Careless but also clueless?

hazard perception skills of young adolescent cyclists

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Why this study?

1. Adolescent brain development may make road accidents unavoidable

2. Cycling is promoted to combat obesity, air pollution, congestion, and global warming

3. Cycling is hip and trendy
Three main questions

1. Is there a road safety problem?
2. What are contributing factors?
3. Which interventions are effective?
   - Traffic education
   - A safe road system
Adolescent changes and mortality

Puberty

independence travel further away from home

Crash & severity
Natural & Unnatural death by age

![Chart showing death by age and cause.](chart.png)

- **Disease**
- **Other non-natural**
- **Other Accidents**
- **Road Crashes**
(Road) mortality by gender

Females

Males

- Other non-natural
- Other Accidents
- Road Crashes
Over represented in any type of risk behaviour
Changes & mobility patterns?

Adolescent development

From the safe backseat vulnerable as cyclist of moped rider

High exposure to risk

Independent & further away from home with friends

Crashes & severity
Changes: inexperience and motivations

- Adolescent development
- Independent & further away from home with friends

From the safe backseat vulnerable as cyclist of moped rider

- Inexperienced
- Risk behaviour

Task complexity

High exposure to risk

Crashes & severity
Adolescent development

Independent & further away from home with friends

Traffic education

From the safe backseat vulnerable as cyclist of moped rider

Inexperienced

Risk behaviour

Task complexity

High exposure to risk

Crashes & severity
An example
Two programmes

• Two different perspectives
  – Deliberate risky behaviour
  – Lack of experience

• Two different didactical approaches
  – Increase risk awareness
  – Train simple rules of thumb

• Two effects
  – Increase risk awareness does NOT help
  – Rules of thumb DO help
No effect on tasks in “real” traffic
Results …

• Identification of blind spot location improves

• Safe behaviour in complex traffic does not improve

• Before the training only 0% showed safe behaviour in real traffic

• After the course this rose marginally to 10%
An unsafe road environment?

- Adolescent development
- Independent & further away from home
- From the safe backseat vulnerable as cyclist of moped rider
- Inexperienced
- Risk behaviour
- Task complexity
- Crashes & severity
- High exposure to risk

The road environment
An example:
Other measures

• Extra mirrors lorries -40%

• Cycle airbag -40%

• Underride protection -35%
Intervention: a safe traffic system?

Adolescent development

Independent & further away from home

The road environment

From the safe backseat vulnerable as cyclist of moped rider

Inexperienced

Risk behaviour

Task complexity

Crashes & severity

Safe traffic system

High exposure to risk

Intervention: a safe traffic system?

Adolescent development

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High exposure to risk
Summary

• Road traffic is one of the prime causes of death among youngsters

• This starts as young as the age of 10

• Young cyclists are inexperienced in complex traffic

• Learning requires effective education programmes

• Evaluation of programmes is essential

• Judgement based on intuitions are not good enough

• Education may be good, safe road systems are probably even better