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### DISTRACTED DRIVING: TESTING THE CONTOURS OF THE LAW AND PUBLIC POLICY

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## INTRODUCTION

Internet-based technology has advanced at a remarkable pace in the last two decades and, like other rapidly emerging technologies, has presented new challenges to privacy,<sup>1</sup> health and safety,<sup>2</sup> and individual freedom.<sup>3</sup> The technology is promoted both by device providers and by vehicle manufacturers,<sup>4</sup> and is embodied in a variety of devices used aboard vehicles: cell phones;<sup>5</sup> nomadic GPS (global positioning system) devices; fixed in-vehicle screens allowing communication (including texting, data input and retrieval, and other cognitive tasks) between drivers, vehicle occupants, and

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<sup>1</sup> Edward Wells III, *Get a Warrant: Balancing Individual Privacy Rights against Governmental Interests through Textalyzer Technology*, 2019 U. ILL. J.L. TECH. & POL'Y 515, 517 (2019); Christian Curran, *The Textalyzer: The Constitutional Cost of Law Enforcement Technology*, 47 HOFSTRA L. REV. 325, 326 (2018); Rebecca Lipman, *Protecting Privacy with Fourth Amendment Use Restrictions*, 25 GEO. MASON L. REV. 412, 441 (2018).

<sup>2</sup> Jordan B. Michael, *Automobile Accidents Associated with Cell Phone Use: Can Cell Phone Service Providers and Manufacturers be Held Liable Under a Theory of Negligence*, 11 RICH. J.L. & TECH. 1, 4–5 (2005); Sean O'Kane, *Feds Told Tesla to Stop 'Misleading' the Public About Model 3 Safety*, THE VERGE (Aug. 7, 2019), <https://www.theverge.com/2019/8/7/20758349/tesla-model-3-safety-misleading-ftc-national-highway-traffic-administration-elon-musk> [perma.cc/ZRH9-83YM]; Nancy A. Cheever, Larry D. Rosen, L. Mark Carrier & Amber Chavez, *Out of Sight Is Not out of Mind: The Impact of Restricting Wireless Mobile Device Use on Anxiety Levels Among Low, Moderate and High Users*, 37 COMPUTS. HUM. BEHAV. 290, 290 (2014); Adel Badri, Bryan Boudreau-Trudel & Ahmed Saâdeddine Souissi, *Occupational Health and Safety in the Industry 4.0 Era: A Cause for Major Concern?*, 109 SAFETY SCI. 403, 404 (2018); Katherine W. Byington & David C. Schwebel, *Effects of Mobile Internet Use on College Student Pedestrian Injury Risk*, 51 ACCIDENT ANALYSIS & PREVENTION 78, 81–82 (2013); Andy Greenberg, *Hackers Remotely Kill a Jeep on the Highway—With Me in It*, WIRED (July 21, 2015), <https://www.wired.com/2015/07/hackers-remotely-kill-jeep-highway/> [perma.cc/T5MP-M9CS].

<sup>3</sup> U.S. GOV'T ACCOUNTABILITY OFF., GAO-17-75, *INTERNET OF THINGS: STATUS AND IMPLICATIONS OF AN INCREASINGLY CONNECTED WORLD* (2017); PRAVEEN KOLLAIKAL, SRIDEVI RAVURI, & EDDIE RUVINSKY, *CONNECTED CARS* (2015), available at <http://scet.berkeley.edu/wp-content/uploads/ConnCarProjectReport.pdf> [perma.cc/VV8Y-SLK9].

<sup>4</sup> U.S. GOV'T ACCOUNTABILITY OFF., GAO-17-75, *supra* note 3; PRAVEEN KOLLAIKAL ET AL., *supra* note 3; Matt Richtel, *Phone Makers Could Cut Off Drivers. So Why Don't They?*, N.Y. TIMES (Sept. 24, 2016), <https://www.nytimes.com/2016/09/25/technology/phone-makers-could-cut-off-drivers-so-why-dont-they.html> [perma.cc/27UG-TUG5].

<sup>5</sup> Andrew Meola, *How 5G & IoT Technologies Are Arriving the Connected Smart Vehicle Industry*, BUS. INSIDER (Mar. 10, 2020), <https://www.businessinsider.com/iot-connected-smart-cars> [perma.cc/A69L-MVB4].

others;<sup>6</sup> and vehicle and road-based technologies providing warnings to drivers,<sup>7</sup> facilitating GPS functions,<sup>8</sup> and offering entertainment.<sup>9</sup> At the same time, the study of distracted driving has increasingly revealed the dangers associated with the onboard use of these technologies.<sup>10</sup> This has prompted a variety of governmental responses at both the state and federal level in the United States and in a number of foreign jurisdictions.

Driver usage of certain communication devices has been subjected to civil or criminal penalties in many jurisdictions, and is the subject of governmental guidelines in others.<sup>11</sup> Educational and public interest campaigns have also been mounted to encourage drivers to forgo communications devices when they are on the road.<sup>12</sup> Technologies have been developed that monitor driver distraction and warn the driver when it is occurring.<sup>13</sup> Other technologies are capable of prohibiting certain uses of

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<sup>6</sup> Michaela Cronin, *Call Me, Beep Me, If Ya Wanna Reach Me—Unless I Might Be Driving: An Analysis of Sender Liability and Why Pennsylvania Should Not Hold Citizens Responsible for Car Accidents Caused by Drivers They Text*, 63 VILL. L. REV. 321 (2018); Theresa Dalmut Small, *Texting While Driving: The Textalyzer's Unreasonable Search and Seizure*, 29 GEO. MASON U. C.R.L.J. 301, 305 (2019).

<sup>7</sup> Christopher Jensen, *High-Tech Collision Warnings, No Matter How Smart Your Car Is*, N.Y. TIMES (Apr. 26, 2019), <https://www.nytimes.com/2019/04/16/business/collision-warning-systems-aftermarket.html> [perma.cc/T9WF-HD4N]; Sirui Zhu, *Real-World Benefits of Car-Safety Technology*, REUTERS, (July 26, 2019), <https://graphics.reuters.com/AUTO-SELFDRIVING-INSURANCE/0100B0BP0PH/index.html> [perma.cc/WXG4-JHSJ].

<sup>8</sup> Meola, *supra* note 5; see sources cited *supra* note 7.

<sup>9</sup> David L. Strayer Joel M. Cooper, Rachel M. Goethe, Madeline M. McCarty, Douglas Getty & Francesco Biondi, *Visual and Cognitive Demands of Using In-Vehicle Infotainment Systems*, AAA FOUND. FOR TRAFFIC SAFETY 1, 3 (2017), <https://aaafoundation.org/wp-content/uploads/2017/11/VisualandCognitive.pdf> [perma.cc/GVS5-X2MU]; Andrew Liptak, *Elon Musk Says That Teslas Will Soon Be Able to Stream Netflix and YouTube*, THE VERGE (July 27, 2019), <https://www.theverge.com/2019/7/27/8932929/tesla-netflix-youtube-elon-musk-self-driving-in-car-display-watch-streaming-video> [perma.cc/ZKU8-HG5U].

<sup>10</sup> WORLD HEALTH ORG., MOBILE PHONE USE: A GROWING PROBLEM OF DRIVER DISTRACTION 10 (2010), [http://www.who.int/violence\\_injury\\_prevention/publications/road\\_traffic/distracted\\_driving\\_en.pdf](http://www.who.int/violence_injury_prevention/publications/road_traffic/distracted_driving_en.pdf) [perma.cc/JJY3-WM2M].

<sup>11</sup> Julianne Jeha, *Turning Texters into a Civil Liability: Texting and Driving Bans and New Ways of Expanding Liability on the Road*, 24 SUFFOLK J. TRIAL & APP. ADVOC. 232 (2018).

<sup>12</sup> Alvin Powell, *Reeling in Rising Distracted Driving Deaths*, HARV. GAZETTE (July 2, 2019), <https://news.harvard.edu/gazette/story/2019/07/harvard-cha-school-to-tackle-distracted-driving/> [perma.cc/P4WB-SR8Y]; Magdalena Cismaru & Kate Nimegeers, “Keep Your Eyes up, Don’t Text and Drive”: A Review of Anti-Texting While Driving Campaigns’ Recommendations, 14 INT. REV. PUB. NONPROFIT MKTG. 113, 129 (2017); *Leave Your Phone Alone*, QUEENSLAND GOVERNMENT, <https://streetsmarts.initiatives.qld.gov.au/driver-distraction/leave-your-phone-alone> [perma.cc/P4BD-PLUX] (last visited Aug. 6, 2020).

<sup>13</sup> Lidia Kelly, *Australia’s New South Wales Rolls out Mobile Phone Detection Cameras*, REUTERS (Nov. 30, 2019), <https://www.reuters.com/article/us-australia-safety-roads-idUSK>

communication technologies when the vehicle is in motion.<sup>14</sup> U.S. and foreign courts have addressed the liability of drivers, device manufacturers, and vehicle manufacturers when injuries are caused by drivers who were distracted by the use of communication devices.<sup>15</sup> Still, the adverse effects of mobile communication continue to mount.<sup>16</sup>

This article explores the contours of the law and public policy in addressing this clear and present danger to drivers, passengers, pedestrians, and the general public, and argues for specific interventions to minimize its effects. The interventions explored in this article span a variety of approaches, from the least intrusive educational campaigns to insurance industry policies, to traffic safety codes, to criminal law prohibitions on driver behavior, to the imposition of civil liability on device and vehicle manufacturers.

Section Two addresses the nature and findings of the science of driver distraction, drawn from the published literature and our conversations with scientific and engineering professionals. Section Three presents interventions aimed at influencing driver behavior, and surveys legislative approaches in the U.S., Europe, Australia, and Canada. It also describes educational and public interest campaigns, many of which have emerged as a result of pressure from the families of the victims of distracted drivers. Section Four describes societal interventions addressing the design of communications technologies used in vehicles. Section Five addresses a specific subset of these technologies, making the case for manufacturer liability in tort. Finally, Section Six offers a set of recommendations for minimizing what appears to be an increasing, and unnecessary, public safety hazard.

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BN1Y50QX [perma.cc/BH3S-UYH]; Gregory Johnson & Rajesh Rajamani, *Smartphone Localization Inside a Moving Car for Prevention of Distracted Driving*, 58 VEHICLE SYS. DYNAMICS 290, 302 (2020); *see also* sources cited *supra* note 6.

