An Overview of the Canada Naturalistic Driving and Canada Truck Naturalistic Driving Studies

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Inn at Virginia Tech
Blacksburg, VA
Canada NDS & Canada Truck NDS

- Canada NDS was designed to be ‘sister site’ to SHRP2 NDS
  - Notable exceptions are over-the-shoulder camera
- Addition of 25 commercial heavy vehicles were also instrumented
  - These drivers ranged from coast to coast, regional, and local/short haul.
CNDS Primary Research Questions

- What is the distribution of causal/contributing factors to crashes and near-crashes in Saskatchewan, Canada?
  - Rural highways
  - Winter conditions

- What is the prevalence of risky behaviors?
  - Of primary interest is speeding (per speed limit but also per roadway conditions), secondary task engagement, drowsiness, and impairment.
CNDS Study Data collection

- 140 vehicles were instrumented

- Targeted 125 participants/Replaced some participants.
  - Participants were recruited for 24 months, 18 months, or 12 months
  - Data collection occurred from 6/2013-10/2015

- Recruited participants through SGI
  - SGI sent letters to target the population of interest
  - Participants were paid $450 per year

- Questionnaires/Surveys (Same as SHRP2)
## Study Participant Numbers

<table>
<thead>
<tr>
<th></th>
<th>Age 18-25</th>
<th>Age 26-65</th>
<th>Age 66+</th>
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<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>High Mileage Commuter</td>
<td>3</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Low Mileage Commuter</td>
<td>21</td>
<td>18</td>
<td>15</td>
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</tbody>
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Camera Image Samples

- Forward View - color
  - 15 Hz continuous video
  - 640x320 pixels

- Driver Face – Rotated for max pixel efficiency

- Center stack – Pedal Interactions

- Right-Rear View

- Periodic still cabin image, permanently blurred for passenger anonymity
Canada Naturalistic Truck Driving Study
Project Data Collection

- 25 trucks completed data collection
  - 25 participants (3 teams)
  - 2 females
  - 5 trucks with long routes (7-10 days on and 3-4 days off)
  - 2-3 double-trailer drivers
Procedure

- Collected questionnaire/assessments on drivers
  - Based upon other commercial NDS studies
  - Driver logs
  - Driver abstracts

- Instrumented 25 trucks (with reinstrumentations)
  - Similar DAS as light vehicle study with cameras, radar, accelerometers, etc.

- Collect data for ~12 months = ~22 data years.
Data is publically available...

- Insight Canada Website –
  - Similar set up to SHRP2 NDS Insight website
  - [https://insight.canada-nds.net/](https://insight.canada-nds.net/)

- Insight Canada Truck Website –
  - Under development...to be released early 2019
Acknowledgements

- Council of Deputy Ministers Responsible for Transportation and Highway Safety
- Transportation Association of Canada
- Canadian Council of Motor Transport Administrators
- Saskatchewan Highways
- U of Saskatchewan
- Transport Canada
- Saskatchewan Government Insurance
- Others...