



**YOUNG  
DRIVERS<sup>®</sup>**

# DISTRACTED DRIVING EVENT

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MEDIA CHALLENGE

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THE MULTI-TASKING MYTHS

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On the 24th of June 2014, Young Drivers of Canada set out to show to the media, and by extension the public at large, the realities of what Canada's national driving school has known for decades - that drivers' cognitive attention must be trained to be focussed in order to deal with the challenges of today's roads, and that multi-tasking while behind the wheel is indeed a myth.



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## BACKGROUND

A high-risk driving behaviour is performing another task while behind the wheel of a vehicle. Quantification of the consequences of engaging in such risk activity in Ontario, was recently brought to the public's attention by the OPP where they found that 78 people died from distracted driving-related crashes (based on 2013 statistics)<sup>1</sup>. This figure stands in sharp contrast to the traditional harbinger of driver deaths, impaired driving, that only had 57 deaths during the same period. That this situation is not limited to Ontario drivers can be seen in B.C.'s similar experience where approximately a quarter of all car crash fatalities in B.C. during 2009 to 2013 were related to distracted driving - an average of 88 deaths per year, making distracted driving the second-leading cause of motor vehicle fatalities in B.C., behind speeding (105) and narrowly ahead of impaired driving (86).<sup>2</sup> Notably, according to current Ontario collision trends, the MTO estimates that fatalities from distracted driving are forecasted to consistently exceed those from drinking and driving by 2016.<sup>3</sup>

While the focus of driving distractions has been on text-messaging behind the wheel, which requires disproportionate visual, manual and cognitive inputs from the driver, the reality is that there are a number of common activities that can result in driving distractions. According to the Traffic Injury Research Foundation, the percent of drivers that engage in various distractive driving activities include:<sup>4</sup>

- 81% talk with passengers
- 66% change the radio or CD
- 49% eat or drink
- 26% make or take cellphone calls
- 24% deal with kids
- 12% read maps
- 8% engage in personal grooming

Performance of any of these secondary tasks has been determined as increasing the risks of a vehicle collision because such prevent a driver from devoting their full attention to the driving task, and where they take their eyes off the road so as to be unable to

B.C.	Ontario	
Abbotsford	Ajax	Mount Albert
Burnaby	Alliston	Mount Forest
Campbell River	Ancaster	Newmarket
Chilliwack	Aurora	Niagara Falls
Coquitlam	Barrie	North Bay
Courtenay	Belleville	Oakville
Duncan	Bolton	Orillia
Kamloops	Bowmanville	Orleans
Kelowna	Bracebridge	Oshawa
Langford	Bradford	Ottawa
Langley	Brampton	Owen Sound
Maple Ridge	Brantford	Paris
Nanaimo	Brooklin	Parry Sound
Port Coquitlam	Burlington	Peterborough
Richmond	Caledonia	Pickering
Surrey	Cambridge	Renfrew
Vancouver	Carleton Place	Richmond Hill
Vancouver	Chatham	Sarnia
Vancouver	Cobourg	Sault Ste
Vancouver	Collingwood	Marie
Vernon	Cornwall	Shelburne
Victoria	Dryden	Simcoe
White Rock	Dundas	Smiths Falls
	Elliot Lake	St Catharines
New Brunswick	Fergus	St Catharines
Moncton	Georgetown	Stoney Creek
St John	Grimsby	Stouffville
	Guelph	Stratford
New Foundland	Hamilton	Sudbury
Bay Roberts	Huntsville	Thornhill
Gander	Kanata	Thunder Bay
Grand Falls	Kenora	Timmins
Mount Pearl	Keswick	Toronto
St John's	Kincardine	Trenton
	King City	Truro
Nova Scotia	Kingston	Unionville
Amherst	Kitchener	Uxbridge
Bridgewater	Kleinburg	Vaughan
Dartmouth	Leamington	Wallaceburg
Halifax	Lindsay	Waterdown
Lower Sackville	Listowel	Waterloo
Middleton	London	Whitby
New Glasgow	Maple	Windsor
New Minas	Markham	Woodbridge
Port Hawkesbury	Midland	Woodstock
Sydney	Milton	
Truro	Mississauga	