<sup>14</sup> Summer Galitz, *Killer Cell Phones and Complacent Companies: How Apple Fails to Cure Distracted Driving Fatalities*, 72 U. MIAMI L. REV. 880, 901 (2018).

<sup>15</sup> *E.g.*, Meador v. Apple, Inc., 911 F.3d 260 (5th Cir. 2018); Kubert v. Best, 75 A.3d 1214, 1227–28 (N.J. Super. Ct. App. Div. 2013); Gallatin v. Gargiulo, No. 10401 of 2015, at \*2–3 (Pa. Com. Pl. Mar. 9, 2015); Durkee v. Geologic Solutions Inc., 502 Fed. Appx. 326, 327 (4th Cir. 2013); Williams v. Cingular Wireless, 809 N.E.2d 473 (Ind. Ct. App. 2004); EUR. PARL. COMM. ON L. AFFAIRS, COMPENSATION OF VICTIMS OF CROSS-BORDER ROAD TRAFFIC ACCIDENTS IN THE EU: ASSESSMENT OF SELECTED OPINIONS (2007) [https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/378292/IPOL\\_JURI\\_ET\(2007\)378292\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2007/378292/IPOL_JURI_ET(2007)378292_EN.pdf) [perma.cc/XJ52-YL6H]; Michael Chatzipanagiotis & George Leloudas, *Recent Development: Automated Vehicles and Third-Party Liability: A European Perspective*, 2020 U. ILL. J.L. TECH. & POL'Y 109, 114 (2020).

<sup>16</sup> WORLD HEALTH ORG., GLOBAL STATUS REPORT ON ROAD SAFETY 45 (2018), [https://www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/2018/en/](https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/) [perma.cc/3N J2-5HPY]. *See also* WORLD HEALTH ORG., WORLD HEALTH ORG., MOBILE PHONE USE: A GROWING PROBLEM OF DRIVER DISTRACTION, *supra* note 10, at 3.

## I. THE SCIENCE OF DRIVER DISTRACTION<sup>17</sup>

A popular definition of distracted driving is “a diversion of attention away from activities critical for safe driving towards a competing activity.”<sup>18</sup> The modern understanding of distraction and its effects on motor vehicle safety is informed by cognitive models of driver attention and behavior and by empirical studies of distraction, crash, and death rates. The classification of driving tasks explains how drivers allocate their limited attention, the taxonomy of distraction type clarifies what types of behaviors are most distracting, and the theory of smart phone addiction helps to explain why drivers engage in behaviors they know to be risky or illegal. As discussed in more detail below, retrospective data analysis, controlled experiments, and naturalistic driving studies, the latter of which involve the use of on-board cameras and instrumentation to record details of the driver’s behavior, the vehicle, and the relevant surroundings during everyday trips, have all been used in an attempt to assess the risks associated with distracted driving.

### A. Cognitive Science Model of Distraction

The tasks that the driver performs can be divided into three categories. Primary tasks are actions critical for the safe control of the vehicle to its intended destination (stabilization, steering, accelerating, or braking). Secondary tasks are those related to driving but are not essential, such as using the turn or hazard-warning signals, monitoring the speed of the vehicle, using the rear-view and side-view mirrors, or using the navigation system. Tertiary tasks are not related to the operational task of driving. These include, for example, turning on, tuning, and adjusting the volume on the radio, typing initial messages or texting a reply to a text on any number of devices, speaking to a passenger, talking on the telephone, or eating food. Distracting

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<sup>17</sup> This section is based primarily on information gathered for the 2018 Master’s Thesis of Natharat Mongkolsinh in Technology and Policy at MIT. The interested reader may also wish to consult RACHEL GOODSSELL, MITCHELL CUNNINGHAM & ANNA CHEVALIER, DRIVER DISTRACTION: A REVIEW OF THE SCIENTIFIC LITERATURE 1 (2019), <https://www.ntc.gov.au/sites/default/files/assets/files/Driver%20distraction%20-%20A%20review%20of%20scientific%20literature.pdf> [perma.cc/CB3G-ZS8Y]; Mitchell Cunningham & Michael Regan, *Driver Distraction and Inattention*, in SAFE MOBILITY: CHALLENGES, METHODOLOGY AND SOLUTIONS 58–61 (2020). For a slide presentation by Michael Regan and Mitchell Cunningham, see National Road Safety Partnership Program, *Driver Interactions with Mobile Phones* (Mar 24, 2020), [https://www.youtube.com/watch?v=oeR3cP-h\\_yU](https://www.youtube.com/watch?v=oeR3cP-h_yU) [perma.cc/D73S-NDRC].

<sup>18</sup> Michael A. Regan, Charlene Hallett & Craig P. Gordon, *Driver Distraction and Driver Inattention: Definition, Relationship and Taxonomy*, 43 ACCIDENT ANALYSIS & PREVENTION 1771, 1172 (2011).

behaviors are that subset of tertiary behaviors which require enough cognitive load to prevent an adequate focus on primary and secondary tasks.

Early perspectives on distracted driving conceptualized distraction as an excessive workload that subtracts from the limited attentional resource the driver has to devote to driving.<sup>19</sup> Yet intertwined with distraction is the positive concept of attentiveness.<sup>20</sup> Attentiveness is the process by which drivers manage their attention,<sup>21</sup> and the focus of attentiveness studies is to understand how drivers manage their cognitive workload.<sup>22</sup> Studies of workload management have attempted to quantify the extent to which working memory and cognitive control are decreased by multitasking (attempting more than one task at one time).<sup>23</sup> Studies of the cognitive mechanisms of multitasking have shown that people are not actually able to focus on two tasks at once, but rather switch attention between tasks so quickly that it feels to them like they are doing two or more things at once.<sup>24</sup>

### *B. Distraction in the Context of Driving*

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<sup>19</sup> John D. Lee, *Dynamics of Driver Distraction: The Process of Engaging and Disengaging*, 58 ANNALS ADVANCES AUTO. MED. 24, 25 (2014).

<sup>20</sup> Michael A. Regan & David L Strayer, *Towards an Understanding of Driver Inattention: Taxonomy and Theory*, 58 ANNALS ADVANCES AUTO. MED. 5, 1 (2014). Studies on the taxonomy of driver distraction and inattention propose how the two constructs may relate. The two most recent works on the taxonomy are the work by Regan et al., *see supra* note 18, (revisited by Regan & Strayer a few years later), and the study by Engström et al. *See infra* note 22.

<sup>21</sup> Regan et al., *supra* note 18.

<sup>22</sup> *See generally* JOHAN ENGSTRÖM ET AL., EUROPEAN COMMISSION, A CONCEPTUAL FRAMEWORK AND TAXONOMY FOR UNDERSTANDING AND CATEGORIZING DRIVER INATTENTION (2013).

<sup>23</sup> Melina R. Uncapher & Anthony D. Wagner, *Minds and Brains of Media Multitaskers: Current Findings and Future Directions*, 40 PROC. NAT'L ACAD. SCI. U.S. 9889, 9890 (2018).

<sup>24</sup> DAVE CRENSHAW, *THE MYTH OF MULTITASKING: HOW DOING IT ALL GETS NOTHING DONE*. (Jossey-Bass Publishing, 1st ed. 2008); Earl K. Miller, *Multitasking: Why Your Brain Can't Do It and What You Should About It*, RADIUS @ MIT (Apr. 11, 2017), <https://radius.mit.edu/sites/default/files/images/Miller%20Multitasking%202017.pdf> [perma.cc/8NBE-BYJ3]; *The Myth of Multitasking*, NPR: TALK OF THE NATION, (May 10, 2013), <https://www.npr.org/2013/05/10/182861382/the-myth-of-multitasking> [perma.cc/D2VZ-K9EL]; Immanuel Barshi, *The Story of Multitasking*, NASA (Oct. 4, 2018), <https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20180006996.pdf> [perma.cc/ZUB2-UHXB]; Jeff K. Caird, Kate A. Johnston, Chelsea R. Willness, Mark Asbridge & Piers Steel, *A Meta-Analysis of the Effects of Texting on Driving*, 71 ACCIDENT ANALYSIS & PREVENTION 311, 316 (2014); *see also* Regan et al., *supra* note 18. For a more recent treatment, *see generally* Jeff Caird, Sarah Simmons, Katelyn Wiley, Kate Johnston, & William Horrey, *Does Talking on a Cell Phone, with a Passenger, or Dialing Affect Driving Performance? An Updated Systematic Review and Meta-Analysis of Experimental Studies*, 60 HUM. FACTORS 101 (2018).

In any given context, it is important to consider the requirements of the tasks involved in multitasking, and to ask both if they are suited to quickly switching focus between them, and how performance of the tasks may suffer in the event of decreased working memory and cognitive control. Toward that end, three types of distraction have been identified to help show that some tasks are less easy to juggle than others.

### 1. Visual distraction

Vision is essential for safe driving. Visual distraction can occur in several ways. One type of visual distraction is when the driver's view of the road is blocked or compromised. The second type is when drivers take their eyes off the road, such as occurs when a secondary or tertiary task compels the driver to look away from the road. Naturalistic driving studies have shown that looking away from the road for certain durations significantly contributes to crashes.<sup>25</sup> In addition, experimental studies have linked visual distraction to decline in driver performance.<sup>26</sup> As is discussed in Section Four of this article, this has led to recommendations that in-vehicle systems be designed to keep the human-machine interaction to short glances and a limited total duration to complete any particular task. The third type of visual distraction occurs when drivers are physically looking at the road, but not processing

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<sup>25</sup> U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 809 536, THE 100-CAR NATURALISTIC DRIVING STUDY PHASE I – EXPERIMENTAL DESIGN (2002); U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 811 117, ASSESSMENT OF A DROWSY DRIVER WARNING SYSTEM FOR HEAVY-VEHICLE DRIVERS (2009); U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 811 757, THE IMPACT OF HAND-HELD AND HANDS-FREE CELL PHONE USE ON DRIVING PERFORMANCE AND SAFETY-CRITICAL EVENT RISK (2013); Feng Guo, Bruce G. Simons-Morton, Sheila E. Klauer, Marie Claude Ouimet, Thomas A. Dingus & Suzanne E. Lee, *Variability in Crash and Near-Crash Risk Among Novice Teenage Drivers: A Naturalistic Study*, 163 J. PEDIATRICS 1670 (2013); Bruce G. Simons-Morton et al., *Naturalistic Teenage Driving Study: Findings and Lessons Learned*, 54 J. SAFETY RSCH. 41, 46 (2015); Bruce G. Simons-Morton et al., *Crash Rates over Time Among Younger and Older Drivers in the SHRP 2 Naturalistic Driving Study*, 73 J. SAFETY RSCH. 245 (2020); Pnina Gershon, Johnathon Ehsani, Chunming Zhu, Feargal O'Brien, Sheila Klauer, Tom Dingus & Bruce Simons-Morton, *Vehicle Ownership and Other Predictors of Teenagers Risky Driving Behavior: Evidence from a Naturalistic Driving Study*, 118 ACCIDENT ANALYSIS & PREVENTION 96 (2018); Cher Carney Dan McGehee, Karisa Harland, Madonna Weiss & Mireille Raby, *Using Naturalistic Driving Data to Examine Teen Driver Behaviors Present in Motor Vehicle Crashes, 2007-2015*, AAA FOUND. FOR TRAFFIC SAFETY (2017), <https://aaafoundation.org/wp-content/uploads/2017/12/TeenCrashCausationII.pdf> [perma.cc/KW9Z-M8KS].

