

Institution: The Open University		
Unit of Assessment: A4 Psychology, Psychiatry and Neuroscience		
Title of case study: Improving road safety: advising the national campaign to educate on the dangers of hands-free phone use when driving		
Period when the underpinning research was undertaken: 2011-2018		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr. Gemma Briggs	Head of Discipline & Senior Lecturer in Psychology	2007 - present
Dr. Jim Turner	Senior Lecturer in Forensic Psychology	2006 - present
Period when the claimed impact occurred: 2016-2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact		
<p>Briggs and her team's research on the effects of distracted driving has generated impacts relating to policy; practitioner strategy and education; and public attitudes and awareness. This was achieved by the provision of evidence to the Transport Select Committee, leading to their recommendation to change legislation, and by working closely with the National Police Chief's Council (NPCC) to provide evidence-based education for their national enforcement campaign. The team's work has been used by road safety charities in lobbying government and documenting a shift in public attitudes to distracted driving. Their findings have also been widely discussed in the popular media.</p>		
2. Underpinning research		
<p>Briggs and her team's research has provided new theoretical and practical explanations for the deteriorated performance of drivers using mobile phones (both handheld and handsfree). This highly applied research has important road safety implications as self-reported phone use by drivers continues to increase (RAC, 2020), despite legislation banning handheld use. The number of individuals killed or seriously injured on UK roads is no longer in year-on-year decline. In 2019, 1,752 people were killed – an average of 5 per day. 17% of all recorded incidents were attributed to 'impairment or distraction', with 67% explained by 'driver error'. Although the number of deaths directly attributed to handheld phone use was relatively low, handsfree phone use could explain a significant proportion of 'driver error' deaths – the largest category being 'failure to look'. Briggs' research addresses the cognitive roots of distraction, highlighting that current law fails to address the serious safety issue of handsfree phone use by drivers.</p> <p>Research into mobile phone use by drivers has emphatically demonstrated that handsfree conversations are equally distracting as handheld, leading to increased accident risk and decreased hazard detection ability. However, while much of this work explains findings in relation to generalised increases in mental workload, Briggs and her team by contrast, provide new theoretical explanations for the specific ways in which phone use affects cognitive and perceptual processing, contributing to 'failure to look' accidents.</p> <p>Building on initial work [O1, O2] that identified the cognitive and perceptual roots of distraction by exploring the impact of stress on performance, the team's imagery research [O3] provided the grounding for a new theoretical explanation for deteriorated driving performance. This work involved measuring driver performance during a handsfree phone call and recording the eye movements of participants. Findings demonstrated that phone conversations draw on visual resources that are also required for visual perception of the driving scene. This competition for shared cognitive resources, in shared brain areas, resulted in phone-using drivers having significantly reduced hazard detection abilities, longer reaction times for critical events, and reduced visual processing of the driving scene. Importantly, eye tracking data</p>		

allowed **Briggs** to demonstrate that distracted drivers could suffer from ‘inattention blindness’: they *viewed* hazards but did not actually see them, due to their attention being allocated elsewhere. This research provided a domain specific explanation for deteriorated driving performance of phone-users rather than explaining findings in terms of generalised cognitive workload.

Building on this work, **Briggs** and her team explored how a driver’s expectations of ‘normal’ driving affects how phone-using drivers apply their attention **[O4]**. This research demonstrated how phone-using drivers cope with over-stretching their attention by processing only information consistent with ‘normal’ driving whilst filtering out other, unexpected information. This research demonstrated that phone-using drivers over-relied on their ‘attentional set’ for normal driving, to the extent that they missed highly salient items in the driving scene. This leads to decreased situational awareness which ultimately contributes to poorer driving performance and increased collision risk.

3. References to the research

All items referenced here were blind peer-reviewed.