1 <http://www.cbc.ca/news/canada/kitchener-waterloo/opp-calls-distracted-driving-number-one-killer-on-roads-1.2557892>

2 <http://www.icbc.com/road-safety/safer-drivers/Documents/distractions.pdf>

3 <http://news.ontario.ca/mto/en/2014/03/improving-road-safety-in-ontario.html>

4 [http://tirf.ca/publications/PDF\\_publications/2011\\_TIRF\\_distracted\\_driving\\_8\\_web.pdf](http://tirf.ca/publications/PDF_publications/2011_TIRF_distracted_driving_8_web.pdf)

see or respond to unexpected hazards.<sup>5</sup> That drivers continue to operate their vehicles while undertaking distractive activities has been explained in part, “because they assume that, if the two tasks were unsafe together, the drivers would find some sort of supporting evidence in their daily lives”.<sup>6</sup> This is behaviour compounded by certain assumptions where:

*“People tend to be overconfident in their abilities and the most overconfident also tend to be the least competent (the so-called Dunning-Kruger effect ... [where] the biggest risk comes from the unexpected things, the ones we’re slower to notice (or don’t notice at all) when distracted. In fact, familiarity might actually induce complacency.”<sup>7</sup>*

To put these activities into context, according to Angelo DiCiccio, Young Drivers of Canada - Director GTA, there are three categories of driver distractions:

- **Visual** - a driver taking their eyes off the road
- **Manual** - a driver taking their hands off the steering wheel
- **Cognitive** - a driver losing focus on the task of driving, and taking their mind elsewhere

5 Simons-Morton BG, Ouimet MC, Zhang Z, et al. Crash and risky driving involvement among novice adolescent drivers and their parents. *Am J Public Health* 2011;101:2362-2367

6 Distracted Driving: The Multitasking Myth, Steven D. Gacovino, 2014.

7 From Distracted Driving, *ibid*, psychologist Daniel Simons.



“[As drivers] we think we see way better than we do,” explains Charles Shrybman, senior regional trainer at Young Drivers.



*“This internet thing? It’s not going away – it’s here to stay. It’s not our job to police it, but to figure out how to adapt and be ready for it.”*

- Angelo DiCicco,  
GTA Centre Director,  
Young Drivers of Canada

Each of these elements are amplified by today’s culture that embraces distraction, with encouragement to multitask, whether it be at work, home or the car. The ready availability of technology, designed to enhance multi-tasking and communications, has resulted in a mix between drivers and technology that creates a breeding ground for higher risk on today’s roads!

To test this theory, Young Drivers of Canada set out to create an experiment, whereby automotive journalists were invited to Young Drivers testing facility, to see how well they dealt with distractions and how they integrated the latest wearable technologies into their driving. Each of the participants would be subject to all three categories of driver distractions, and the effect thereof gauged upon their driving performance.

## PARTICIPANTS

Journalists from major market media outlets were invited to and attended the event, including from Autos.ca, CBC News, Fleet Magazine, Global TV News, Globe & Mail, and the Toronto Star, while industry representatives from the Vaughan Police and Ontario’s Ministry of Transportation were also in attendance. Young Drivers of Canada personnel included: Angelo DiCicco, GTA Director responsible for event and curriculum coordination of the Greater Toronto Area; Jim Kilpatrick, Regional Trainer and active member of the National Education Committee; and Charles Shrybman, Senior Regional trainer with over 20 years in driver education and member of the Association of Driver Rehabilitation Specialists; as well as numerous other Young Drivers instructors and administrative personnel.

## MEDIA CHALLENGE

Participants were first put through a workshop on the causes of distracted driving. Most importantly, a video was shown to demonstrate the concept of “inattentive blindness”, being the failure to notice something unexpected even when looking directly at it. This latter exercise was based on a study by psychologists Simons and Chabris<sup>8</sup>, that has six people passing basketballs while a person in a gorilla suit walks onto the screen and then leaves. Viewers of the video were asked to count how many times the players wearing a specific colour passed the ball, and then were asked if they saw the gorilla. In the study, approximately 50% of the viewers did not see the gorilla, while in the YD experiment less than 50% of the work-

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<sup>8</sup> “Gorillas in our midst: sustained inattentive blindness for dynamic events”, Daniel J Simons and Christopher F Chabris, 1999 - [https://www.cnbcmu.edu/~behrmann/dlpapers/Simons\\_Chabris.pdf](https://www.cnbcmu.edu/~behrmann/dlpapers/Simons_Chabris.pdf)

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shop participants saw the gorilla. This demonstration, coupled with additional information imparted by Young Drivers instructors during the workshop, was designed to prepare these seasoned journalist drivers for the on-road driving challenge ahead.