<sup>26</sup> U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 810 635, DRIVER WORKLOAD METRICS TASK 2 FINAL REPORT A-5 (2006); John Shutko, Ken Mayer, Eero Laansoo & Louis Tijerina, *Driver Workload Effects of Cell Phone, Music Player, and Text Messaging Tasks with the Ford SYNC Voice Interface Versus Handheld Visual-Manual Interfaces*, SAE INT'L 2688, 2689 (2009).



what they see. This is linked to cognitive distraction, and it is also known as “inattention blindness.”<sup>27</sup> This happens, for example, when drivers have their eyes on the road ahead but fail to “see” and properly respond to a red light.

## 2. Physical distraction

Physical distraction occurs whenever the driver’s body is focused on a task other than controlling the vehicle. Perhaps the most serious form is manual distraction, which occurs when drivers physically take their hands off the wheel to perform other tasks, such as texting, using one hand to hold a coffee cup, grooming, or changing the radio station. While the dynamic may change with increased automation in vehicle control, it is currently common sense that drivers need to keep their hands on the wheel in order to be ready to control the vehicle. Physical distraction is also present when the driver’s feet or any other part of the driver’s body is focused on a task other than controlling the vehicle.

## 3. Cognitive distraction

Cognitive distraction occurs when the driver has not allocated sufficient cognitive resources for the safe control of the vehicle. An example is when the driver is mentally occupied by a thought or task other than the primary task of driving. Cognitive distraction can also occur in combination with other forms of distraction. Bryan Reimer of MIT’s Center for Transportation and Logistics expects that cognition plays a role in everything from visual to auditory, haptic (touch-related), verbal, and manual demands.<sup>28</sup>

Compared to visual and physical distraction, cognitive distraction is less understood and more difficult to detect or measure. Its role, mechanism, and importance have not been firmly delineated. Naturalistic driving studies show that drivers are rarely “so deep in thought that the crash risk is significantly increased.”<sup>29</sup> But it appears indisputable that an increased cognitive load decreases the driver’s ability to multitask. Further, it is important to recognize that trying to isolate cognitive demands from other

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<sup>27</sup> NATIONAL SAFETY COUNCIL, UNDERSTANDING THE DISTRACTED BRAIN: WHY DRIVING WHILE USING HANDS-FREE CELL PHONES IS RISKY BEHAVIOR 6 (2012), <https://www.nsc.org/getmedia/2ea8fe8b-d7b7-4194-8ea5-306d30a73972/cognitive-distraction-white-paper.pdf> [perma.cc/8858-8YRN].

<sup>28</sup> Bryan Reimer, *An Evolving Perspective on Driver Attention*, NHTSA FORUM ON COGNITIVE DISTRACTION (2015), [http://web.mit.edu/reimer/www/pdfs/2015\\_05\\_12\\_Reimer\\_NHTSA\\_Cog\\_Distraction.pdf](http://web.mit.edu/reimer/www/pdfs/2015_05_12_Reimer_NHTSA_Cog_Distraction.pdf) [perma.cc/8WDZ-WW2A].

<sup>29</sup> Thomas A. Dingus, *Estimates of Prevalence and Risk Associated with Inattention and Distraction Based upon in Situ Naturalistic Data*, 58 ANNALS ADVANCES AUTO. MED. 60, 65 (2014).

demands may be “splitting hairs” on the issue.<sup>30</sup> Especially when it concerns preventive measures, we need only know that the construct exists, and that excessive cognitive load may compromise the driver’s performance in controlling the vehicle.

### C. Cell Phones are Especially Distracting to Drivers

Although one can be distracted from the safe use and operation of vehicles by non-technological tasks such as eating, talking to a passenger, or attending to quarreling children in the back seat, legal constraints on distraction have focused on technology-based activities because they are not only more common, but also more distracting and easier to address through technological safeguards and regulation. Technology-based activities include talking, texting, or e-mailing on a mobile phone (both hand-held and hands-free), using a GPS device, and performing like tasks such as e-mailing and watching videos on fixed in-vehicle devices.

One major danger with technological distraction is that it can induce a kind of cognitive distortion that can make it difficult for the driver to acknowledge his or her true level of impairment. Survey studies<sup>31</sup> suggest that many people continue to text and drive, despite their recognition that this behavior poses a risk. One’s belief in one’s ability to multitask is a corollary consideration. People tend to be overconfident in their own ability to control the vehicle more safely than others. And discounting of one’s own individual risk—whatever its nature—contributes to an underestimate of the collective societal risk of distraction.

The addictive nature of digital devices (and smart phones in particular) makes them more dangerous than most distracting behaviors. A growing number of surveys and studies show that smart phone use can be

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<sup>30</sup> See sources cited *supra* notes 27–28.

<sup>31</sup> *General Distracted Driving Survey*, STATE FARM (2016), <https://newsroom.statefarm.com/8th-state-farm-distracted-driving-survey/> [perma.cc/T6BJ-34UR]; *Some People Drive Distracted Despite Knowing the Danger*, UC Merced Survey Says, UC MERCED PUB. HEALTH NEWS (Dec. 1, 2016), <https://publichealth.ucmerced.edu/news/2016/some-people-drive-distracted-despite-knowing-danger-uc-merced-survey-says> [perma.cc/D7J6-FY4E]; Barbara Ortutay, *Survey Finds People Text and Drive Knowing Dangers*, BOS. GLOBE (Nov. 11, 2014), <https://www.bostonglobe.com/news/nation/2014/11/06/survey-finds-people-text-and-drive-knowing-dangers/7vYj8sh23GftGQvNn5YCQN/story.html> [perma.cc/8UMN-K9ZH]; Les Masterson, *Distracted, Discourteous and Dangerous: Drivers Confess to Bad Behavior*, INSURANCE.COM (May 11, 2020) <https://www.insurance.com/auto-insurance/distracted-driving> [perma.cc/9ZVC-EKL2]; U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 461, NATIONAL SURVEY ON DISTRACTED DRIVING ATTITUDES AND BEHAVIORS — 2015 3, 37 (2018).

compulsive, and that lack of access to these devices causes anxiety and stress in the same way that other addictions can lead to compulsion and anxiety.<sup>32</sup>

Dr. David Greenfield, founder of The Center for Internet and Technology Addiction and Assistant Clinical Professor of Psychiatry at The University of Connecticut School of Medicine, has studied the problem of mobile phone addiction in some detail. Characterizing the dopamine hits we get from checking messages and notifications on our phones as “digital drugs,” Dr. Greenfield concludes that the use of communication technologies can be physically addictive.<sup>33</sup> When people receive a text, an email, or other notification on their phone, they may not know whether it will be salient and/or desirable. Awareness of the notification thus presents the situation of a conditioned paired response: the recipient knows that a potential “reward” awaits. This partially explains why a person’s cortisol level<sup>34</sup> is elevated when the phone is in their field of vision. That means stress levels are elevated, and the natural response is to reduce that stress level. This means most people will reach for the phone to check without knowing whether the notification is relevant or beneficial. Further, ease of access is a predictor of how addictive something can be. “Nomadic” devices like cell phones are by definition portable so long as they are untethered from the vehicle, and this makes the threshold for accessibility relatively low.

### 1. Specific Technologies That Distract Drivers with a High Risk

Certain technology-related tasks are sufficiently dangerous when performed by the driver that prudence suggests they should be prevented or mitigated if the technology of prevention or mitigation is available. 35 This

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<sup>32</sup> V.T. Thamarai Selvi, R. Gayathri & V. Vishnu Priya, *Teens and Technology Addiction—A Survey*, DRUG INTERVENTION TODAY 663, 664–65 (2019); Saurav Basu, Suneela Garg, M Meghachandra Singh & Charu Kohli, *Addiction-Like Behavior Associated with Mobile Phone Usage Among Medical Students in Delhi*, 40 INDIAN J. PSYCH. MED. 446, 446, 449, 451 (2018); Leif Sigerson, Angel Y.L. Li, Mike W.-L. Cheung & Cecilia Cheng, *Examining Common Information Technology Addictions and Their Relationships with Non-Technology-Related Addictions*, 75 COMPUTERS HUM. BEHAV. 520, 521, 524 (2017); Dale Archer, *Smartphone Addiction*, PSYCH. TODAY (2013), <https://www.psychologytoday.com/us/blog/reading-between-the-headlines/201307/smartphone-addiction> [perma.cc/6CSY-WNEC].

<sup>33</sup> During personal communication on July 11, 2018, Dr. David Greenfield stated that compulsion to check a phone notification is reinforced in the same way as slot machine addiction. Not every notification is important or interesting, but people keep checking on the hope that the next pull/check is positive.

<sup>34</sup> The neurological response in anticipation of a likely reaction by the person receiving the signal.

