Extending Naturalistic Driving Research to the Patrol Car
A Pilot Project
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Objective
- Investigate officer driving behavior during patrol through naturalistic observation

Related Research
Simulation (Garrison et al. 2012):
- Impact of dispatch communication on law enforcement patrol situations – National Institute of Justice
- Observed patrol performance of an officer in a simulated and controlled environment
- Varied dispatch format and information availability -- evaluated memory for details

Real-world comparisons:
- What really happens in a patrol vehicle, day to day?

Shift Details
- Observation of one month patrol – 12-hour shifts (1400-0200)

Process
- Videos recorded
- Video data coded into discrete events
- Various tasks and time frames recorded
- Proportion time spent multitasking and driving

<table>
<thead>
<tr>
<th>Task</th>
<th>Frequency</th>
<th>Time Spent</th>
<th>% Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed check w/ Radar</td>
<td>24.3%</td>
<td>1:04:26</td>
<td>53.0%</td>
</tr>
<tr>
<td>Radio Communication</td>
<td>11.2%</td>
<td>0:18:09</td>
<td>14.9%</td>
</tr>
<tr>
<td>Interaction w/ Console</td>
<td>7.7%</td>
<td>0:04:35</td>
<td>3.8%</td>
</tr>
<tr>
<td>Other Equipment</td>
<td>4.2%</td>
<td>0:02:34</td>
<td>2.1%</td>
</tr>
<tr>
<td>Drinking a Beverage</td>
<td>2.9%</td>
<td>0:02:40</td>
<td>2.2%</td>
</tr>
<tr>
<td>Cellphone</td>
<td>1.8%</td>
<td>0:03:13</td>
<td>2.7%</td>
</tr>
<tr>
<td>Seat belt</td>
<td>0.7%</td>
<td>0:00:17</td>
<td>0.2%</td>
</tr>
<tr>
<td>Smoking a Cigarette</td>
<td>35.3%</td>
<td>0:19:09</td>
<td>15.8%</td>
</tr>
<tr>
<td>Grooming</td>
<td>6.6%</td>
<td>0:02:26</td>
<td>2.0%</td>
</tr>
<tr>
<td>Other Tasks</td>
<td>5.2%</td>
<td>0:03:16</td>
<td>2.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>02:02:00</td>
<td>100%</td>
</tr>
</tbody>
</table>

Results
- Proportion time spent multitasking : 46%

Implications
- Law enforcement patrol demands substantial attention across multiple tasks
- Because multitasking is critical for performance, technology should support performance and mitigate distraction
- Not all distractions result from technology – more difficult to limit officer engagement
  - Mindset – ‘Mobile Office’
  - Break from the monotony, stress of the job demands
- Comparison (RCMP Survey): 39% driving time spent interacting with equipment (MDT)

References
Garrison, T. M. et al. (2012). Sources of Cognitive Load in a Simulated Law Enforcement Patrol Task. 4th International Conference on Automotive User Interfaces and Interactive Vehicular Applications. Portsmouth, NH.