

Using smartphones at the wheel increases the risk of accidents

Eye tracking experiment with Ergoneers: Four seconds of “driving blind” caused by smartphone distraction

Geretsried - February 23, 2016 - Ten percent of road traffic accidents occur because the driver is distracted - and increasingly so by their own smartphones [1]. Just how dangerous constantly looking at smartphone messages from Facebook, Twitter and WhatsApp while driving can be has been demonstrated by an [eye tracking](#) experiment by Ergoneers traffic psychologist Dr. Martin Gründl [2]. The experiment measured how long a driver spends looking at the display on their smartphone and not at the road.

An Eye Tracker from Ergoneers was used in the experiment along with a light barrier. It was then possible to determine how long the driver was distracted from the road by the smartphone and what effect that had on her reactions.

An analysis of the experiment revealed that the driver spent a total of four seconds looking at her phone while driving. This means that, at a speed of just 38 km/h, she traveled a full 42 meters without looking at the traffic.

Just a few seconds of not looking are enough to crash into the car in front. According to a study by Allianz, one in ten road traffic accidents is caused by the driver being distracted by writing a text message, operating the satnav or eating [1]. Distraction has been included in the accident statistics in the USA for long and the figures are shocking: Around every tenth fatal accident and more than every sixth accident involving injuries was caused by visual, manual or cognitive impairment [3].

“Even if you travel without looking for just a few seconds, if an accident is about to happen, there’s no time to respond quickly enough to a dangerous situation. Imagine if a child suddenly runs out into the road, and an oncoming car moves into your lane or a tractor suddenly appears in front of you after a bend in the road. You have to respond instantly,” explains Dr. Martin Gründl, traffic psychologist at Ergoneers.

The automotive industry is already trying to counteract this danger with emergency braking assistants. The systems are able to detect the danger with a camera and then automatically initiate an emergency brake [4]. The driving assistants are already working without problems, however there is not yet 100% reliability - especially in situations where the driver is overwhelmed.

“The eye tracking experiment demonstrates just how dangerous the distraction from smartphones, but also other things, such as operating the infotainment system while driving is. Driving a car while using smartphone apps is far too dangerous and should be a complete no-no for all responsible drivers. It’s prohibited anyway”, says Dr. Martin Gründl.

Professional eye tracking with Ergoneers

During the journey, the driver wore the latest Eye Tracker model from Ergoneers Dikablis Professional. Using this high-precision device, it was possible to accurately determine how long she looked at various objects. To record the measurement data and analyze it instantly on site, the Vehicle Testing Kit (VTK) from Ergoneers was also used. The VTK is a complete package for carrying out vehicle studies. As well as an on-board computer, on which the company-owned measurement and analysis software from Ergoneers is pre-installed, the VTK also includes connection options for an Eye Tracker or for recording data for the car’s internal serial bus system (CAN bus). Using the CAN bus, access can be gained to vehicle data such as the operation of the accelerator and brake pedals. The inclusion of this and other information by the VTK therefore allows vehicle studies to be carried out in a comprehensive manner.

[1] http://www.auto-news.de/auto/news/anzeige_Studie-Jeder-zehnte-Unfall-durch-Ablenkung-verursacht_id_34897

[2] The experiment was carried out as part of a safety test by the [RTL II program “GRIP”](http://www.rtl2.de/sendung/grip-das-motormagazin/video/1805-service/29607-sicherheitscheck-handy-am-steuer/), DEKRA and Ergoneers’ eye tracking specialists and can be viewed here: <http://www.rtl2.de/sendung/grip-das-motormagazin/video/1805-service/29607-sicherheitscheck-handy-am-steuer/>

[3] [https://www.gdp.de/gdp/gdp.nsf/id/dp201504/\\$file/VGT.pdf](https://www.gdp.de/gdp/gdp.nsf/id/dp201504/$file/VGT.pdf)

[4] http://www.pcwelt.de/ratgeber/Sicherheits-Assistenten_ACC_verhindern_Unfaelle-7999049.html

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About Ergoneers

Ergoneers GmbH was founded in 2005 as a spin-off from the faculty of Ergonomics at the Technical University of Munich. Today the company has a worldwide presence through three offices in Manching (Germany), Geretsried (Germany) and Portland (USA) and through global sales partners; serving the Transportation / Automotive, Market Research & Usability, Science and Sports / Biomechanics application areas.

In addition to development, manufacturing and distribution of measurement & analysis systems for behavioral research and optimization of human-machine-interaction, Ergoneers also offers comprehensive expertise in each phase of your study.

Our product portfolio primarily comprises of the 360-degree solution - D-Lab; an extensive software platform for capturing and analyzing human behavior. With its different software modules you can synchronously measure and analyze eye-tracking, data stream, video, audio, physiology and CAN-Bus data.

With the Dikablis Eye-Tracking system, Ergoneers provides the best hardware for professional Eye-Tracking studies in real or virtual environments.

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