USING A BEHAVIOURAL SCIENCE LENS TO REDUCE DISTRACTED DRIVING

BEHAVIOURAL INSIGHTS UNIT, GOVERNMENT OF ONTARIO

June 21, 2017

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To discuss how knowledge and methodologies from behavioural sciences can help combat distracted driving.

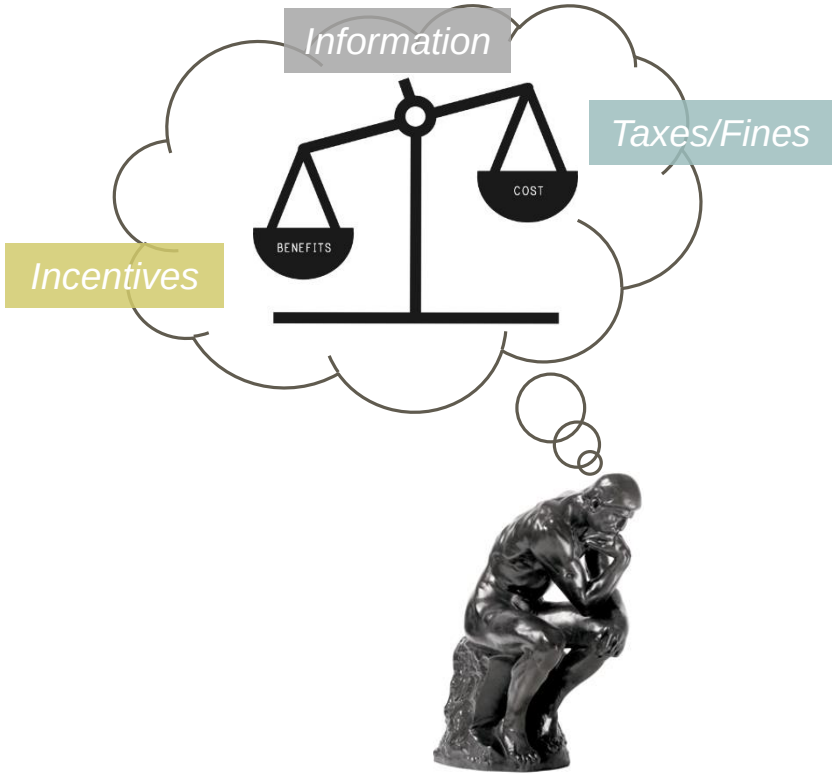
1. BEHAVIOURAL SCIENCE 101

TRADITIONAL MODEL OF DECISION MAKING

In order to decide whether…

- to stay in school;
- to eat a healthy diet;
- to save for retirement, etc.

We need to weigh the costs/benefits.

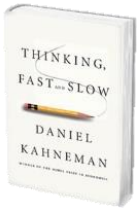


But often, we don't have the…

- Time;
- Memory;
- Awareness;
- Ability; or
- Motivation to engage in a complex cost-benefit analysis

Instead, much of our behaviour is guided by autopilot.

WE ARE OF TWO MINDS



System 1 (automatic)

Strengths

- Ancient, instinctual brain
- Fast
- Effortless
- Mental shortcuts

Weaknesses

- Focussed on the present
- Emotional
- Stereotypes
- Impulsive

System 2 (deliberative)

Strengths

- Flexible
- Capable of…
  - abstract and rational thought
  - thinking about the future
  - controlling system 1

Weaknesses

- Slow
- Effortful
- Easily fatigued
- Limited capacity

DESIGNING SERVICES WITH AUTOPILOT IN MIND

Two broad solutions:

