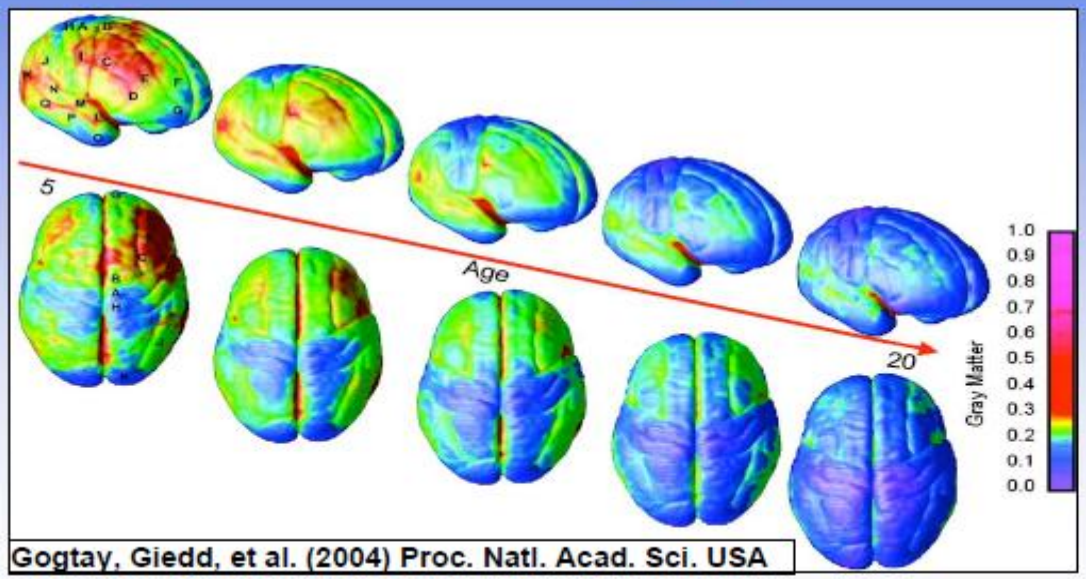
We show novice drivers violation of rules

➔ Novice drivers experience behaviour by successful adults. → The initiation comes from even “clearer” behaviour of drivers as of successful adults.

➔ But novice drivers lack routine and their impulse control is not yet developed.

Brain Maturation from Ages 5 to 20



Gogtay, Giedd, et al. (2004) Proc. Natl. Acad. Sci. USA

Significant brain growth and development occurs during adolescence, and continues into the twenties.

Some studies show that this growth and development extends to the age of 30!

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Thank you

for your attention !