- O1. Briggs, G.F., Hole, G.J., & Land, M.F.** (2011) Emotionally involving telephone conversations lead to driver error and visual tunnelling. *Transportation Research Part F: Traffic Psychology and Behaviour*, 14, 313–323. <https://doi.org/10.1016/j.trf.2011.02.004>
- O2. Briggs, G.F.** Hole, G.J., & Land, M.F. (2011) Emotionally involving telephone conversations lead to driver error and visual tunnelling. Paper presented at SARMAC IX conference, New York City, NY, 27-29th June 2011. [SARMAC IX conference New York City June 2011h](#)
- O3. Briggs, G.F., Hole, G.J., & Land, M.F.** (2016) Imagery-inducing distraction leads to cognitive tunnelling and deteriorated driving performance. *Transportation Research Part F*, 38, 106–117. <https://doi.org/10.1016/j.trf.2016.01.007>
- O4. Briggs, G.F., Hole, G.J., & Turner, J.A.** (2018) The impact of attentional set and situation awareness on dual tasking driving performance. *Transportation Research Part F, special issue on Attention and Awareness in Everyday Driving*, 57, 36-47. <https://doi.org/10.1016/j.trf.2017.08.007>

4. Details of the impact

Briggs’s research has had three types of impact: (i) influencing policy recommendations for change to legislation, (ii) practitioner/professional engagement and education, and (iii) increased public awareness and understanding.

Influencing policy recommendations for change to legislation

In April 2019, **Briggs** and Hole submitted evidence to the Transport Select Committee’s consultation on road safety, leading to **Briggs**’ invitation, in June 2019, to provide expert evidence to the committee. The subsequent committee report, in August, heavily cited the team’s research and recommendations **[C1]**. It supported and endorsed, for the first time, the view that legislation should be changed to also ban handsfree phone use and that education and public awareness are critical to reducing offending and associated road deaths. The Chair of the Transport Select Committee described **Briggs**’ evidence as “*very compelling*” commenting that it “[...] *was very significant in shaping our thinking and our conclusions as a Committee. We wouldn’t have made that recommendation if we hadn’t heard her evidence – it gave us the confidence to make quite a bold recommendation to Government*” **[C1]**. These recommendations are therefore directly tied to **Briggs**’ evidence given in the consultation, demonstrating both influence on the debate and demonstrating acceptance of the theoretical explanations offered by the team’s research. The Chair further commented “*There was considerable media interest and I think the coverage of it challenged many people to consider the risks [...] I hope it has encouraged drivers to adopt safer behaviours, including*

not using their mobile phone even if it is hands-free". The Government response, published in December 2019, supported the need for increased public awareness and education and for the 'tightening up' of loopholes in mobile phone law – a factor on which **Briggs** specifically provided evidence [C1]. The proposed change to the law is due to be implemented in early 2021.

Briggs and Hole have since submitted further evidence on mobile phone offending to the Department for Transport's Roads Policing Review (October 2020) [C1] and have created policy documents aimed at non-academic audiences, which explain the relationship between research findings and recommended best practice. These have been endorsed and promoted by the charities 'Roadsafe', 'RoadSafetyGB' and The Parliamentary Advisory Council for Transport Safety (PACTS). **Briggs** has further been asked to provide expert evidence for the Metropolitan Police in Jan 2021, regarding a collision case involving handsfree phone use, which they are bringing to trial.

Practitioner professional engagement and education

Briggs' team have carried out extensive work with the police. This work has shaped the top-level policing approach taken to education and enforcement campaigns on driver distraction. In partnership with Keele University, with funding from the Road Safety Trust, the team devised an evidence-based approach for the National Police Chief's Council (NPCC) mobile phone enforcement campaign in March 2020. This involved knowledge exchange consultations with multiple forces to ascertain how education is usually shared and discuss how an evidence-based approach could meaningfully contribute to behaviour change. The team produced 65 drag-and-drop Tweets, FAQs, suggestions for challenging resistance to mobile phone messaging and a press release. Resources were delivered directly to all 43 UK police forces, who used them during the 2-week safety campaign, introducing a UK standard approach to this campaign for the first time. The Twitter campaign had a reach of 250K, despite the onset of lockdown in week 2, and was described as '*a very helpful and valuable resource*' by the Association of Police and Crime Commissioners (APCC). The Executive Business Manager for the NPCC, commented: "*It is very important that the messaging in place during the operation is evidence-based and engaging [...]. The resources provided by Dr Briggs are highly effective in communicating the serious dangers of phone use by drivers and ensure there was consistency in the messaging being delivered by police forces across the UK during the operation and to achieve a greater likelihood of the messages impacting drivers in the intended way*" [C2].

