

A fresh approach to distracted driving: implications for policy

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Abstract

Distracted driving due to mobile device use is an increasing contributing factor in road crashes globally. In Queensland, a high proportion of drivers report using their phone illegally in the car, despite being aware of the risk for driving. A ‘design-thinking approach’ was applied to gain further understanding and develop policy options on this issue. A complex ecosystem of driver behaviour influence, and five driver profiles with differing device interactions and propensities for risk were identified. This new information regarding influences on driver behaviour will guide engagement to inform development of new safety solutions for driver distraction due to mobile device use.

Background

With known detrimental effects on driving performance and crash risk, distracted driving due to mobile device use is recognised as a serious and growing global public health concern with individuals providing a variety of reasons for this dangerous behaviour (WHO, 2011; Footprints 2018) (see Figure 1). Disturbingly, around 70% of Queensland drivers use their phones illegally in a range of ways, and despite knowing the risks for road safety (Atchley, Atwood, & Boulton, 2011; Footprints, 2018).

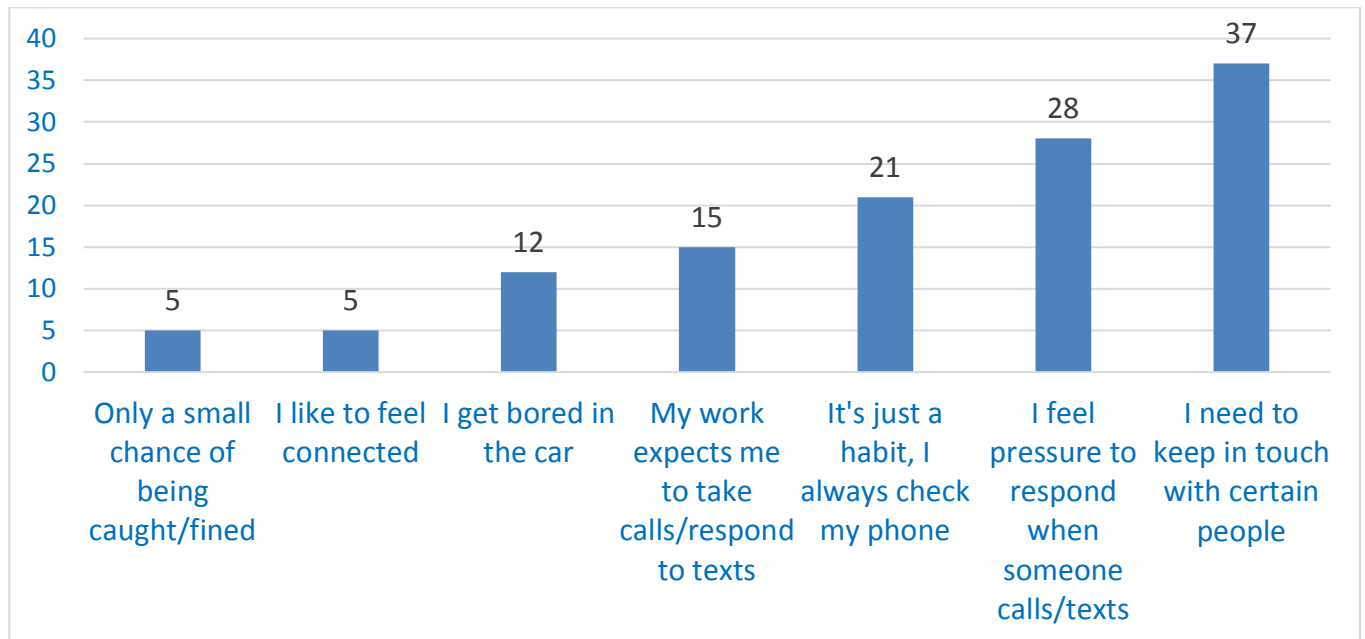


Figure 1. Reasons for illegal mobile phone use (%), Queensland 2018

In Queensland during 2011-2016, driver distraction-related road casualties increased by 31%, and distraction was the largest overall contributor to casualties, despite being likely underreported (Department of Transport and Main Roads [TMR], 2017). Data shows that distraction is a serious ‘fatal five’ contributor to road trauma, and one of two fatal five contributors on the rise – the other being drug driving (TMR, 2018) (see Figure 2).

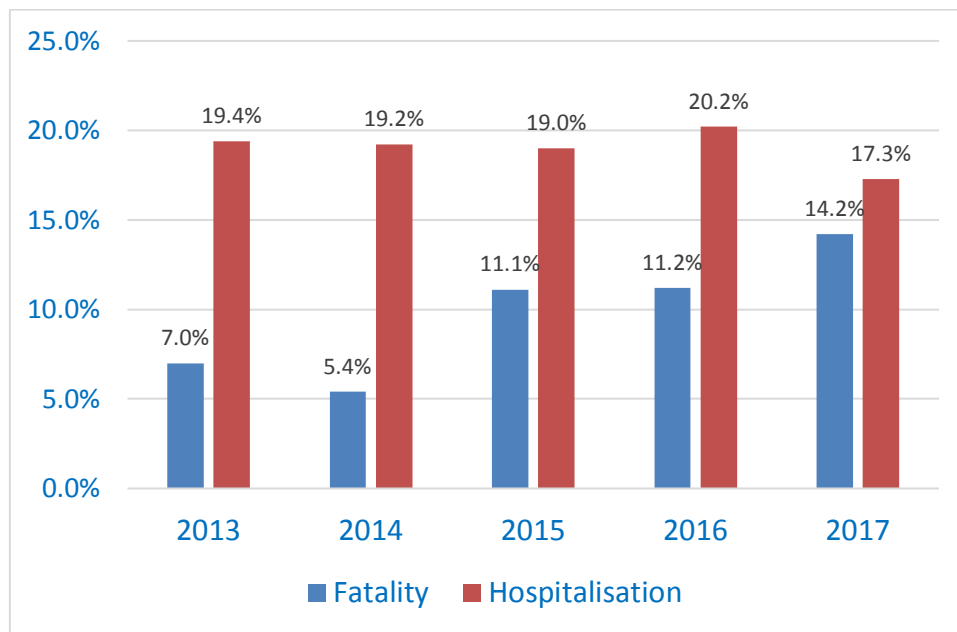


Figure 2. Proportion of casualties as a result of crashes involving distracted/inattentive drivers or riders in Queensland

