Autolaw 3.0 4.0!

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Law is messy but important

Automated vehicles are probably legal

Automakers will probably bear a greater share of crash costs

Data will definitely lead to both problems and solutions
Human-machine systems

Crash Causes

- Human (93%)
- Vehicle (12%)
- Environment (34%)

“Responsibility”? “Control”?
Law in the real world

What law requires

What technology requires

What users actually do

“Responsibility”? “Control”?
This won’t be pretty
Law is infrastructure

- Increase certainty
- Influence behavior
- Manage relationships
## Managing relationships

<table>
<thead>
<tr>
<th></th>
<th>Road user</th>
<th>Automaker</th>
<th>Insurer</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road user</strong></td>
<td>Rules of road</td>
<td>Warranties</td>
<td>Vehicle policy</td>
<td>Gas tax</td>
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<td></td>
<td>Tort law</td>
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<td></td>
<td>Rules of road</td>
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<td>Privacy</td>
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<tr>
<td><strong>Automaker</strong></td>
<td></td>
<td>Indemnification</td>
<td>Subrogation</td>
<td>FMVSS</td>
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<td></td>
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<td>Intellec. prop.</td>
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<td>Privacy</td>
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<tr>
<td><strong>Insurer</strong></td>
<td></td>
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<td>Reinsurance</td>
<td>Insur. law</td>
</tr>
<tr>
<td><strong>Government</strong></td>
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<td>MAP-21</td>
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</tbody>
</table>
Managing *government* relationships

- State governments largely regulate drivers
- US government largely regulates vehicles
- But what if the vehicle *is* the driver?

<table>
<thead>
<tr>
<th>US Government</th>
<th>Infrastructure</th>
<th>Vehicle</th>
<th>Driver</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Design standards</td>
<td>FMVSS</td>
<td>Road traffic treaty</td>
</tr>
<tr>
<td></td>
<td>Radio spectrum</td>
<td></td>
<td>Interstate trucking</td>
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<tr>
<td></td>
<td>Highway trust fund</td>
<td>Preemption</td>
<td>Highway trust fund</td>
</tr>
<tr>
<td>State Governments</td>
<td>Construction</td>
<td>Registration</td>
<td>Licensing</td>
</tr>
<tr>
<td></td>
<td>Operation</td>
<td>Insurance</td>
<td>Vehicle codes</td>
</tr>
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</tbody>
</table>
# Rough hierarchy of relevant law

<table>
<thead>
<tr>
<th>Level</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>US constitution</td>
<td>Supremacy Clause / Commerce Clause</td>
</tr>
<tr>
<td>US statutes and treaties</td>
<td>1949 Convention on Road Traffic (Geneva)</td>
</tr>
<tr>
<td>US rules/regulations</td>
<td>Federal Motor Vehicle Safety Standards</td>
</tr>
<tr>
<td>State constitutions</td>
<td></td>
</tr>
<tr>
<td>State statutes</td>
<td>State vehicle codes (rules of the road)</td>
</tr>
<tr>
<td>State rules/regulations</td>
<td>Nevada DMV’s autonomous driving regulation</td>
</tr>
<tr>
<td>Common law</td>
<td>Background rules for tort law</td>
</tr>
<tr>
<td>Private norms/standards</td>
<td>ISO / SAE / ANSI</td>
</tr>
</tbody>
</table>
Nevada, Florida, and California are the only states to expressly regulate “autonomous vehicles”.

This does NOT mean that automated vehicles are illegal elsewhere.
Presumption of legality
Complications, but not prohibitions

- How might NHTSA act preemptively and reactively to these technologies?
- How might a court interpret the Geneva Convention’s requirement that every vehicle have a driver able to control it?
- How might courts and agencies apply existing state vehicle law?
Application of existing law

- In every state, the precise application of existing law is unclear, because that law assumes that humans drive vehicles using real-time human judgment.

- California Vehicle Code
  - 21700. The driver of a motor vehicle shall not follow another vehicle more closely than is reasonable and prudent.
  - 22350. No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent.
  - 23103. A person who drives a vehicle upon a highway in willful or wanton disregard for the safety of persons or property is guilty of reckless driving.
What is “reasonable and prudent”?

- As good as:
  - A perfect human driver?
  - An average human driver?
  - A computer plus a human?

- Measured through:
  - Field testing?
  - Simulation?
  - After a crash?

- One key: Standards at the international, national, state, and industry levels
I may be *civilly liable* for injuries that I cause, even if I am acting lawfully.

- Civil liability
- Tort law
- Design defects
- Products liability
- Strict liability
- Negligence
- Lawsuits
- (Warranty claims)
- (Disclosure claims)
- (Class actions)
Liability is NOT binary

Owner?  Dealer?
Operator?  Victim?
Manufacturer?  Supplier?
Data provider?  Designer?
Employer?  Facility operator?
Service provider?
Automakers will face liability…

- Automated vehicles won’t can’t be perfect: Design decisions and omissions will cause, exacerbate, and fail to prevent injuries
- If these choices are unreasonable, companies will be liable for the resulting injuries
- Even if these choices are reasonable, companies may suffer reputational losses
In theory, companies can charge more for their products and services to cover these expected liability and reputational losses.

The problem (for companies) is that predicting these costs is difficult.

The problem (for society) is that this uncertainty means consumers may pay too much or wait too long.
Managing this uncertainty

- How can regulators, automakers, and insurers better understand the *technical, legal, and reputational risks*?
- What lessons can be learned from airbags and electronic stability control litigation?
- What are the legal aspects of remote software updates and virtual recalls?
Data as problem and solution

- What data might be produced or required?
  - Assume the "collection" of any and all data
- Who will own and manage those data?
- How will those data be used by
  - Governments?
  - Companies?
  - Litigants?
- How will those data be abused?
Law is infrastructure

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