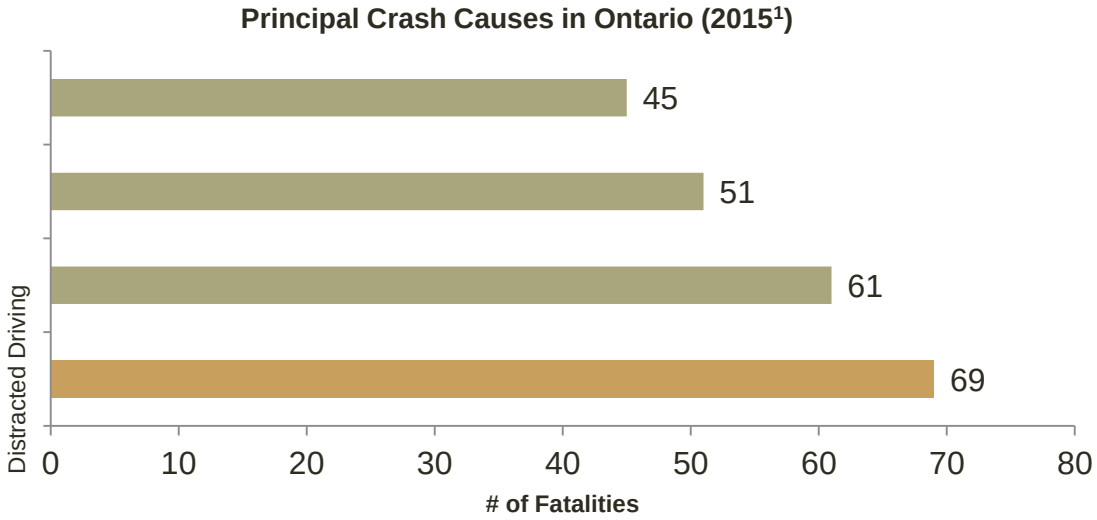
1. Encourage people to switch off autopilot and think their decision through
2. Shape the environment to help steer autopilot in the right direction

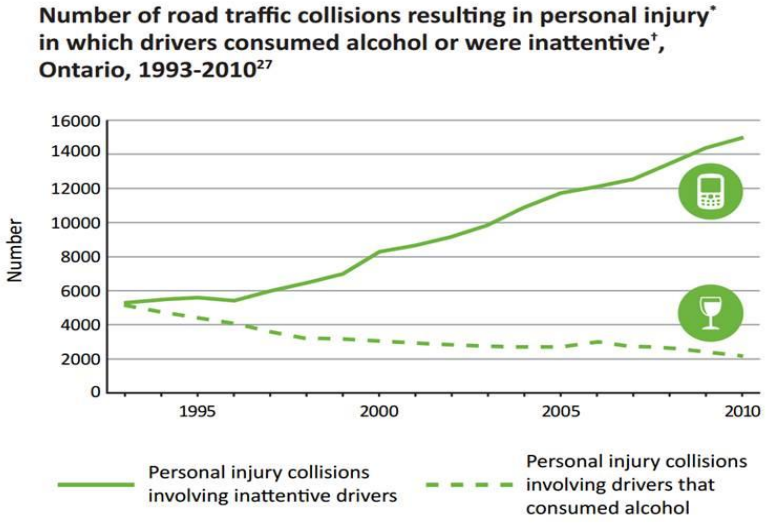
Reduced collisions by 36%

2. USING BEHAVIOURAL SCIENCE TO UNDERSTAND DISTRACTED DRIVING

DISTRACTED DRIVING IS THE LEADING CAUSE OF FATALITIES ON THE ROAD

- **Distracted driving** is the **leading cause of fatalities** on Ontario's roads.[1]
- Since 2000 the number of vehicular deaths in which distracted driving was a contributing factor have **doubled**.[2]
  - **One person** is **injured** in a distracted-driving collision **every half hour.** [2]
- **A driver using a phone** is **four times more likely** to **crash** than a driver focusing on the road.[2,3]
- Collisions due to inattentive driving are on the rise and far surpass those due to alcohol consumption[4]