<sup>35</sup> See generally Nicholas A. Ashford, *Reducing Physical Hazards: Encouraging Inherently Safer Production*, in HANDBOOK OF GREEN CHEMISTRY (Robert Boethling, Adelina Voutchkova, & Paul Anastas, eds., 2013), <http://hdl.handle.net/1721.1/86184> [perma.cc/MN98-T4JT] (proposing that technological alternatives are essential to make advances in accident prevention).

is especially true when considering that distractions can be highly compelling. In general, the following activities pose a high risk of visually, physically, and/or cognitively distracting the driver:

- a) Communication Technology
  - Picture-based messaging services such as Snapchat, Instagram, or Marco Polo
  - Video calling services such as Skype or FaceTime
  - Social-media applications
  - SMS-Messaging and other text-based messaging applications
  - One-touch voice messaging systems (walkie-talkie features)
  - Email
  - Hand-held calling functions
  - Display of visual, audible, or haptic notifications
  - Streaming videos
  - Gaming software
  - Text-based news or magazine applications
  - Camera, photo display, or editing software
- b) Hands-free technology
  - Headsets (two-ear and one-ear) and headphones
  - Voice control of entertainment, calling and text features, or internet access
  - Voice activated assistants such as Siri, Alexa, and OK Google
  - On-board Bluetooth call systems
- c) Certain Uses of GPS
  - User initiated route hazard documentation (Waze)
  - Non-mounted, nomadic devices
  - Destination entry, destination search
  - Route preference options

However, certain activities involving these technologies may not be distracting enough to warrant deterrence, especially given their potential benefits. These include:

- a.) Making a distress or emergency call
- b.) Use of a well-mounted GPS with user-interaction lockout
- c.) Use of apps displaying weather conditions
- d.) Operation of audio entertainment in a driver friendly mode, such as with
  - music streaming applications
  - podcast and audiobook streaming applications

While it may prove to be more protective and precautionary to limit these behaviors in the future as well, they do not fall into the same clearly distracting category as the activities listed above.

*D. Assessing the Societal Risks Associated with Distracted Driving*

As noted above, three primary methodologies have been used to estimate the risk of distractions: retrospective data analysis, controlled experiments, and naturalistic driving studies.

*Retrospective* studies analyze sets of existing after-the-fact data compiled from actual automobile accidents. These crash data can come from various sources, such as government crash databases, crash investigations of individual cases, and fixed video-observation of crashes and/or drivers (as from videos mounted at intersections). The most comprehensive studies of this kind come from the National Highway Traffic Safety Administration (“NHTSA”), which relies on the National Occupant Protection Use Survey to observe roadways during typical daylight hours and note when drivers are using cell phones, using hands free devices, or using their hands to manipulate (purportedly) hands-free devices. A 2019 NHTSA study observed that the percentage of drivers “holding cell phones to their ears while driving” at any given moment had decreased from 5.2% in 2012 to 2.9% to 2017. Over this same period, declines were also observed in the percentage of drivers using visible headsets (from 0.6% to 0.4%) and the percentage of drivers clearly manipulating their handheld devices (from 2.2% to 2.0%). This NHTSA study also found that young drivers use their phones most frequently and are involved in driver-distraction caused crashes more often than any other age group.<sup>36</sup>

NHTSA also operates the Fatalities Analysis Reporting System (“FARS”), which collects data from state and federal reports from accidents in which a person died within 30 days of the crash. According to FARS, of the 37,133 traffic deaths occurring in the U.S. in 2017, 3,166 (9%) occurred in accidents identified by the reporter as related to distracted driving.<sup>37</sup> This system instructs users to report details regarding the cause of the distraction, and to indicate whether the driver was talking on or otherwise manipulating a phone.<sup>38</sup> Of the 3,166 people identified by FARS as having been killed by driver distraction in 2017, 434 (14%) were identified as having been killed by distraction caused by cell phones.<sup>39</sup>

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<sup>36</sup> U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 665, DRIVER ELECTRONIC DEVICE USE IN 2017 (2019); *see also* U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 326, DRIVER ELECTRONIC DEVICE USE IN 2015 2 (2016) (demonstrating generational differences among drivers visibly using handheld devices).

<sup>37</sup> U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 700, DISTRACTED DRIVING IN FATAL CRASHES 2017 1 (2019).

<sup>38</sup> U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 559, FARS/CRSS CODING AND VALIDATION MANUAL 33 (2018).

<sup>39</sup> U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 700, *supra* note 37.

However, using FARS as a measure of the risk of cell phone-induced distracted driving almost certainly underestimates the extent of the problem. Not only do non-fatal injuries likely far outnumber deaths, but reporting practices vary widely across the country. In states without laws restricting driver use of cell phones, cell phone use is generally not reported, reporting forms generally do not include fields for cell phone use, and even those that do generally do not have fields for reporting driver texting or hands-free use.<sup>40</sup> In addition, cell phone use likely is under-reported in states that do have driver cell phone bans, as drivers are incentivized not to admit that they were (unlawfully) using a phone if they caused an accident, and police usually do not have probable cause to search phone contents or records after a car accident.<sup>41</sup> People's reluctance to admit cell phone use in those states likely comes from high awareness of the potential legal ramifications. For example, a 2018 American Automobile Association survey found that more than ninety-five percent of drivers in Georgia were aware of the state's law banning driver cell phone use, and studies in other states have shown similar results.<sup>42</sup> Because of these challenges to data collection and reporting, estimates based on reports of cell phone use are likely to understate their role as a cause of accidents.

The second type of analysis used to estimate the extent or effects of driver distraction derives from *experimental* studies. These studies involve testing under controlled conditions, either in a laboratory, using a driving simulator, or on the road. In experimental studies, participants are typically required to have corrected-to-normal visual acuity and to have familiarized themselves with the simulator or the nature of the experiment, and they are asked to complete specific assignments, such as reading or typing messages or changing lanes. In a virtual reality driving simulator, real-time parameters—such as driving speed, lane position, and brake pedal, gas pedal, and steering wheel inputs—are used to measure driving performance.<sup>43</sup> Other tests record data from markers placed on the driver's body, in an effort to

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<sup>40</sup> NATIONAL SAFETY COUNCIL, UNDERCOUNTED IS UNDERINVESTED: HOW INCOMPLETE CRASH REPORTS IMPACT EFFORTS TO SAVE LIVES 20 (2017), <https://www.nsc.org/Portals/0/Documents/DistractedDrivingDocuments/Crash%20Report/Undercounted-is-Underinvested.pdf> [perma.cc/MD3K-4MP7].

<sup>41</sup> Aggie Baumert, *Are Evan's Law and the Textalyzer Immediate Solutions to Today's Rapid Changes in Technology or Encroaching on Drivers' Privacy Rights*, 33 J. MARSHALL J. INFO. TECH. & PRIV. L. 143, 145, 146, 157 (2018).

<sup>42</sup> AAA, *2018 Georgia Distracted Driving Survey* (Aug. 2018), <https://us.vocuspr.com/Newsroom/ViewAttachment.aspx?SiteName=AAACS&Entity=PRAsset&AttachmentType=F&EntityID=109923&AttachmentID=559d38d2-021f-4332-9182-f4222bea3bd3> [perma.cc/2WFT-H8DN].

<sup>43</sup> Joshua D. McKeever, Maria T. Schultheis, Vennila Padmanaban & Allison Blasco, *Driver Performance While Texting: Even a Little is Too Much*, 14 TRAFFIC INJURY PREVENTION 133, 134 (2013).

assess driving behavior by reading motion signals or body responses.<sup>44</sup> Another complementary feature of experimental studies is the use of surveys to collect data from participants in simulated driving exercises. Some of the information gathered includes cellphone use and ownership, demographics, driving experience, history of traffic offense, or any specific information required by a given study.

One of the main advantages of experimental studies is that (unlike naturalistic studies) they effectively quantify the risks posed by cognitive distractions.<sup>45</sup> Experimental studies have linked visual distraction to declines in driver performance.<sup>46</sup> A key aggregate analysis of 28 experiments using simulators, task simulators, or closed test tracks found that typing or reading text messages leads to slower reaction to hazards on the road, reduced ability to keep the car within a lane, and an increase in the time that drivers take their eyes off the road.<sup>47</sup> The latter finding is of great importance considering that the risk of crashing is increased when the driver looks away from the road for more than 1.6 to 2.0 seconds,<sup>48</sup> and that in the average thirty-seven seconds it takes to type “I’m stuck in traffic. Call you later.” while driving, drivers take their eyes off the road for about twenty-six seconds.<sup>49</sup>

The third methodology, one whose use is currently trending, is the *naturalistic* driving study, which uses long-term data collected from onboard sensors and cameras—positioned in the vehicle so as to be non-obstructing—to record the details of trips taken under what are presumed to be normal driving conditions. Such studies thus provide a daily insight into driver behavior, rather than relying on after-the-fact data or information gathered under experimental conditions that might not represent real-life circumstances.

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<sup>44</sup> Jin-Seung Choi et al., *The Effects of Disruption in Attention on Driving Performance Patterns: Analysis of Jerk-Cost Function and Vehicle Control Data*, 44 APPLIED ERGONOMICS 538, 539–40 (2013).

<sup>45</sup> NATIONAL SAFETY COUNCIL, *supra* note 27, at 11.

<sup>46</sup> See sources cited *supra* note 26.

<sup>47</sup> Caird et al., *supra* note 24.

<sup>48</sup> William J. Horrey & Christopher D. Wickens, *In-Vehicle Glance Duration: Distributions, Tails, and Model of Crash Risk*, 1 J. TRANSP. RSCH. REC. 22, 25 (2007); U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 810 594, THE IMPACT OF DRIVER INATTENTION ON NEAR-CRASH/CRASH RISK: AN ANALYSIS USING THE 100-CAR NATURALISTIC DRIVING STUDY DATA 103 (2006), <https://vtechworks.lib.vt.edu/bitstream/handle/10919/55090/DriverInattention.pdf?sequence=1#page=133> [perma.cc/TSE3-CWAM]; Bruce G. Simons-Morton, Feng Guo, Sheila G. Klauer, Johnathon P. Ehsani & Anuj K. Pradhan, *Keep Your Eyes on the Road: Young Driver Crash Risk Increases According to Duration of Distraction*, 54 J. ADOLESCENT HEALTH S61, S64–65 (2014).

<sup>49</sup> Justin M. Owens, Shane B. McLaughlin & Jeremy Sudweeks, *Driver Performance While Text Messaging Using Handheld and In-Vehicle Systems*, 43 ACCIDENT ANALYSIS & PREVENTION 939, 943 (2011). See generally NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 810 594, *supra* note 48 (measuring inattention of drivers using cameras and car cameras over an 18-month period).