Following invitations to provide education to key stakeholders in core aspects of road safety, including The National Roads Policing Operation and Intelligence group (NRPOI) and Highways England, **Briggs** was invited to speak at the National Driver Offender Retraining Scheme (NDORS) conference. **Briggs** is now working with NDORS, who are responsible for creating all police-referred driver education courses, to produce evidence-based online courses in light of COVID-19. The first element of this work, which investigated participant feedback on current online courses, was completed in November 2020. Further work, including a funded PhD and the design of validated measures for behaviour change, will commence in January 2021.

Briggs worked with the Police Federation to update two chapters of both 'RoadCraft' and 'Motorcycle RoadCraft', the training manuals used for UK police officers and emergency responders. **Briggs** added research on driver distraction and guidance on defining best practice. Since publication, in October 2020, 33 emergency service organisations across the UK have purchased e-books which are made available to all staff; approximately 3,000 hardcopy books have been sold (75% to practitioners, 25% to civilians); 12 police forces have purchased site-wide licences and 500 individual licences have been sold to other road safety organisations [C3]. The team's research has therefore influenced national level authoritative, professional guidance on best practice for emergency responders.

Using The Open University's world-leading online education platforms, the team have further created online interactive, evidence-based educational resources aimed at the wider public. These give users first-hand experience of the distraction imposed by phone-use. The first interactive went live in July 2019 and has been completed by 10,900 people to date. It has been adopted by Thames Valley Police as an educational tool for offenders and has been used in local council and NPCC national level campaigns [C2]. The second activity, launched in November 2020, focused on hazard detection and driver confidence. To date it has been completed by 3,636 individuals. Data show that around 50% of respondents use their phone while driving, and of those 72% said that having completed the activity they will now either avoid all phone use or limit their handsfree use when driving. 89% said the activity had increased their awareness and understanding of the issues associated with phone use by drivers, and 32% claimed they knew nothing about the dangers of phone use prior to completing the activity [C4].

Increased public awareness and understanding

The team's research was used by road safety charity, 'Brake' in their, 2016, 'Phone Smart' campaign. Brake said the research had provided "*important new insight to the dangers of hands-free phone use, which we have utilised in our campaigning efforts to raise awareness of these dangers and seek behavioural, and ultimately legislative, change*" [C5]. Briggs was invited to speak at the Royal Society for the Prevention of Accidents' (RoSPA) national road safety conference, in 2017, which led to an endorsement from RoSPA and publication of the team's research findings in their widely circulated road safety factsheet. RoSPA commented "*We have used this in numerous driver training presentations to employers as part of our managing occupational road risk work. It has also reinforced our position that hands free use should not be legally permitted*" [C5]. Both Brake and RoSPA have used this research to define best practice and regularly lobby government to address the issue of handsfree phone use. Briggs also authored a preface for the joint Direct Line and Brake survey report (Jan 2020) on in-vehicle distraction [C6] which provided evidence of a documented shift in public attitudes to phone use (e.g. 51% of the 1,009 respondents reported that they thought handsfree phone use was as distracting as handheld use), showing a greater awareness of the dangers of handsfree use. The team's research has also been cited in the position statement for best practice for employees by the Royal College of Nursing [C6].