1. OPP Statistics, retrieved from http://www.cbc.ca/news/canada/kitchener-waterloo/distracted-driving-largest-cause-of-fatal-ontario-road-crashes-2015-1.3490977
2. Ontario government collisions data, retrieved from https://www.ontario.ca/page/distracted-driving
3. McEvoy, S.P., Stevenson, M.R., McCartt, A.T., Woodward, M., Haworth, C., Palamara, P., Cercarelli, R. (2005). Role of mobile phones in motor vehicle crashes resulting in hospital attendance: A case-crossover study. *BMJ,, 331,* 428.
4. Ontario Ministry of Transportation. Ontario Road Safety Annual Reports, 1993 – 2010, retrieved from http://www.publichealthontario.ca/en/eRepository/OHP_infog_RoadSafety_2014.pdf

CHANGING ATTITUDES ABOUT DISTRACTED DRIVING WITH PSAS & EDUCATION ARE UNLIKELY TO BE SUFFICIENT

Knowledge + Attitude ≠ Behaviour Change

In one study, two-thirds of participants agreed that speeding is not worth the risks and is **not acceptable**. Yet…

- **More than half** (58.4%) **admitted to exceeding** a 100km/h **speed limit**, with one third admitting they do so by 10-20km/h.[1]

Most young drivers believe texting while driving is dangerous, distracting, and should be illegal. Yet…

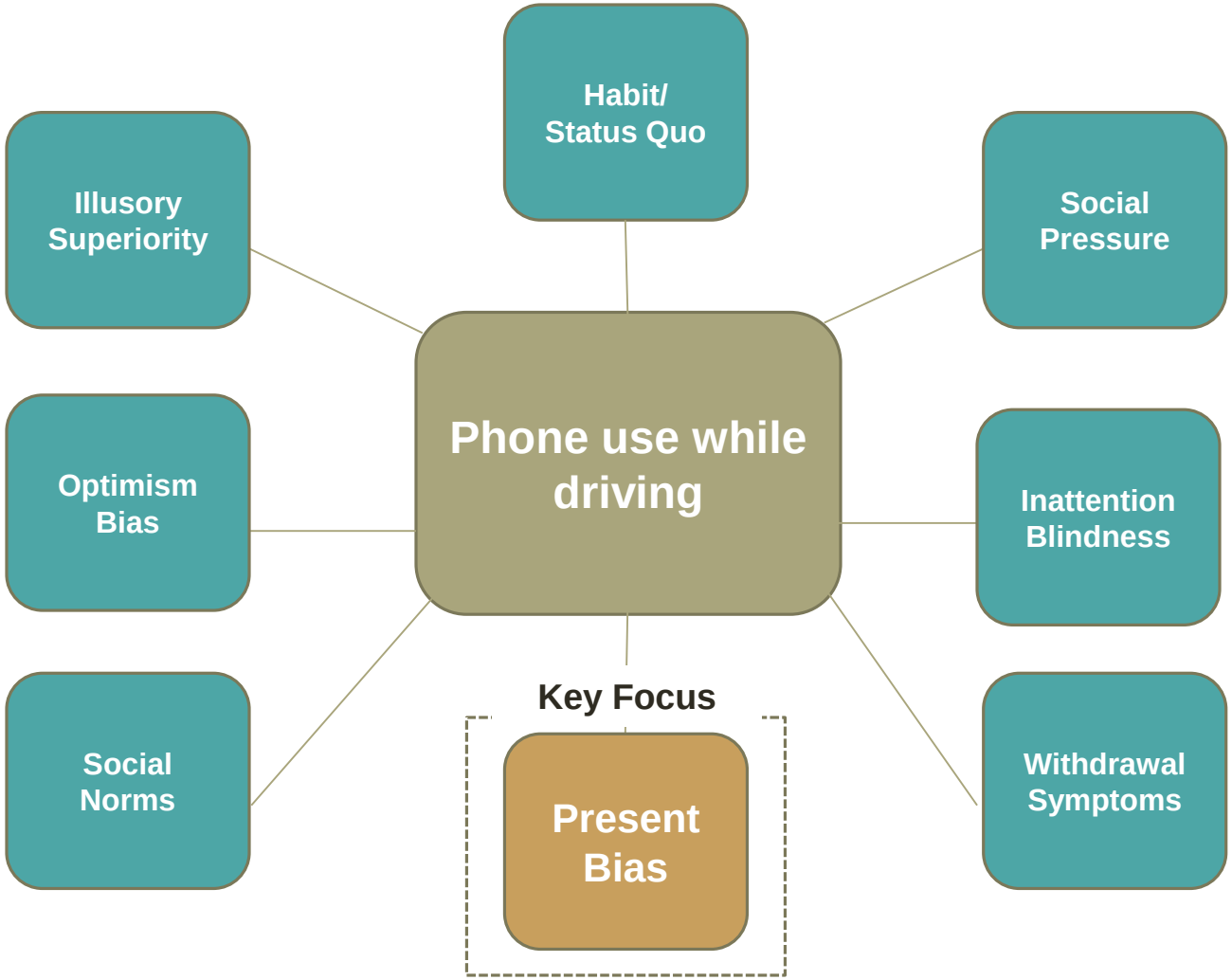
- **91%** of these same young drivers **reported they have texted while driving**
- 40% have had texting arguments while driving, 40% report **simultaneously texting, eating, and driving.**[2]