While naturalistic driving studies are currently popular for their ability to collect detailed pre-crash and post-crash data on the driver in a natural driving environment, this methodology appears to have limitations.<sup>50</sup> Because the incidence of actual crashes is relatively small in the collected data, estimates of crash risk are instead based on the incidence of near crashes, or “safety critical events,” which arguably overstates the risk of a true crash.<sup>51</sup> This may well be justified, however, by the strong societal interest in reducing the most serious outcomes of risky or more dangerous behavior. Miscoding of the observed crash event also can lead to inaccurate analysis of the event, and the difficulties of coding naturalistic study data have been raised as an important concern.<sup>52</sup> Conclusions across different naturalistic driving studies have also been inconsistent. For example, data from the Strategic Highway Research Program 2 (“SHRP 2”)<sup>53</sup>—a joint project of the Transportation Research Board, the American Association of State Highway Transportation Officials, and the Federal Highway Administration—indicate that talking on a hand-held cell phone increases one’s crash risk by 2.2 times,<sup>54</sup> while a study conducted by the Transportation Research Board itself found no increase in risk.<sup>55</sup>

Such inconsistencies can make it difficult to reach a firm consensus on the precise crash risk associated with specific technologies and activities. Nonetheless, each of these risk assessment techniques has its own set of strengths and limitations, and each adds valuable insights to the literature on

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<sup>50</sup> For a recent commentary see GOODSSELL, *supra* note 17, at 13.

<sup>51</sup> Dr. Ronald Knippling, who was a chief researcher on a large Virginia Tech Transportation Institute naturalistic driving study, is concerned about the validity of basing estimates on such events. Ronald R. Knippling, *Naturalistic Driving Events: No Harm, No Foul, No Validity*, 197 PROC. 8TH INT’L DRIVING SYMP. ON HUM. FACTORS IN DRIVER ASSESSMENT, TRAINING, & VEHICLE DESIGN 201–02 (2015), [https://drivingassessment.uiowa.edu/sites/drivingassessment.uiowa.edu/files/wysiwyg\\_uploads/030.pdf#page=5](https://drivingassessment.uiowa.edu/sites/drivingassessment.uiowa.edu/files/wysiwyg_uploads/030.pdf#page=5) [perma.cc/9U8G-V8XF].

<sup>52</sup> Professor Paul Atchley, personal communication with Nicholas A. Ashford, August 2, 2018. See generally WORLD HEALTH ORG., GLOBAL STATUS REPORT, *supra* note 16.

<sup>53</sup> THOMAS A. DINGUS, JONATHAN M. HANKEY, JONATHAN F. ANTIN, SUZANNE E. LEE, LISA EICHELBERGER, KELLY STULCE, DOUG MCGRAW, MIGUEL PEREZ & LOREN STOWE, NATURALISTIC DRIVING STUDY: TECHNICAL COORDINATION AND QUALITY CONTROL (2015), <https://trid.trb.org/view/1316354> [perma.cc/GE3H-F64E].

<sup>54</sup> Thomas A. Dingus, Feng Guo, Suzie Lee, Jonathan F. Antin, Miguel Perez, Mindy Buchanan-King & Jonathan Hankey, *Driver Crash Risk Factors and Prevalence Evaluation Using Naturalistic Driving Data*, 113 PROC. NAT’L ACAD. SCI. U.S. 2636, 2640 (2016).

<sup>55</sup> TRENT VICTOR, MARCO DOZZA, JONAS BÄRGMAN, CHRISTIAN-NILS BODA, JOHAN ENGSTRÖM, CAROL FLANNAGAN, JOHN D. LEE & GUSTAV MARKKULA, ANALYSIS OF NATURALISTIC DRIVING STUDY DATA: SAFER GLANCES, DRIVER INATTENTION, & CRASH RISK 56 (2014).



distracted driving.<sup>56</sup> We believe it is important to give careful consideration to the findings from all three methodologies, rather than to champion a particular approach.

### *E. Risk Assessment and Precautionary Regulation*

The usual approach to mitigating the risk from a technology is to first characterize the risk by conducting risk assessments, and to then follow up by devising options for risk management. This two-step approach is most suitable when there is an unequivocal quantification of risk and where there are risk management options of proven effectiveness. As indicated, however, this is not the case with distracted driving. There are serious differences of opinion—and thus uncertainty—as to both the magnitude of the risk and the efficacy of various approaches to prevention or mitigation. Uncertainty of this nature can slow down, or even paralyze, social or governmental initiatives to prevent or mitigate the problem. Accordingly, we believe that adherence to the “precautionary principle”—which has been applied to health, safety, and environmental issues in a variety of contexts<sup>57</sup>—is particularly appropriate. At its core, the precautionary principle specifies that preventative action should be taken when there is uncertainty about the extent of a credible risk.

In other words, the precautionary principle counsels society to err on the side of caution when human lives are at stake. We believe this is the appropriate approach here. For example, while naturalistic studies appear to consistently suggest the seriousness of the increased risk posed by texting while driving, the results of these studies are less conclusive about whether (or to what extent) the risk is increased when the driver is having a phone conversation.<sup>58</sup> And while naturalistic studies indicate that hands-free talking

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<sup>56</sup> See generally Linda S. Angell, *An Opportunity for Convergence? Understanding the Prevalence and Risk of Distracted Driving Through the Use of Crash Databases, Crash Investigations, and Other Approaches*, 58 ANNALS ADVANCES AUTO. MED. 40 (2014) (providing an overview of a variety of research studies about distracted driving).

<sup>57</sup> Nicholas A. Ashford, *The Legacy of the Precautionary Principle in U.S. Law: The Rise of Cost-Benefit Analysis and Risk Assessment as Undermining Factors in Health, Safety and Environmental Protection*, in IMPLEMENTATION OF THE PRECAUTIONARY PRINCIPLE: APPROACHES FROM THE NORDIC COUNTRIES, EU AND USA 354–55 (Nicholas de Sadeleer ed., 2007).

<sup>58</sup> Dingus et al., NATURALISTIC DRIVING STUDY: TECHNICAL COORDINATION AND QUALITY CONTROL, *supra* note 53, Kidd & McCartt (2015) and Guo et al. (2016) do not find an impact on crash risk caused by talking on the cell phone while driving, whereas Owens et al. (2018) and Farmer et al. (2015) find the opposite. See Insurance Institute for Highway Safety (IIHS), *Distracted Driving* (Feb. 2020), <https://www.iihs.org/topics/distracted-driving>; David G. Kidd & Anne T. McCartt, Abstract, *The Relevance of Crash Type and Severity When Estimating Crash Risk Using the SHRP2 Naturalistic Driving Data*, PROC. 4TH INT’L

is safer than hand-held talking on mobile phones,<sup>59</sup> other studies do not find that hands-free devices provide improved safety.<sup>60</sup> Without settling these distinctions, we take the view that preventing all adverse effects—whether through technological interventions alone or in combination with legislation and/or the imposition of legal liability—should receive serious consideration. As discussed below, the most aggressive political venues abroad seem to be moving in this direction.

We acknowledge that more than just uncertainty is involved in the reluctance of governments to undertake preventive action against distracted driving. The risk of distracted driving, though disastrous to its victims, is relatively rare, and government restrictions designed to reduce this risk must necessarily curtail the individual freedom of many who would never have suffered the consequences of distracted driving. The precautionary approach thus imposes a kind of mandatory insurance on all drivers, even though only a relative few may actually be involved in distracted driving. In this light, it is worth recalling the comments of the late biostatistician Marvin Schneiderman: “[W]hen we speak about risks we can live with, it must be remembered that those are the risks that others will die from.”<sup>61</sup>

## II. SOCIETAL INTERVENTIONS AIMED AT INFLUENCING DRIVER BEHAVIOR

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DRIVER DISTRACTION & INATTENTION CONF. MASTER FILE (2015); Feng Guo, Sheila G. Klauer, Youjia Fang, Jonathan M. Hankey, Jonathan F. Antin, Miguel A. Perez, Suzanne E. Lee & Thomas A. Dingus, *The Effects of Age on Crash Risk Associated with Driver Distraction*, 46 INT’L J EPIDEMIOLOGY, 258, 259 (2016); J.M. OWENS, THOMAS A. DINGUS, FENG GUO, YOUJIA FANG, MIGUEL PEREZ & JULIE MCCLAFFERTY, AAA, CRASH RISK OF CELL PHONE USE WHILE DRIVING: A CASE-CROSSOVER ANALYSIS OF NATURALISTIC DRIVING DATA, 18 (2018), [https://aaafoundation.org/wp-content/uploads/2018/01/CellPhoneCrashRisk\\_FINAL.pdf](https://aaafoundation.org/wp-content/uploads/2018/01/CellPhoneCrashRisk_FINAL.pdf) [perma.cc/B2A9-4RP6]; Charles M. Farmer, Sheila G. Klauer, Julie A. McClafferty & Feng Guo, *Relationship of Near-Crash/Crash Risk to Time Spent on a Cell Phone While Driving*, 16 TRAFFIC INJ. PREVENTION 792, 796–99 (2015); It is important to distinguish between “true hands-free systems” and systems that are designed for hand-held use but are used hands-free by plugging in a headset. Poorly designed voice-based systems can result in reduced visual vigilance for the drivers, thus increasing the crash risk. See Dingus, *Estimates of Prevalence and Risk Associated with Inattention and Distraction Based upon in Situ Naturalistic Data*, *supra* note 29, at 64.

<sup>59</sup> Thomas A. Dingus, Justin M. Owens, Feng Guo, Youjia Fang, Miguel Perez, Julie McClafferty, Mindy Buchanan-King & Gregory M. Fitch, *The Prevalence of and Crash Risk Associated with Primarily Cognitive Secondary Tasks*, 119 SAFETY SCI. 98, 103 (2019); U.S. DEP’T TRANSP. NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 811 757, THE IMPACT OF HAND-HELD AND HANDS-FREE CELL PHONE USE ON DRIVING PERFORMANCE AND SAFETY-CRITICAL EVENT RISK 104 (2013).

<sup>60</sup> Krsto Lipovac, Miroslav Đeric, Milan Tešić, Zoran Andric & Bojan Maric, *Mobile Phone Use While Driving-Literary Review*, 47 TRANSP. RSCH. PART F: TRAFFIC PSYCH. AND BEHAV. 132, 139 (2017).

<sup>61</sup> Marvin Schneiderman, personal communication with Nicholas A. Ashford, 1974.

Distracted driving is a global problem, and most governments tasked with the duty of maintaining public safety have addressed it at some level. The most common approach has been to take aim at the driver, and to attempt to influence drivers to stop engaging in significantly distracting behavior. In general, this has taken one (or both) of two forms: proscriptive laws (such as bans on texting while driving) and/or educational campaigns (such as those to publicize the dangers of using cell phone while driving), which can be sponsored by the government and/or private organizations. We address each in turn.

### *A. Proscriptive Regulations*

Legislation has two main roles to play in affecting driver performance. First, it establishes the baseline for the correct and legally acceptable behavior. This influences the drivers who will comply simply because it is the lawful course of action. Second, it deters violation of the law by creating the real possibility for punishment for noncompliance. It affects both the *actual* risk of detection by law enforcement officers who may penalize driver behavior and the *subjective* risk—what the driver *perceives* to be the risk of “getting caught.”