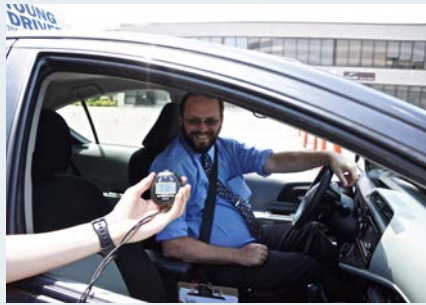
There were then two parts to the on-road driving challenge. Part I, dealt with navigating a course with specifically positioned occurrences, such as a bicycle coming alongside the driver on the righthand side of the vehicle, to determine the participants' cognitive ability to deal with their driving environment. Part II, had participants execute a closed course that involved driving a chicane, parking and stopping activities, first without technology distractions and then with active wearable technologies.

## RESULTS

According to Young Drivers Kilpatrick, *"Cognitive disengagement — being lost in thought — is the No. 1 distraction for drivers, where some 62 per cent of distracted drivers reported 'internal distraction', such as mulling over a problem at work, making thinking the most common distraction."*

One participant in the event, Mark Toljagic, writer for the Toronto Star and Wheels.ca had this to say about the practical application of Mr. Kilpatrick's observations:

*"Jasmine Suhner is an ami-*



Google  
GLASS



“Wouldn't it be neat to have the ability to peer around corners and see what an unfamiliar road looks like before you get there?”  
ponders Angelo DiCicco



able four-year “rookie” YDC instructor who led me in a sobering demo using her Prius C hatchback. As I drove along a sparsely travelled street, she asked me to list three attributes a good newspaper writer should possess. I knit my brow and thought about a response, then slowly rhymed off some tired clichés about good journalism practices. When I finished, Suhner glanced up from her clipboard and asked me if I had noticed the new speed limit posted on the sign we had passed a moment ago. “What sign?” I asked, incredulous. “There’s no sign, and if there is, the city must have stuck it behind a tree,” I protested weakly. A little later, we stopped at an intersection and Suhner asked me to roll down my window before making a right turn. I did so and then began to execute the turn, only to discover a cyclist had come up to our right fender. I hadn’t checked my mirrors a second time. Distracted again.”<sup>9</sup>

Dianne Nice, staff writer for the Globe & Mail fared a little better:

*“As I go through the circuit at the Young Drivers of Canada distracted driving challenge, [Young Drivers of Canada instructor] Exume tries to throw off my focus, hoping I won’t notice the biker in my blind spot, the speed limit sign or the car flashing its hazard lights. He gives me distracting tasks – “Find a country music station” – and asks me questions about my job and my summer plans. He even makes a crack about my age – it seems he was still in diapers when I got my licence – but he just can’t shake me.”*<sup>10</sup>

Young Drivers’ Shrybman sums up, “When it comes to dealing with distractions, age and experience matter. For experienced drivers, simply talking to passengers or listening to the radio creates no statistical increase in collisions. While experienced drivers will slow down and avoid changing lanes when distracted, teenage drivers tend to speed up.”

Notably, although Ms. Nice achieved the top score in the challenge, she was also one of the slowest drivers taking part.

As to how the automotive journalists handled the new wearable technology’s potential for distraction, where they were equipped with Google Glass, a head’s up display only centimeters from their retinas and a Samsung Smartwatch tethered in the ether to a cell-phone, was a different matter.