*If people know distracted driving is dangerous, **why is this behaviour so prevalent?***

Intention-Action Gap

1. Fleiter, J. & Watson, B. (2006). The speed paradox: The misalignment between driver attitudes and speeding behaviour. *Journal of Australasian College of Road Safety, 17(2)*, 23-30.
2. Harrison, M.A. (2011). College students' prevalence and perceptions of text messaging while driving. *Accident Analysis and Prevention, 43(4)* 1516-1520.

BEHAVIOURAL BARRIERS HELP EXPLAIN THE INTENTION-ACTION GAP



PRESENT BIAS IS A KEY FACTOR IN MOBILE PHONE USE WHILE DRIVING

Drivers are susceptible to **present bias**, seeking the immediate gratification of checking their phone, and are less influenced by potential future risks of that behaviour.

Evidence suggests that **present bias and impulsivity are factors** that influence whether individuals will use their phone when driving.

- In one study, young drivers who were unwilling to delay gratification were more likely to report texting while driving. Drivers who chose a smaller monetary reward that they would receive immediately (rather than a larger monetary reward they would receive after a delay) were more likely to say they had used their phone while driving.[1]
- Another study found that the length of time before the end of the drive influenced whether young drivers used their phone while driving. Drivers were more likely to text a friend back while driving if the duration of the remaining trip was longer rather than shorter, suggesting they weigh present benefits over potentially negative future outcomes.[2]

Removing the tempting alert that leads to present-biased phone checking behaviour could be a strategy to limit mobile phone use while driving.

1. Hayashi, Y., Russo, C.T., & Wirth, O. (2015). Texting while driving as impulsive choice: A behavioral economic analysis. *Accid Anal Prev, 83,* 182-189.
2. Hayashi et al. (2016). A behavioral economic analysis of texting while driving: Delay discounting processes. *Accid Anal Prev, 97,* 132-140.

3. A BEHAVIOURAL APPROACH TO COMBATTING DISTRACTED DRIVING

A PHONE ALERT IS LIKE ANY OTHER TEMPTATION: AVOIDANCE MAY BE THE BEST STRATEGY

The automatic “System 1” brain, susceptible to present bias, does not fully account for the costs of distracted driving, particularly when faced with the immediate gratification of a mobile phone alert / task.

Relying on people’s self-control to avoid a tempting alert on their phone may not be the best option. **Eliminating the temptation entirely** would be more effective, particularly if you can engage the driver’s “System 2” brain, which thinks critically about one’s actions.

People have been creating **temptation avoidance strategies** for millennia, recognize their value, and are even willing to pay for them.