The team's research has also enjoyed significant international media interest, demonstrating public reach. In 2016, this resulted in several radio and television interviews including Radio 4's Today programme (7.1 million weekly listeners, [C7]). The link between these impact activities and the underpinning research is evident as the 2016 paper is in the top 5% for media interest and impact of all 15 million outputs tracked to date and is the top paper for attention score across all tracked outputs of a similar age [C8]. Public engagement work, adding to increased public debate and awareness also followed publication of the team's 2018 paper. This included Briggs' appearance on BBC News (Aug 2019, with reach across all coverage totalling over 14 million, [C7]); co-authored pieces for The Conversation and Good Motoring magazine; and working as an academic consultant on a BBC ideas film based entirely on this research, which between Aug 2019 and Dec 2020 had 103,000 viewers [C9].

In September 2020, the research was used during 'Project Edward', a Europe-wide safety campaign, run by the Association for Road Risk Management (ARRM) and supported by the NPCC and the Department for Transport. Briggs produced multimedia educational resources on workplace driver distraction which were shared on the campaign website, along with links to several other of the team's resources, including their newly launched 'Driving Change' website [C10]. Project Edward's Campaign Manager described the resources as "*invaluable*" and commented that the varied approach taken "*[...] ensured that research findings were clearly communicated in a targeted manner, for use by members of industry, company policy makers and road safety professionals*". The campaign received 56 million impressions on Twitter, reaching 7.2 million individuals in a week. The Campaign Manager commented that the campaign "*[...] significantly increased awareness amongst several different important*

audiences” with the team’s materials being particularly impactful: “*Driver distraction was the most viewed page on the website across the whole week with approximately 500 unique page views on its first day, compared with others which had around 150-250 views each day*”. He further commented: “*Feedback I have received from relevant individuals in industry who have seen the research indicates that they have been impressed by it and it has made them think differently*” [C10]. Highways England will also be sharing the team’s resources in their new Driving for Better Business campaign website which will launch in January 2021.

Across all impacts cited, the team’s research has informed and influenced the awareness, attitudes and understanding of key stakeholders and the wider public by stimulating debate, providing an evidence-base for policy recommendations and authoritative guidance, and providing targeted education which challenges conventional wisdom.

5. Sources to corroborate the impact

- C1.** Factual statement provided by key beneficiary: report and transcript of evidence session. Testimonial letter from Chair of the Transport Select Committee; Transport Select Committee report: ‘Road safety: driving while using a mobile phone’; Transcript of Select Committee oral evidence: ‘Road safety: mobile phones, 12th June’.
- C2.** Factual statement provided by key beneficiaries and report. Testimonial evidence from Executive Business Manager for NPCC Roads Policing. NPCC campaign evidence. Report on final impact of the campaign to the funder (Road Safety Trust) containing testimonial evidence from APCC and data on reach of campaign.
- C3.** Factual statement provided by key beneficiary. Evidence from the Police Foundation in relation to RoadCraft sales figures/use.
- C4.** Weblink and report. Links to online interactive activities: ‘Are you a focused driver?’ and ‘The mobile office challenge’ on Open Learn. Report of data collected from users of ‘The mobile office challenge’. Report outlining key findings on knowledge and awareness and intended behaviour change following engagement with interactive activity.
- C5.** Factual statements from key beneficiaries. Testimonials from the road safety charities, Brake (from Director of Campaigns) and RoSPA (from Head of Road Safety).
- C6.** Report and policy document. Joint report from Direct Line and Brake evidencing a shift in driver attitudes to phone use. Policy document from the Royal College of Nursing.
- C7.** Weblinks and report. Radio 4 appearance evidence including ‘Today’ (June 2016) and ‘More or Less’ (March 2017). Data on reach of media coverage (August 2019) when the Transport Select Committee’s report was first published, including **Briggs**’ appearance on the BBC News channel, several BBC Radio interviews and interviews with the print media.
- C8.** Report. Altmetric data showing the impact rating of both 2016 and 2018 papers in comparison with other papers of the same age.
- C9.** Weblink. BBC ideas evidence showing link to resource and number of viewers as of December 2020.
- C10.** Weblink, report and factual statement from key beneficiary. Testimonial evidence from Campaign Manager on Project Edward. Weblink and evidence from Project Edward, including demonstration of coverage of use of research, and campaign report (September 2020). Link to the team’s Driving Change website which was also used in the campaign.