#### 1. Typical structure of driver safety laws

Most jurisdictions have an overarching road law that can be divided into two broad categories. The first of these consists of *general* traffic safety proscriptions, such as prohibitions against “negligent” or “reckless” driving, while the second consists of *specific* rules governing particular behavior, such as those requiring seat belt usage or those prohibiting texting while driving. These specific rules typically name the particular device or behavior they address (such as mobile phones, GPS devices, or speeds above a certain limit). Those pertaining to devices may explicitly ban or restrict certain uses of these devices, and this may be a technical restriction (such as limiting communication to hands-free equipment), a situational restriction (such as banning use when the vehicle is in motion), or a functional restriction (such as banning the use of certain devices for entertainment purposes, but allowing their use for navigational or safety purposes). In 2019, for example, Maine passed a specific law banning the driver’s use of hand-held mobile devices but allowed hands-free equipment. Prior to this law, Maine was protected by

a general law forbidding distracted driving of any type (2009) and a specific law forbidding texting while driving (2011).<sup>62</sup>

An important factor in the enforceability of any particular traffic safety law is whether it is a primary law or a secondary law. If a restriction is considered a *primary* law, law enforcement officers are entitled to stop and cite the driver if the driver is observed engaging in the behavior prohibited by the law. For example, if a ban on hand-held cell phone use is considered a primary law, the driver may be stopped if he or she is observed using a hand-held cell phone while driving. If it is considered a *secondary* law, however, the law enforcement officer may only cite the driver for cell phone use if the driver was witnessed committing a violation of a primary law, such as exceeding the speed limit or improper lane travel, while using the phone. Once pulled over for that infraction, the driver may be cited for cell phone use as an additional offense.<sup>63</sup> In practice, this often means that enforcement of secondary distracted driving laws occurs only when the driver is sufficiently distracted to cause observable violations of primary laws—such as swerving dangerously, driving erratically, changing lanes, running traffic lights, or going too slowly or quickly under the prevailing traffic conditions. Uniform classification of distracted driving restrictions as primary laws would ease law enforcement officers' task of detecting distracted driving and enforcing distracted driving law. It would also send the message that distracted driving is an important issue. Research has shown that enforcement of mandatory seat belt laws has been more effective when those laws are classified as primary rather than secondary.<sup>64</sup>

However, even when distracted driving laws are treated as primary, detecting a driver's illegal use of an electronic device often is a difficult task for those outside the vehicle. Advances in technology or techniques may be able to assist officers in the detection of illegal device use.<sup>65</sup> In 2019, for example, the State of Illinois began a "Trooper in a Truck" program, in which state troopers board a semitruck to patrol the highways, thus allowing them to observe drivers from an elevated vantage point and to observe instances of

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<sup>62</sup> *Maine Governor Signs Ban on Handheld Cellphone Use While Driving into Law*, WMTW NEWS (June 28, 2019, 8:54 AM), <https://www.wmtw.com/article/maine-governor-signs-ban-on-handheld-cellphone-use-while-driving-into-law/28219928> [perma.cc/2SRE-H3U2].

<sup>63</sup> For a general discussion of primary versus secondary traffic laws, see Riccola Voigt, *Primary and Secondary Traffic Violations*, NOLO, <https://www.drivinglaws.org/resources/primary-and-secondary-traffic-violations.html> [perma.cc/36QL-Q2TR] (last visited Aug. 7, 2020); Amanda Essex, *A New Tool to Help Put the Brakes on Distraction*, THE NCSL BLOG, <https://www.ncsl.org/blog/2017/06/06/a-new-tool-to-help-put-the-brakes-on-distraction.aspx> [perma.cc/4NGR-DTDE] (last visited Aug. 7, 2020).

<sup>64</sup> Charles M. Farmer & Allan F. Williams, *Effect on Fatality Risk of Changing from Secondary to Primary Seat Belt Enforcement*, 36 J. SAFETY RSCH. 189, 189–90 (2005).

<sup>65</sup> Galitz, *supra* note 14.

distracted driving that would be below their line of sight in an ordinary vehicle.<sup>66</sup>

Another factor that can influence the effectiveness of traffic safety laws is the nature of the penalty or sanction associated with a violation. In general, sanctions can be divided into civil infractions (not a crime), misdemeanors (a minor crime), or felonies (a serious crime). Most traffic violations in the United States are civil infractions, with a smaller number (including many distracted driving violations) being classified as misdemeanors. However, unless driver distraction has led to fatalities or serious injuries, distracted driving violations are unlikely to be considered felonies.

### 1. Distracted driving regulations in the United States

Although potential avenues for federal legislation have been proposed,<sup>67</sup> the United States has not enacted a federal distracted driving statute or regulation. Rather, as is typical for most traffic safety issues, the regulation of distracted driving has thus far been left to the individual states.

#### **a) General state traffic laws potentially applicable to distracted driving**

All fifty states have two general laws that could be applied to distracted driving. The first is a prohibition against “driving without due care and attention,” which can also be known as “careless driving” or “negligent driving.” In essence, such laws prohibit the operation of a vehicle in an irresponsible manner, and can be applied to a number of potentially dangerous activities, such as speeding, running a red light, or overtaking another vehicle from the inside lane. Where there are no other laws more specifically regulating distracted driving, laws prohibiting careless driving have been used to target a driver’s use of electronic devices. To prove an infraction, however, the state must prove that the driver’s use of the device actually caused a lapse of due care and attention. The second form of general law that has been used to address distracted driving is a prohibition against “reckless” or “dangerous” driving. In general, this is considered a more

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<sup>66</sup> *State Police Launch Distracted Driving Campaign*, (June 19, 2019), NBC NEWS, <https://www.nbcchicago.com/on-air/as-seen-on/state-police-launch-distracted-driving-campaign-511537422.html> [perma.cc/M7E6-G4ZQ]; *Troopers, Truck Drivers Team up to Fight Distracted Driving*, AP NEWS (June 22, 2019), <https://apnews.com/ea37a67a73674a559ddca80f84733356> [perma.cc/8A86-UZJR]; *Illinois State Police Working Alongside Truckers to Curb Distracted Driving*, LEVINSON & STEFANI (June 25, 2019), <https://levinsonstefani.com/illinois-state-police-working-alongside-truckers-curb-distracted-driving/> [perma.cc/GN3T-HLET].

<sup>67</sup> Galitz, *supra* note 14.

serious offense than careless driving, and it carries harsher penalties. While these laws do not specifically restrict the use of particular items or devices, they can be applied when any action or source of distraction causes the driver to drive “in a reckless manner,” which is often defined as the “creation of a substantial and unjustifiable risk of harm and a conscious disregard or indifference to that risk,”<sup>68</sup> or as the operation of a vehicle in “a manner [that] indicate[s] either a wanton or a willful disregard for the safety of persons or property.”<sup>69</sup>

The advantage of general laws such as these is that they can potentially be applied to many different distracted driving situations, and to newly introduced devices that may be used by drivers. However, because the laws lack specificity, the act of using a cell phone, navigation system, or visual screen is not necessarily considered a violation. In any given case, which actions will be held to constitute “careless” or “reckless” driving depends on the state’s definition and the court’s willingness to apply the law broadly. In states where there is no precedent for the use of electronic devices being considered careless or reckless behavior, courts may be reluctant to be the first to interpret the law so as to include them. And in states that have no laws specifically targeting the use of certain devices (such as the hand-held use of cell phones), defendants may be able to avoid a conviction for negligent or reckless driving by arguing that the absence of the more specific prohibition indicates a general tolerance of the behavior. A few states have addressed this issue by specifically linking distracted driving to negligent or reckless driving. New Jersey, for example, provides that if a fatality occurs as a result of the driver’s phone use, reckless driving may be assumed.<sup>70</sup> Some states also have considered the adoption of a distracted driving law that specifies distraction generally as an offense, but does not use technology-specific language. Such a law was rejected in New Jersey,<sup>71</sup> after critics argued that careless and reckless driving laws are sufficient, and that the vagueness of a general ban on distraction would invite law enforcement officers to abuse their power.<sup>72</sup>

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<sup>68</sup> JAMES J. FAZZALARO, OFF. OF LEGIS. RSCH., 2000-R-1139, THE RECKLESS DRIVING LAW, (Conn. 2000), <https://www.cga.ct.gov/2000/rpt/2000-R-1139.htm> [perma.cc/HWP3-9VMA].

<sup>69</sup> COLO. REV. STAT. § 42-4-1401 (2019).

<sup>70</sup> N.J. STAT. ANN. § 2C:11-5(a) (2020).

<sup>71</sup> The proposed law A1908 of 2016 would have prohibited drivers “from engaging in any activity, not related to the operation of the vehicle, in a manner that interferes with the safe operation of the vehicle.” H.R. 140, 217th Leg., Gen. Assembly (N.J. 2016), available at [http://www.njleg.state.nj.us/2016/Bills/A2000/1908\\_11.HTM](http://www.njleg.state.nj.us/2016/Bills/A2000/1908_11.HTM) [perma.cc/2TZB-TME6] (proposing distracted driving provisions—these provisions are yet unenacted).

<sup>72</sup> See Vivian Yee, *A Distracted-Driving Ban in New Jersey? Some Say It Threatens a Way of Life*, N.Y. TIMES (Aug. 17, 2016), <https://www.nytimes.com/2016/08/18/nyregion/new->

## b) Device-specific state distracted driving laws

### i. Cell phone laws

The proliferation and use of mobile phones have spurred considerable legislative action among the states. The most homogenous and widely enacted legislation (although differing in the severity of penalties) has been a ban against texting while driving. The first state to enact such a ban was Washington in 2007,<sup>73</sup> and by 2020, forty-eight states, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands had passed texting bans.<sup>74</sup> Bans against driving while talking on hand-held phones actually emerged earlier, with a 2001 New York law,<sup>75</sup> but have taken longer to spread across the country. With the recent enactment of such legislation in Arizona,<sup>76</sup> Georgia,<sup>77</sup> and Massachusetts,<sup>78</sup> among others,<sup>79</sup> twenty-one

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jersey-distracted-driving-ban.html. [perma.cc/97PB-CQRD] (highlighting the purported downsides to a bill that poses an “existential threat” to the privacy of one’s own vehicle).

<sup>73</sup> Catherine Chase, *U.S. State and Federal Laws Targeting Distracted Driving*, 58 ANNALS ADV. AUTO. MED. 84, 86 (2014).