Ms. Nice described her experience in these terms:

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9 <http://www.wheels.ca/news/dangers-of-day-dreaming-distraction-is-in-your-head-not-your-phone/>

10 <http://www.theglobeandmail.com/globe-drive/culture/commuting/because-age-and-experience-matter/article19819648/>

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*"In the back seat, Wayne Giang, a UofT PhD student currently studying human attention as it applies to vehicle control, attempts to send me both text and visual messages ... But with the glasses periodically chiming in my ear to alert me of incoming messages, the "smart watch" on my wrist buzzing in tandem, and Wayne's disembodied head winking in and out of the tiny screen at the corner of my eye – I'm relieved that the "intersection" I'm trying to navigate is closed to other traffic."*<sup>11</sup>

As can be seen from the preceding discussion, even more dangerous are hand-held devices that require "manual-visual sub tasks," inclusive of scrolling or pushing buttons, which create "inattention blindness" in drivers regardless of experience. This effect is simply because drivers cannot effectively multitask, where if attention is focused on something, most people are effectively blind to all sorts of things that are happening right in their field of vision.

Finally, there was the experience of Cindy Pom, the Global TV News journalist, in completion of the chicane while wearing Google Glass:

Timer: *"Time that you received was one minute and ten seconds."*

DiCicco: *"And how did that compare to last time, do you know?"*

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11 <http://www.theglobeandmail.com/globe-drive/culture/commuting/because-age-and-experience-matter/article19819648/>



*"You only have so much mental horsepower to use up. If it's divided ... your decision-making is way worse."*  
- Angelo DiCicco



## Resources

- MTO, Ontario Distracted Driving information - <http://www.mto.gov.on.ca/english/safety/distracted-driving.shtml>
- ICBC, BC Distracted Driving information - <http://www.icbc.com/road-safety/crashes-happen/Distracted-driving/Pages/Default.aspx>
- New Brunswick - Distracted Driving Information - [http://www2.gnb.ca/content/gnb/en/departments/public\\_safety/promo/driver\\_distraction.html](http://www2.gnb.ca/content/gnb/en/departments/public_safety/promo/driver_distraction.html)
- Newfoundland - Distracted Driving Information - <http://www.releases.gov.nl.ca/releases/2010/g0930n01.htm>
- Nova Scotia - Distracted Driving Information - <http://novascotia.ca/news/release/?id=20141001003>
- CDC, US & Europe Distracted Driving information - [http://www.cdc.gov/motorvehiclesafety/distracted\\_driving/](http://www.cdc.gov/motorvehiclesafety/distracted_driving/)

Timer: *"Last time I think she got around a similar time."*

Cindy Pom: *"So I did better with the distractions!"*

DiCicco: *"However, how many cones did you hit the first time?"*

Cindy Pom: *"Zero."*

Timer: *"This time the score was negative 1, which means she lost four points."*

Cindy Pom: *"So I hit more cones this time."*

DiCicco: *"So the idea is that you only have so much mental horsepower to use up. If it's divided amongst multiple things, cognitive and motor skills, driving is a psychometric skill using a lot of cognitive mental horsepower, you're not as fine with the motor skills, your decision-making is way worse. You crunched a whole bunch of cones."*

Cindy Pom: *"We did!"*<sup>12</sup>

## LESSONS LEARNED

Young Drivers of Canada's focus is to educate both novice and seasoned drivers to recognize that certain activities behind the wheel can and will effect their performance. Today, interactive technologies continue to evolve, in the vehicle as well as tied to the person.

Where driver distraction accounts for 20–30% of collisions<sup>13</sup>, 4,220 traffic-related deaths and 172,883 related injuries<sup>14</sup> – with a cost of \$62.7 billion annually to Canadians<sup>15</sup> when you factor in emergency response, hospitalization, insurance and lost revenue due to impeded traffic flow - there is no question that education is a necessity to teach drivers to survive on today's and tomorrow's roads.