Internationally and in Australia, distracted driving safety countermeasures range from enforcement, legislation, awareness campaigns and employer policies, however there is a high level of inconsistency in their application and little data regarding their effectiveness (WHO, 2011). Unfortunately, crash data suggests that improved understanding of the issue of mobile device use while driving and new safety strategies are urgently needed.

Systems and design-thinking: a new approach for policy development

Much of the existing literature and research in the field of driver distraction has been prepared by traditional road safety academics and specialists, however the problem of mobile device use while driving continues to challenge policy makers worldwide. Recognising the need to generate new thinking and solutions that are also resilient to technology updates, TMR employed a fresh approach to develop policy options for managing this safety issue. In this approach, systems and design-thinking methodologies were applied to further understand the complex interactions between behavioural influences, and drivers and subject experts were engaged to co-create policy solutions.

Who are the distracted drivers and why are they distracted?

It was identified that there is a broad and complex ecosystem influencing and reinforcing the risk/reward decision and engagement in using a mobile device while driving (see Figure 3 and Table 1). This suggests that a 'systems approach' is needed to significantly impact driver behaviour.

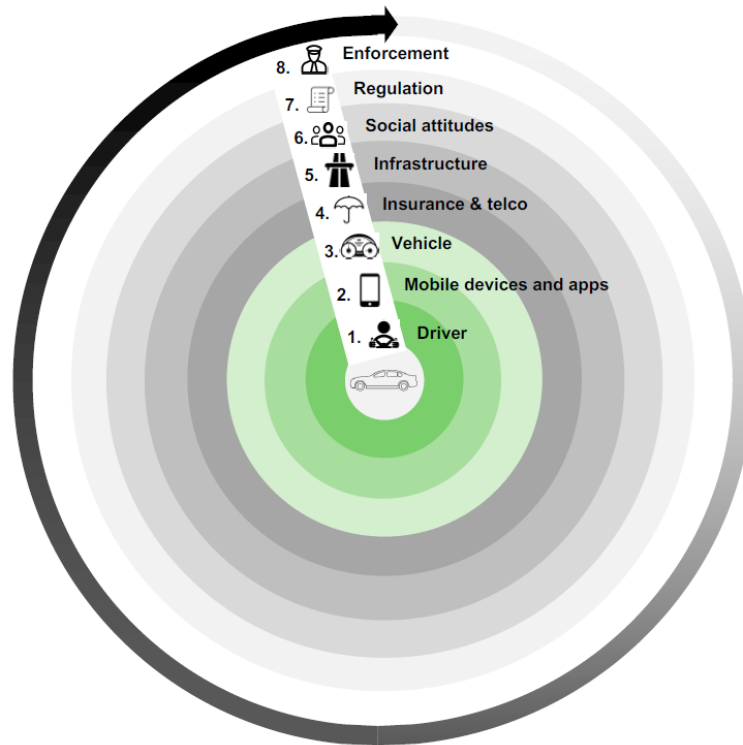


Figure 3. The driver distraction ecosystem

Table 1. Elements of the driver distraction ecosystem

System element		Role in the system
1	Driver	The driver is ultimately responsible for making the decision to engage in the distracting behaviour. They make a decision based on their assessment of the perceived risks and benefits.
2	Mobile devices and applications (incl. manufacturers)	The immediate enabling technology that facilitates the distracting behaviour. Also includes the organisations that manufacture and set the design agenda for the technology.
3	Vehicle (incl. manufacturers)	The immediate environment in which the driver makes the decision to engage in the distracting behaviour. May also play a role in facilitating the behaviour (for example, Bluetooth®, voice-activated commands). Also includes the organisation that manufactures and set the design agenda for the technology.
4	Insurance and telecommunication companies	These companies are part of the periphery environment and may have a role in influencing either the driver’s ability to engage in the behaviour (for example, telcos restricting data signals) or influencing the decision making process (for example, insurance companies discounting premiums through the use of telematics technology).
5	Infrastructure	The surrounding physical infrastructure on and through which vehicles are used (for example, roads, bridges, intersection, signage).
6	Social attitudes	The opinions and preferences that are held by people known to the driver (for example, family, friends, work colleagues and managers) and society more broadly.

7	Regulation	Defines acceptable behaviour regarding the use of mobile phones while driving.
8	Enforcement	The range of measures taken to implement the legal consequences of failure to comply with the regulation (for example, detection methods, fines, licensing restrictions).

In addition, five driver profiles, characterised by their differences in type of device interaction, risk appetite, behavioural motivations, and age, were identified.

Conclusions

Identifying a complex ecosystem surrounding distracted driving highlights the need for a holistic approach to safety countermeasures on this issue. Characterisation of groups of drivers who engage in illegal mobile device use provides direction for new safety measures targeting specific distracted driver groups. It is recommended that a new strategy targeting driver distraction due to mobile device use should be anchored in a clear policy approach with reinforcing initiatives across the entire ecosystem to address a range of driver groups. Building on the present findings, further stages of the project will seek to engage with key stakeholders, such as telecommunications companies, automotive industry and mobile device manufacturers, to develop a suite of effective solutions for driver distraction.

References

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