A BI APPROACH CAN INCREASE DOWNLOADS OF SAFE DRIVING APPS

Nudge #1: Communications & Incentives to Promote Download

- Help close gaps in awareness (promotion) and action (downloads) to increase user adoption of existing safe driving apps

Opportunity for road safety organizations

Getting the "right information" to people at the "right time", through the "right channels".

Nudge #2: Safe Driving App

- Eliminate drivers' temptation to interact with their mobile device while driving

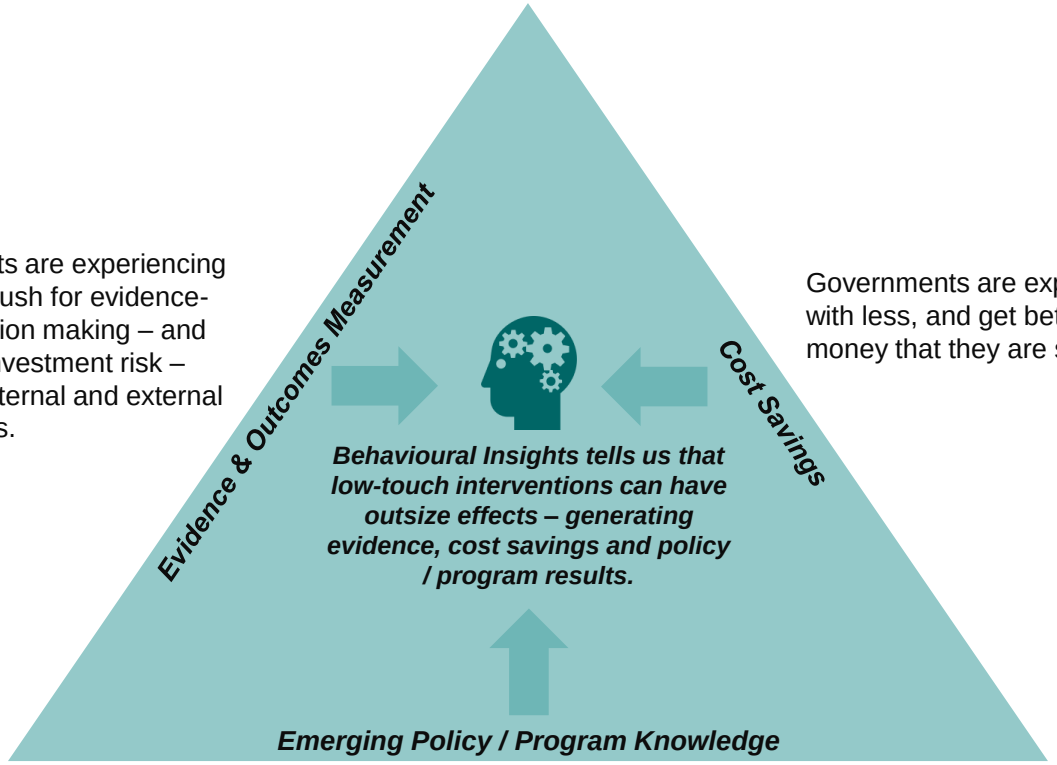
A number of these apps already exist.

4. ONTARIO'S BIU

WHY BEHAVIOURAL SCIENCE?

Behavioural Insights is a timely response to pressures and trends, such as the push for cost savings, human-centric design, and evidence-based decision making.

Governments are experiencing a stronger push for evidence-based decision making – and managing investment risk – from both internal and external stakeholders.



Governments are expected to do more with less, and get better value for the money that they are spending.

Governments are recognizing that human behaviour is complex; a better understanding of human behaviour leads to new tools that, as demonstrated by other jurisdictions, can improve outcomes for a low cost.

THE ONTARIO BEHAVIOURAL INSIGHTS UNIT

The BIU is comprised of experts in behavioural sciences, government and project delivery.

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NEXT STEPS

Ontario's Behavioural Insights Unit is happy to come and speak with your leadership and staff about potential opportunities to collaborate.

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