Young Drivers of Canada understands that working with, and adjusting to new technologies to be dealt with by drivers that will increase cognitive loads for the foreseeable future, will not be an easy task in terms of maintaining driver focus and safety, but nev-

<sup>12</sup> Global TV News Interview - Distracted Driving with Google Glass, <https://www.yd.com/blog/global-tv-news-google-glass-distracted-driving/> and <https://www.youtube.com/watch?v=9BmL3pntSw0>

<sup>13</sup> Alberta Transportation, Distracted Driving Legislation - Bill 16, <http://www.transportation.alberta.ca/distracteddriving.htm>

<sup>14</sup> Transport Canada statistics 2009, <http://www.tc.gc.ca/eng/motorvehicle-safety/tp-tp3322-2009-1173.htm>

<sup>15</sup> Transport Canada, "Analysis and Estimation of the Social, Cost of Motor Vehicle Collisions in, Ontario", 2004 figures - <http://www.tc.gc.ca/media/documents/roadsafety/TP14800E.pdf>





Courtesy of the Google Glass Android App, at <https://play.google.com/store/apps/details?id=com.google.glass.companion>



Inrix announces Traffic Alerts for the Samsung Smartwatch, <http://www.inrix.com/press/inrix-partners-samsung-deliver-traffic-powered-mobile-applications-connected-car/>

ertheless is a necessity for drivers to identify, anticipate and deal with the associated risks on today's roads

This tension between the consequences of new technologies and the need for education was summed up nicely by the interchange between Cindy Pom of global TV News and Angelo DiCicco:

Cindy Pom: *"So you're saying that these glasses, despite distracting me, because I hit the cones. You're saying that these glasses can potentially be helpful?"*

DiCicco: *"It's technology. It's what we do with the technology and it's the interface between new technology and good drivers that Young Drivers of Canada is trying to tell everyone about. This technology is coming! It isn't going away! We have to make sure that the interface between new technology and drivers is a smart one, and so yes this technology is very, very useful. However, someone better be paying attention to how it is used in the car by new drivers, let alone older folks like me, who never really used a mouse until a few years ago."*

Cindy Pom: *"But yet you also say these could also help you while you're on the road and make you safer?"*

DiCicco: *"Well the reality is that technology could be used for good or evil. The good could be what if that message that came up was that up ahead the lane on the right is blocked by a burning vehicle and then you needed to pull over to the side of the road immediately and put on your all way flashers. We got that message out to the next ten cars that would've piled into one another. That would be a brilliant use of technology and everyone would say hooray! However, if you're reading that you need to have macaroni for dinner tonight and you end up taking your attention away and plowing into the vehicle in front and nine other cars hit you, that isn't smart! So that interface between new technology and new drivers, that's what Young Drivers of Canada is trying to do. There's a huge gap there that someone needs to fill. I'm just trying to point the way to the future. This wearable technology stuff it's actually here and by the end of the year, there's going to be thousands of these pieces of technology driving across the GTA (Greater Toronto Area) everyday!"<sup>16</sup>*

## RECOMMENDATIONS

**1) Becoming Pro-Active with Distractions** - There is a need for training in how to deal with distractions in different driving contexts, similar to whether a person listens intently or generally, where drivers should be conditioned to recognize circumstances

of risk and adopt appropriate behaviour. For instance, listening to the radio can be a low-risk behaviour while driving on a country road, such can change to a high-risk categorization when done on a multi-lane highway at high speeds. Young Drivers currently provides student driver training in habits and sub-habits that deal with such distraction risk assessment, mitigation and avoidance with application to both driver self-distractions and distracted driving by other drivers on the road.

**2. Public Education Distraction Management Initiatives** - The public at large must be shown that distracted driving comes in many forms and not just by way of the cellphone, and is increasingly pervasive with the potential to touch us all. Awareness and prevention programs should be aimed at influencing driver distraction management and road-user behaviours, where today's technologies are exacerbating an already busy driving environment. With increasing stimuli from on-road advertising, more drivers, bicycles, and pedestrians, distractions will not go away and will expectedly increase. There is therefore the need to inform the public of ways and means to manage these distractions, by way of recognition, regular ongoing prioritization and compartmentalization.

**3. Preparation for Dealing with Net-Positive Distractions** - As can be seen from the experiment using Google Glass, while at first blush such a distraction would involve a high-risk activity, the potential for reducing high-risk road user behaviours and situations, including collisions and fatalities, through judicious use of technology can result in a net-positive distraction. Provision of timely information and assistance can form the basis of potentially positive distractions, where it's better to anticipate driving hazards than react to them and be able to choose the safest route to a destination. Nevertheless such positive distractions would have to be properly managed in order to avoid or limit detrimental effects, with net positive benefits to the driver, and external stakeholders such as other drivers, and the public as a whole.



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