First Ten Hours of Supervised Practice Driving

Fourth International Symposium on Naturalistic Driving Research

Study Design

Participants

- 83 parent-teen dyads
- Blacksburg, Roanoke, VA
- Permit to licensure +12 months

Method

- Continuous in-vehicle recording
  - 6 cameras → video was coded
  - Audio → coding in progress
  - GPS (location and speed)
  - Accelerometers (G-forces)

- Video Sampling
  - Trip files: driver, supervisor, conditions
  - First, Middle and Last 10 hours
Video Sampling

- Randomly sampled 30-sec segments from each 5-min period of driving

- **Coded for:**
  - Driving Conditions
  - Driving Instruction
  - Driving Errors
  - Secondary Task Engagement
Conversations – First 10 hours

- In 87% of clips there was conversation present
- 69% of conversations parents dominated

Driving-related conversation
Defining Driving Instruction

Real time
- Related to the present time or immediate future related to events that are occurring during the drive

Higher order
- Conveys general principles of driving
- May result from a specific event, but generalizes to other situations
## Driving Instruction

<table>
<thead>
<tr>
<th>Topics</th>
<th>Real Time</th>
<th>Higher Order</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
<td>“You’re going to make a left turn at the next traffic light.”</td>
<td>“I like to think about the route I’m going to take before I leave home…”</td>
</tr>
<tr>
<td><strong>Hazard Detection</strong></td>
<td>“You’ve got a car pulling out of a drive way up ahead.”</td>
<td>“You’ve got to adjust to the road situation. If it rains, you’ve got to adjust to that.”</td>
</tr>
<tr>
<td><strong>Vehicle Handling</strong></td>
<td>“Slow down. Slow way down. He’s pulling out.”</td>
<td>“Try leaving a few car spaces between yourself and the other vehicle.”</td>
</tr>
<tr>
<td><strong>Comment on Driving</strong></td>
<td>“You took that corner too fast.”</td>
<td>“When turning, be sure you are over in the far lane so no car pulls around you”</td>
</tr>
<tr>
<td><strong>Asks Question About Driving</strong></td>
<td>“What are you going to do you when that bus stops ahead of you?”</td>
<td>“How often should you be checking your rear view mirror?”</td>
</tr>
<tr>
<td><strong>Rules of the Road</strong></td>
<td>“What does this sign mean?”</td>
<td>“Always follow the speed limit”.</td>
</tr>
</tbody>
</table>
Topics of Driving Instruction

- Navigation
- Give Warning/Detect Hazard
- Vehicle Handling or Operation
- Remarking on Driving Behavior
- Asks Question About Driving Task
- Rules of the Road

Bars represent:
- Real Time
- Higher Order
# Driving Errors

<table>
<thead>
<tr>
<th>Definitions</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td>Distraction</td>
<td>Inattention, distraction or eyes removed from roadway</td>
</tr>
<tr>
<td>Failure to Stop</td>
<td>Failure to yield or stop</td>
</tr>
<tr>
<td>Hazard Detection</td>
<td>Failure to detect a hazard</td>
</tr>
<tr>
<td>Speed Management</td>
<td>Driving too slow or too fast for current conditions, hard breaking</td>
</tr>
<tr>
<td>Vehicle Management</td>
<td>Crossing lines, driving the wrong way, overcorrecting, following too closely or improper vehicle operation</td>
</tr>
<tr>
<td>Other</td>
<td>Other error types</td>
</tr>
</tbody>
</table>
Driving Errors

- Other Error
- Vehicle Management
- Speed Management
- Hazard Detection
- Failure to Stop
- Distraction

Locations:
- Parking Lot/Driveway
- Residential/Rural
- Suburban/Commercial
- Urban/Commercial
- Highway
Secondary Tasks During the First 10 Hours

- **14%** of clips included a secondary task

![Pie chart showing various secondary tasks](chart.png)

- Cell Phone & Electronics
- External Distractor
- In-vehicle device
- Eating
- Other
- Grooming
- Reaching/Moving Objects
Thank you!

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