The human being in the centre of Vision Zero

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Vision Zero in der Praxis,
7th of December, 2016
- Body and brain
- Technology
- New challenges

Photo: Frank McKenna
Body and brain

Photo: Ashley Bean

Photo: Jesse Orrico
Brain – problem 1

The first Administrator of the US National Highway and Traffic Safety Administration in 1966:

- Seat belts for all occupants
- Energy-absorbing steering column
- Penetration-resistant windshield
- Dual braking system
- Padded instrument panel
Seat belts
Separation
Road fatalities in Norway 1946-2015
Speed

70-80 km/h
A safe car can protect occupants up to 70-80 km/h in a head-on collision

50 km/h
A safe car can protect occupants up to 50 km/h in a side collision

30-40 km/h
Most unprotected road users survive if a car travelling 30 - 40 km/h hits them

Source: Anna Vadeby, VTI
Killed in traffic accidents - 2015

Source: ETSC (March 2016)
«.. more efficient brakes .. will not in themselves make driving safer.»

(Gibson & Crooks 1938, p. 458).

Improved lighting = increased speed
Intelligent cars - ADAS
Distraction – an increasing problem

Source: The "DIAMOND" proposal to H2020
Eventually saved by self-driving cars?

Governments race to outline future plans for self-driving cars

November 29, 2016 News
Killed or injured per million personkm
Norway 1985 - 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Car drivers</th>
<th>Car passengers</th>
<th>Pedestrians</th>
<th>Pedal cyclists (d+p)</th>
<th>Moped (d+p)</th>
<th>Motorcycles (d+p)</th>
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</thead>
<tbody>
<tr>
<td>1985</td>
<td>0.19</td>
<td>0.19</td>
<td>0.64</td>
<td>1.43</td>
<td>2.12</td>
<td>4.20</td>
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<td>1992</td>
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<td>0.17</td>
<td>0.79</td>
<td>1.22</td>
<td>1.45</td>
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<td>1998</td>
<td>0.17</td>
<td>0.17</td>
<td>0.68</td>
<td>1.23</td>
<td>1.22</td>
<td>1.33</td>
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<tr>
<td>2001</td>
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<td>0.15</td>
<td>0.63</td>
<td>1.08</td>
<td>1.05</td>
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<td>2005</td>
<td>0.14</td>
<td>0.14</td>
<td>0.47</td>
<td>0.82</td>
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<tr>
<td>2009/10</td>
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<td>0.11</td>
<td>0.27</td>
<td>0.62</td>
<td>0.80</td>
<td>0.58</td>
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<tr>
<td>2013/14</td>
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<td>0.06</td>
<td>0.26</td>
<td>0.54</td>
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<td>0.46</td>
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</table>
New challenges

Photo: Facebook
Road fatalities in The Netherlands

Source: Marjan Hagenzieker, SWOV
Road fatalities in The Netherlands

Source: Marjan Hagenzieker, SWOV
Cyclists injured in Oslo in 2014

Police reported: 117
Hospital data: 1866
Cyclist injuries in Sweden 2007-12
Data from STRADA

<table>
<thead>
<tr>
<th>Category</th>
<th>All injuries</th>
<th>Serious</th>
<th>Very serious</th>
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<tbody>
<tr>
<td>Single</td>
<td>77 %</td>
<td>78 %</td>
<td>73 %</td>
</tr>
<tr>
<td>Cycle/Motorvehicle</td>
<td>12 %</td>
<td>12 %</td>
<td>16 %</td>
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<tr>
<td>Cycle/Cycle</td>
<td>7 %</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Cycle/Moped</td>
<td>1 %</td>
<td>1 %</td>
<td>1 %</td>
</tr>
<tr>
<td>Cycle/Pedestrian</td>
<td>1 %</td>
<td>1 %</td>
<td>1 %</td>
</tr>
<tr>
<td>Cycle/Other</td>
<td>1 %</td>
<td>2 %</td>
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<tr>
<td>Total</td>
<td>44 098</td>
<td>8 411</td>
<td>1 098</td>
</tr>
</tbody>
</table>

Key challenges ahead for Vision 0

- The mix of automated and manual driving
- Distraction
- Increase of cyclists and pedestrians
Thank you for your attention!

Photo: Everton Vila