<sup>74</sup> GOVERNORS HIGHWAY SAFETY ASS’N, *DISTRACTED DRIVING LAWS BY STATES 1, 3* (2020), [https://www.ghsa.org/sites/default/files/2020-02/DistractedDrivingLawChart-FEB20\\_0.pdf](https://www.ghsa.org/sites/default/files/2020-02/DistractedDrivingLawChart-FEB20_0.pdf) [perma.cc/AR2M-H52C].

<sup>75</sup> Chase, *supra* note 73, at 88.

<sup>76</sup> See *Arizona Now Bans Hand-Held Cellphone Use While Driving*, AZFAMILY.COM (Apr. 22, 2019), [https://www.azfamily.com/news/arizona-now-bans-hand-held-cellphone-use-while-driving/article\\_e9a98822-6521-11e9-ba83-fb4bcb425e02.html](https://www.azfamily.com/news/arizona-now-bans-hand-held-cellphone-use-while-driving/article_e9a98822-6521-11e9-ba83-fb4bcb425e02.html) [perma.cc/LB8S-8UXF] (reporting on the 2019 distracted driving bill signed by Gov. Ducey).

<sup>77</sup> See GA. GOVERNOR’S OFFICE HIGHWAY SAFETY, *Georgia’s Hands-Free Law Took Effect July 1, 2018*, <https://www.gahighwaysafety.org/highway-safety/hands-free-law/> [perma.cc/K2LV-P274] (last visited Aug. 9, 2020) (discussing new restrictions on drivers including requirement that they “cannot have a phone in their hand or touching any part of their body while talking on the phone while driving”).

<sup>78</sup> The Massachusetts hands-free law came into effect on February 23, 2020 with a first offense financial penalty of \$100 and up to \$500 for a third and/or subsequent offenses. MASS. GEN. LAWS ch. 90, § 13B, <https://www.mass.gov/info-details/mass-general-laws-c90-ss-13b> [perma.cc/WKY8-U7BT] (2020). Furthermore, this law also includes language that treats vehicles located in motor vehicles and/or bicycle lanes as operating vehicles. *Id.* The law only applies to drivers of motor vehicles, and so does not apply to bikers or riders of electronic scooters. *Id.*; Nik DeCosta-Klipa, *What You Can—and Can’t—Do Under the New Hands-Free Driving Law in Massachusetts*, BOSTON.COM (Feb. 18, 2020), <https://www.boston.com/cars/local-news/2020/02/18/hands-free-driving-law-massachusetts> [perma.cc/F48N-Q6YJ].

<sup>79</sup> Other states include Minnesota, Maine, and Tennessee. See generally MINN. DEP’T PUB. SAFETY, OFF. TRAFFIC SAFETY, *Hands-Free Law*, <https://dps.mn.gov/divisions/ots/hands-free/Pages/default.aspx> [perma.cc/QE6C-JK65] (last visited Aug. 9, 2020); Katharine England, *Maine’s Hand-Free Driving Law*, DEP’T PUB. SAFETY (Sept. 19, 2019), <https://www.maine.gov/dps/msp/media-center/public-releases/maines-hands-free-driving->

states, along with the District of Columbia, Puerto Rico, Guam, and the Virgin Islands, now ban drivers from using hand-held cell phones.<sup>80</sup> For a timeline of the enactment of legislation banning the use of hand-held devices within the United States, see Graph 1. Some smaller units of government have also addressed driver cell phone use. While Montana has no statewide distracted driving law, several cities in this state have enacted texting bans.<sup>81</sup> And in 2012, Chapel Hill, North Carolina, enacted an ordinance banning both hands-free and hand-held use of cell phones while driving,<sup>82</sup> although the law was later struck down as inconsistent with the state constitution.<sup>83</sup> Some states have statutes preempting local jurisdictions from enacting their own distracted driving laws, but North Carolina is not among them.<sup>84</sup>

### Graph 1. Enactment of hand-held cellphone bans in the United States.

NY		DC		NJ		OR		DE		VT		TN								
				CA		HI		AR		NM		RI MN								
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021

Overall, there appears to be a trend among the states towards tougher cell phone use laws, and some existing laws have been amended to reduce the ambiguity of statutory language and to simplify enforcement. For example, Oregon replaced the word “communication device”—which had opened a loophole for drivers who argued they were not using their phones for communication purposes—and replaced it with the term “mobile electronic device.”<sup>85</sup> Arkansas also amended its statutory language in a way

law [perma.cc/AS44-3FJS]; Tyler Whetstone, ‘Hands-free’ Cellphone Law Targets Distracted Drivers in Tennessee, USA TODAY (June 26, 2019), <https://www.usatoday.com/story/news/nation/2019/06/26/hands-free-law-distracted-driving-targeted-new-tennessee-law/1578111001/> [perma.cc/6LH2-77TD].

<sup>80</sup> GOVERNORS HIGHWAY SAFETY ASS’N *supra* note 74, at 3.

<sup>81</sup> *Distracted Driving Laws in Montana*, DMV.COM, <https://www.dmv.com/mt/montana/distracted-driving-laws> [perma.cc/5R42-AB4D] (last visited May 11, 2020).

<sup>82</sup> CHAPEL HILL, N.C., CODE OF ORDINANCES art. VII, §§ 21-63 to 21-64, (2012).

<sup>83</sup> *See Judge Rules Cell Phone Ban Unconstitutional*, ABC 11 (Aug. 2, 2012), <https://abc11.com/archive/8759175/> [perma.cc/J823-P8RK]; Chapel Hill, N.C., Ordinance No. 2014-06-23/O-3 § 1 (June 23, 2014) (repealing art. VII, §§ 21-63 and 21-64, derived from ordinance No. 2012-03-26/O-5 § 1 (Mar. 26, 2012)).

<sup>84</sup> *Distracted Driving*, GOVERNORS HIGHWAY SAFETY ASS’N, <https://www.ghsa.org/state-laws/issues/Distracted-Driving> [perma.cc/7JBQ-4KFX] (last visited May 11, 2020).

<sup>85</sup> OR. DEP’T TRANSP. DISTRACTED DRIVING TASK FORCE, REDUCING DISTRACTED DRIVING IN OREGON: AN INTERDISCIPLINARY APPROACH TO A STATEWIDE PROBLEM 12 (2017) <https://www.oregon.gov/ODOT/Safety/Documents/DistractedDrivingReport.pdf> [perma.cc/T8NY-27AE]; Whitney Woodworth, *Oregon Cellphone, Distracted Driving Law Brings Bigger Fines, Jail Time*, STATESMAN J., (Sept. 18, 2017), <https://www.statesmanjournal.com/story/news/2017/09/18/oregon-cell-phone-distracted-driving-law-brings-bigger-fines-jail-time/677565001/> [perma.cc/23ZW-MC23].



that expanded the definition of distracted driving. Arkansas is replacing “hand-held wireless telephone” with “wireless telecommunications device.” This more inclusive definition now bans other devices, including tablets and laptop computers, from texting, emailing, using social networking sites, and more.<sup>86</sup> Similarly, Washington now bans the use of “hand-held devices” while driving.<sup>87</sup> And Georgia enacted a hands-free law in 2018 specifically banning drivers from watching, recording, or broadcasting videos.<sup>88</sup>

States also appear to be acknowledging that blanket bans on the hand-held use of electronic devices are simpler to enforce than texting bans (which require law enforcement officers to prove that texting, and not simply manipulation of the phone, has occurred). In addition, some states that did not allow primary enforcement of their texting bans are now modifying the bans to characterize them as primary laws.<sup>89</sup>

Some states have also increased the fines for violation of distracted driving laws.<sup>90</sup> The two states with perhaps the harshest penalties in the United States for distracted driving are Alaska and Utah. In theory, violating the Alaska texting law can cost the driver \$10,000 and one year in prison.<sup>91</sup> However, the sanctions imposed rarely are this high in practice. Cindy Franklin, Anchorage's municipal prosecutor, reports that \$1,000 would be the practical maximum.<sup>92</sup> Utah does not have a blanket ban on hand-held devices, but the driver who is involved in an accident while using a phone could face a misdemeanor charge with fines of up to \$750 and license suspension or jail time.<sup>93</sup>

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<sup>86</sup> See generally Sach Oliver, *What You Need to Know About Arkansas' New Texting and Driving Law*, BAILEY & OLIVER L. FIRM (June 15, 2017), [https://www.baileyoliverlawfirm.com/news/2017/jun/15/what-you-need-know-about-arkansas-new-texting-and-/\[perma.cc/7S4R-B9XT\]](https://www.baileyoliverlawfirm.com/news/2017/jun/15/what-you-need-know-about-arkansas-new-texting-and-/).

<sup>87</sup> Abby Spelman, *Washington's New Distracted Driving Law Goes into Effect July 23. Here's What Not to Do*, NEWS TRIB. (July 7, 2017), <http://www.thenewtribune.com/news/politics-government/article160246304.html>.

<sup>88</sup> GA. GOVERNOR'S OFFICE HIGHWAY SAFETY, *supra* note 77.

<sup>89</sup> See *Twelve States Have Advanced Tougher Distracted Driving Bills This Year*, INS. J. (June 1, 2017), <https://www.insurancejournal.com/news/national/2017/06/01/453059.htm> [perma.cc/YHB2-MZVR] (reporting on nationwide changes in distracted driving laws).

<sup>90</sup> These include Arkansas, District of Columbia, North Dakota, Colorado, and Washington. *Id.*; see also Ann Kitch, *State and Federal Efforts to Reduce Distracted Driving*, NAT'L CONF. STATE LEGIS. (June 2018), <https://www.ncsl.org/research/transportation/state-and-federal-efforts-to-reduce-distracted-driving.aspx> [perma.cc/F2XZ-6ZDQ].

<sup>91</sup> *How to Follow Distracted Driving Laws*, DMV.COM, <https://www.dmv.com/distracted-driving-penalties> [perma.cc/FZ4V-B5A2] (last visited May 12, 2020).

<sup>92</sup> Jeremy Biberdorf, *State-By-State Penalties for Texting while Driving*, ONLINEAUTOINSURANCE.COM (Apr. 8, 2021), <http://www.onlineautoinsurance.com/research/texting-while-driving-study/> [perma.cc/J2JY-TG5H].

<sup>93</sup> See generally *Distracted Driving Laws in Utah*, DMV.COM, <https://www.dmv.com/ut/utah/distracted-driving-laws> [perma.cc/EQL3-NZEV] (last visited May 12, 2020).

