**经济学人:道路安全--挑剔的司机 2010-07-11**

Step inside most modern cars and instead of all the dials and switches

坐进大多数现代汽车里，你很可能会发现，

that used to clutter the dashboard you are likely to find it dominated by a touchscreen.

以前挤在仪表盘里的刻度盘和开关现在都是触屏操作。

Often there is more than one **screen**, and some are bigger than those on a laptop.

车内通常不止一个屏幕，一些甚至比电脑平面还大。

But, though touchscreens provide a **convenient** way to **operate** a multitude of controls and settings,

虽然触屏提供了便捷的操控方式，

the latest research shows they can also be dangerous distractions.

但最新研究表明它们也可能是危险的干扰。

To discover how badly touchscreens **distract** drivers, Neale Kinnear and his colleagues at the Transport Research Laboratory,

为了探究触碰对司机的干扰有多严重，前英国政府机构、现独立检测机构——

a former British-government agency now run as an **independent** test facility, arranged a series of experiments.

运输研究实验室的Neale Kinnear和他的同事进行了一系列试验。

They recruited two groups of 20 drivers. One consisted of regular users of Google's Android Auto,

他们雇佣了两组司机，每组20人。其中一组是谷歌的Android Auto的老用户，

a **popular** "infotainment" app which lets drivers interact with their phone through a car's touchscreen.

这是一款很受欢迎的“娱乐信息节目”应用，能够让司机通过汽车的触屏与他们的手机互动。

The others were partisans of Android Auto's main **rival**, Apple CarPlay.

另一组是Android Auto的主要竞争对手苹果CarPlay的支持者。

Each **participant** completed three 15 minute journeys along a set virtual **route** using the laboratory's **sophisticated** driving simulator.

每位参与者使用实验室先进的驾驶模拟器，沿着设定的虚拟路线完成3次15分钟的旅程。

On one of these trips they had to carry out tasks using only the touchscreen.

在其中一次旅行中，他们只能使用触屏来完成任务。

These tasks included navigating to a restaurant, playing a **particular** song on Spotify (a music service),

这些任务包括导航区一家餐厅、在音乐软件Spotify上播放某一首歌、

changing radio channels, getting the system to read out a text message, and making a "hands-free" telephone call.

调换广播电台、让系统朗读一条短信，以及打“免提”电话。

On the second trip they had to do the same, but using only the car's voice-activated controls instead. The third journey was a **control**, with no assigned tasks.

在第二次旅程中，他们需要做同样的任务，但只使用汽车内的声控系统。第三次旅程是一个对照组，不需要做任务。

Whenever a red bar flashed on the windscreen the researchers **measured**

每当挡风玻璃上的红色条带闪烁时，

how long it took a driver to **react** by pulling the **indicator** **stalk** to flash the car's lights.

研究人员就会通过拉动指示杆来闪动车灯，以此来测量司机的反应时间。

As they expected, drivers using touch controls on the **screen** took longer to **respond** to the flashing bar than did those using voice controls.

正如他们所料，与使用声控系统的司机相比，使用触屏操作的司机需要更长的时间来响应闪烁的工具条。

Though the difference might be less than a second, at motorway speeds this would result in an increased stopping distance of up to 25 metres.

虽然差异可能不足一秒，但在高速公路上，这将导致停车距离增加到25米。

Dr Kinnear was, however, surprised by the amount of time drivers' attention was **diverted** by the series of glances needed to **operate** the **screen**.

但Kinnear博士惊讶地发现，驾驶员的注意力被触屏操作所吸引的时间如此之长。

Among the worst outcomes were a mean of 20 seconds of **cumulative** glances using Android Auto to play a song on Spotify,

最糟糕的结果是，使用Android Auto在Spotify上播放一首歌，平均需要20秒的累积浏览时间，

and of 16 seconds to set up the **route** to a restaurant with CarPlay.

使用CarPlay设置去餐馆的路线需要16秒。

For voice commands those means **fell** to four and three seconds respectively.

而语音指令所需时间分别减少至4秒和3秒。

The researchers **calculated** that **reaction** times to the red bar

研究人员计算得出，在进行一些任务中，

when the touchscreen was being employed were more than 50% longer than standard for some tasks.

使用触屏时，对红色条的反应时间比标准时间长50%以上。

This was worse than the 46% **impairment** found in a **previous** simulator study

这比此前的一次模拟研究还要糟糕，在这项针对边驾驶边打电话

looking at the effects of using a hand-held mobile phone while driving, which is banned in many countries.

（很多国家禁止这种行为）的研究中，46%的司机都受伤了。

Dr Kinnear and his colleagues have urged **vehicle**-safety bodies to **impose** standards that limit the use of overly distracting tasks on a car's touchscreen.

Kinnear博士和他的同事敦促汽车安全机构制定标准，限制在车中进行过度干扰的触屏操作任务。

At present there are only **voluntary** guidelines. America's National Highway Traffic Safety Administration, for instance,

目前只有四条自愿性的指导规则。例如美国国家公路交通安全管理局表示

says touchscreen tasks should be completed in glances of two seconds or less, with a **cumulative** time of no more than 12 seconds.

触屏任务应该在两秒钟或更短的时间内完成，累计时间不超过12秒。

The researchers believe voice-activation is a safer **alternative** that should be encouraged, though the software needs to be improved.

研究人员认为声控是一个更加安全的选择，且应该鼓励声控操作，虽然需要对软件进行改善。

Andy Peart of Artificial Solutions, a Swedish firm developing AI-assisted voice **recognition**, agrees.

开发AI辅助声音识别的瑞典公司Artificial Solutions的Andy Peart对此表示赞同。

One problem is that spoken commands often have **multiple** **intent**.

一个问题是语音命令通常有多个意图。

"Ask to turn the **temperature** up and play Ed Sheeran, and the system can't cope," he adds.

“调高温度和播放艾德·希兰的音乐，这样的任务，系统无法应对，”他补充道。

The **migration** of **vehicle** controls to touchscreens has also led to complaints about the machines' rather than the drivers' **reaction** times being too slow,

车辆控制系统转移至触屏也引发了人们抱怨机器，而不是抱怨司机的反应速度太慢，

and requiring a **confusing** number of steps, to boot. In April, after examining the touchscreens in new vehicles, What Car?, a British motoring magazine,

而且启动过程中需要的步骤多得让人摸不清。4月，在检查了新车辆的触屏后，英国汽车杂志《What Car?》报道称，

reported that adjusting the heater fan can take twice as long when using a touchscreen rather than a physical button,

当使用触屏而不是物理按钮时，调整加热器风扇可能需要两倍的时间，

and that selecting a new radio station takes eight times longer.

并且选择一个新的电台需要8倍长的时间。

Carmakers are developing screens that are easier to **operate** and positioning them more in line with a driver's view of the road.

汽车制造商正在开发更容易操作的的屏幕，并使其更符合驾驶者对道路的看法。

Haptic feedback, which adds physical, tactile responses, is also coming.

增加了物理和触觉反应的触觉反馈也即将到来。

This might, for example, detect a moving finger and **produce** a clicking sound and a **slight** **vibration** when a virtual button on the **screen** is felt and pressed.

例如，当触摸和按下屏幕上的虚拟按钮时，它可能会检测到一个移动的手指并产生点击声和轻微的振动。

Old-school motorists may, however, still prefer their cars to come with real knobs on.

然而，老派的驾车者可能仍然喜欢他们的车有真正的按钮。