Do advances in vehicle safety features influence driver behaviour?

Robyn Robertson, M.C.A.
President & CEO
Traffic Injury Research Foundation
NICC 2013, Lac Leamy, Quebec
September 24th, 2013

Technology: Unintended consequences
**Introduction**

> Advances in technology have made new vehicle safety features increasingly available.
> Features undergo testing by manufacturers; some of them have been independently evaluated by research.
> Features have tremendous potential to increase road safety, if used properly.
> Safety is one of the top priorities among Canadians purchasing a vehicle.

But.....safety features can only keep us safe IF used properly and within acceptable parameters.

> Public knowledge and awareness of safety features is low.
> There is evidence that drivers modify their driving habits in response to knowledge that their vehicle is equipped with safety features.
> » behavioural adaptation
> » risk homeostasis
Method

- National public opinion poll to explore familiarity, attitudes, concerns regarding use of key safety features and safe driving habits.
- Questionnaire involved 120 items; 25 minutes to complete.
- Survey fielded by phone/online to representative sample of 2,500 Canadian drivers (Nov ‘11 to Jan ‘12).
- Sample stratified by province and weighted by gender and age to avoid bias.

Familiarity with features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Percent familiar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-lock braking system</td>
<td>80.4</td>
</tr>
<tr>
<td>Traction control</td>
<td>53.5</td>
</tr>
<tr>
<td>Brake assist</td>
<td>32.6</td>
</tr>
<tr>
<td>Electronic stability control</td>
<td>31.4</td>
</tr>
<tr>
<td>Electronic brake force distribution</td>
<td>31.4</td>
</tr>
<tr>
<td>Adaptive headlights</td>
<td>30.6</td>
</tr>
<tr>
<td>Collision warning systems</td>
<td>23.6</td>
</tr>
<tr>
<td>Lane departure warning systems</td>
<td>21.6</td>
</tr>
<tr>
<td>Brake override</td>
<td>17.0</td>
</tr>
<tr>
<td>Driver monitoring systems</td>
<td>14.6</td>
</tr>
</tbody>
</table>
Ease of use

- Anti-lock braking system: 79.7%
- Traction control: 69.2%
- Adaptive headlights: 68.2%
- Lane departure warning systems: 64.1%
- Brake assist: 62.1%
- Electronic brake force distribution: 61.3%
- Collision warning systems: 60.0%
- Electronic stability control: 56.9%
- Brake override: 54.1%
- Driver monitoring systems: 52.9%

Make them a better driver

- Anti-lock braking system: 58.9%
- Traction control: 51.5%
- Adaptive headlights: 47.0%
- Collision warning systems: 46.5%
- Brake assist: 46.1%
- Electronic brake force distribution: 45.9%
- Lane departure warning systems: 45.5%
- Electronic stability control: 41.0%
- Driver monitoring systems: 40.0%
- Brake override: 28.2%
Would take risks with features

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent who do it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive well over the speed limit</td>
<td>22.5%</td>
</tr>
<tr>
<td>Drive when distracted</td>
<td>16.2%</td>
</tr>
<tr>
<td>Drive when tired or fatigued</td>
<td>16.0%</td>
</tr>
<tr>
<td>Tailgate</td>
<td>8.6%</td>
</tr>
<tr>
<td>Fall asleep/nod off at the wheel</td>
<td>3.6%</td>
</tr>
<tr>
<td>Drink and drive</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

% who would do it with safety features:
- 19.2%
- 20.0%
- 13.1%
- 7.5%

Myths about safety features

- They allow me to drive faster and make it less likely I will be in a crash.
- They help me stop sooner so I can follow other vehicles more closely.
- Vehicle safety features protect occupants so seatbelts are not important.
- Vehicle safety features allow me to pay less attention when I drive.
Results

> Among survey respondents there was some incongruity between:
  » the desire to be safe on the road;
  » perceptions about how well safety features work; and,
  » existing beliefs about the relationship between driver behaviour and vehicle safety systems.
> This may be a result of lack of knowledge.
> This suggests that safety features alone may not translate into gains in reducing road crashes.

Some cautionary tales

> Public acceptance of safety technologies varies over time and across jurisdictions:
  » photo enforcement
  » intelligent speed adaptation
Conclusion

> Vehicle safety features may have great potential, but if they are not used properly, benefits are less likely to accrue.

> To help overcome knowledge gaps and help reach full potential of safety features, TIRF has created an educational program, called Brain on Board (www.brainonboard.ca).

> In essence, the program is meant to inform road users and to emphasize that using your brain on the road is the ultimate safety feature.
À propos du programme

Vous êtes-vous déjà demandé pourquoi l’ABS émet cet bruit? Ou comment le contrôle de la stabilité du véhicule fait-il pour maintenir votre voiture sur la route si vous abordez accidentellement un virage un peu trop vite?

Les études ont démontré que les équipements de sécurité automobiles peuvent prévenir les accidents et les blessures, surtout s’ils sont combinés avec des pratiques de conduite sécuritaires. Or, la majorité des automobilistes canadiens n’ont pas une bonne connaissance des nouvelles technologies de sécurité sur le marché, de leur fonctionnement et des circonstances dans lesquelles elles peuvent être utiles.

Pour en savoir plus sur LA TECHNOLOGIE DE SÉCURITÉ

- La sécurité active
- La sécurité passive
- Technologie d’aide à la conduite
- La sécurité automobile, une technologie en marche

Acknowledgements

The knowledge source for safe driving