The efficacy of cell phone bans has been a subject of academic debate. A 2011 study by the Swedish National Road and Transport Research Institute found that drivers were likely to ignore such bans, thus making the laws ineffective. However, a recent study of states that passed primary driving bans found that the frequency of emergency room visits for minor vehicle crash injuries in each state decreased 8%, on average, in the year after the state's law went into effect.<sup>94</sup> App developer and insurance industry subsidiary, TrueMotion, has also reported that the frequency of distracted motion detected by their technology decreases in any given jurisdiction in the month after a distracted driving law goes into effect in that jurisdiction.<sup>95</sup>

### *ii. Earphone or headset Laws*

Although such laws are not as prevalent or well known as cell phone restrictions, seventeen states have laws banning certain uses of earphones or headsets while driving.<sup>96</sup> Colorado's law, which is typical, bans the use of earphones by drivers, but exempts protective headgear with built-in speakers and devices that enable hands-free phone use while only covering one ear.<sup>97</sup>

## 2. Distracted driving regulations in Europe, Australia, and Canada

Interest in distractions to drivers from electronic devices is not unique to the United States, and restrictions on the use of such devices can be found in the traffic laws of numerous countries throughout the world.<sup>98</sup> Here, we focus on three areas of the Western world that could be considered roughly analogous to the U.S. Fines for unlawful distracted driving in some of these countries can be high. In Europe, the Netherlands has the highest fine for

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<sup>94</sup> Alva O. Ferdinand, Ammar Aftab, & Marvellous A. Akinlotan, *Texting-While-Driving Bans and Motor Vehicle Crash-Related Emergency Department Visits in 16 US States: 2007–2014*, 109 AM. J. PUB. HEALTH 748, 752 (2019).

<sup>95</sup> See Kyle Stock, *How States Are Battling Distracted Driving*, INS. J. (2018), <https://www.insurancejournal.com/news/national/2018/10/22/505211.htm>. [perma.cc/78NJ-9LL5] (discussing an observed decrease in distraction in Rhode Island and Georgia).

<sup>96</sup> The states with some form of this law are: Alaska, Arizona, California, Colorado, Florida, Georgia, Illinois, Louisiana, Maryland, Massachusetts, Minnesota, New York, Ohio, Pennsylvania, Rhode Island, Virginia, and Washington. *Is It Illegal to Drive with Headphones? A State-By-State Guide*, NEWS WHEEL (June 28, 2018), <https://thenews.wheel.com/is-it-illegal-to-drive-with-headphones-a-state-by-state-guide/> [perma.cc/A739-HD3R].

<sup>97</sup> COLO. REV. STAT. § 42-4-1401, *supra* note 69.

<sup>98</sup> See generally WORLD HEALTH ORG., MOBILE PHONE USE: A GROWING PROBLEM OF DRIVER DISTRACTION *supra* note 10. According to the WHO report, as of 2018, 150 countries have a national mobile phone law in effect, 145 countries ban the use of hand-held mobile devices while driving, and 64 countries gather data on distracted driving mostly from police reports.

hand-held mobile phone use—at 230 euros (“EUR”), or roughly \$255 in U.S. dollars<sup>99</sup>—and fines in Ontario, Canada, can be as high as \$3,000 Canadian (CAD) (roughly 2,040 EUR, or \$2,262 U.S.) for a third, or any further, conviction.<sup>100</sup> As in the U.S., however, enforcement of these laws is often made difficult by the inability of enforcement personnel to spot infractions.

### a) European distracted driving regulations

A 2009 survey of Iceland, Switzerland, and twenty-seven European Union member states regarding regulatory policies for mobile phones, personal navigation devices, music players, and TV/video players found that all twenty-nine countries had rules governing distracted driving. All except Sweden had a mix of specific legislation and general legislation for nomadic devices.<sup>101</sup> Since 2009, the distracted driving laws in many European countries have been made stricter. France currently has one of the most restrictive laws in the world on phone use while driving. And Sweden, the only European country that did not have specific legislation on driver cell phone use at the time of the 2009 study, has since passed two increasingly stringent laws regulating such use. In general, European distracted driving legislation on mobile phone use is more homogeneous than legislation pertaining to other devices, and usually requires hands-free use or the mounting of the phone in the vehicle. Legislation regulating the use of personal navigation devices tends to focus on the location and mounting of the device, as a means of restricting manual interaction. Legislation regarding music players generally restricts the use of headphones and the handling of the device. And legislation regarding televisions and video players focuses on restricting screens that are visible to the driver. The fines for violations tend to vary by country and device, with monetary fines ranging from 11 EUR in Lithuania to the aforementioned 235 EUR in the Netherlands. The average financial penalty for a mobile phone infraction among all European countries is 68 EUR (or roughly \$76 U.S.).<sup>102</sup> Some countries also have a penalty point

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<sup>99</sup> Jane Clinton, *UK Penalties for Mobile Phone Use While Driving Among the Highest in Europe*, INEWS (Aug. 12, 2019), <https://inews.co.uk/news/uk/uk-penalties-for-mobile-phone-use-while-driving-among-the-highest-in-europe-325677> [perma.cc/5EZ2-GF9M]; *UK Has Among the Highest Fines in Europe for Hand Held Mobile Phone Use*, IAM RoadSmartFinds, IAMROADSMART (Feb. 26, 2018), <https://www.iamroadsmart.com/media-and-policy/newsroom/news-details/2018/02/26/uk-has-among-the-highest-fines-in-europe-for-hand-held-mobile-phone-use-iam-roadsmart-finds> [perma.cc/5AR9-YWDW].

<sup>100</sup> See *Distracted Driving*, MINISTRY TRANSP. ONT. (May 28, 2021), <https://www.ontario.ca/page/distracted-driving> [perma.cc/MG5H-7CMW].

<sup>101</sup> TIMMO JANITZEK, ANDREAS BRECK, SAMANTHA JAMSON, OLIVER CARSTEN & VOJTECH EKSLER, *STUDY ON THE REGULATORY SITUATION OF MEMBER STATES REGARDING BROUGHT-IN (I.E. NOMADIC) DEVICES AND THEIR USE IN VEHICLES 38–39* (2009).

<sup>102</sup> *Id.* at 51.

system that aims to discourage repeat offenders with the possible suspension or loss of their driver's license. In those countries, each offence is punishable by six to twenty-five percent of the number of points that will lead to the driver's license being suspended or revoked.<sup>103</sup>

The distracted driving laws of four European countries with more restrictive regulations are discussed briefly below.

*i. French distracted driving regulations*

In France, it is illegal to use hand-held phones while in traffic.<sup>104</sup> Violating this law will result in demerit points and a 135 EUR fine on the spot.<sup>105</sup> Though the fine and the number of points deducted are not as high as in some jurisdictions, the French distracted driving law is one of the most restrictive because of its interpretation of "use" as "holding in one's hand." It also broadly bans the use of tablets, computers, and other large screens if they are within the driver's field of vision.<sup>106</sup>

In addition, the regulation of hands-free use in France is also more restrictive. Since 2015, drivers' use of earpieces, headphones, and headsets is prohibited. This means that even though drivers are allowed to take or make hands-free calls, they are not permitted to use headsets such as wired earbuds or even wireless Bluetooth headsets intended for hands-free calling. French drivers may only make hands-free calls on systems that are designed to be used hands-free, such as systems which tether the phone to the vehicle on-board system before the drive begins. This law applies to motorcyclists and bicyclists as well drivers of cars and trucks.<sup>107</sup>

Furthermore, drivers in France are not permitted to use the phone even when the driver has pulled over and the engine is off. After a driver protested

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<sup>103</sup> *Id.* at 53.

<sup>104</sup> CODE DE LA ROUTE [HIGHWAY CODE] art. R412-6-1 (Fr.), [https://www.legifrance.gouv.fr/codes/article\\_lc/LEGIARTI000041910422/](https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000041910422/) [perma.cc/6H2U-PSSU]; *Using a Phone While Driving in France Could Now Cost You Your Licence*, LOC. FR. (June 2, 2020), <https://www.thelocal.fr/20200602/using-a-phone-while-driving-in-france-could-now-cost-you-your-licence/> [perma.cc/UY59-ZF65].

<sup>105</sup> *Téléphone au Volant 2020: Réglementation, Amende et Retrait de points*, LEGIPERMIS (Sept. 25, 2021, 8:54 PM), <https://www.legipermis.com/infractions/telephone-au-volant.html> [perma.cc/6UZW-DEDW].

<sup>106</sup> CODE DE LA ROUTE [HIGHWAY CODE] art. R412-6-2 (Fr.).

<sup>107</sup> In general, there is little consistency among laws banning headset use and there tends to be lower awareness of headset bans among drivers. France has made it clear that hands-free mobile phone use is not allowed with headsets, but many other jurisdictions that have restrictions on both mobile phones and headphones have not clarified the connection between the use of the two technologies as clearly. Glyn Moody, *France Bans Use of Hands-Free Headsets—for Calls, Music, Podcasts—While Driving*, ARSTECHNICA, (Jun. 29, 2015) <https://arstechnica.com/tech-policy/2015/06/france-bans-use-of-hands-free-headsets-for-calls-music-podcasts-while-driving/> [perma.cc/9N8W-SD97].

a fine received for using a phone while parked in a roundabout with hazard lights on, France's highest court ruled that phone use in the car is illegal even when the engine is off, and is subject to the same penalty as when the vehicle is in motion.<sup>108</sup> To use the phone legally, the driver must be parked in a designated parking spot like in a car park or a driveway. The only exception is for emergency calls.

This relative stringency appears to be driven by the French experience. The number of traffic accidents in France increased every year from 2014 to 2018,<sup>109</sup> and France's road safety organization, Sécurité Routière, estimates that distracted driving was responsible for ten percent of these accidents.<sup>110</sup> This led the government to impose new distracted driving restrictions in 2018, including mandatory license suspension for drivers caught using their phone while committing another offense that violates the *Code de la route*; such offenses include failure to use turn signals, failure to stop at a pedestrian crossing, and failure to stop for a red light.<sup>111</sup>

#### ii. Swedish distracted driving regulations

While Sweden has long had general provisions in its traffic laws that could be applied to distracted driving,<sup>112</sup> it had decided not to enact a specific ban on driver phone use because an investigation by the Swedish National Road Administration in 2002 had indicated that such a law would not likely improve road safety.<sup>113</sup>

<sup>108</sup> Dani Deahl, *France's New Law Bans Texting in Your Car Even When Pulled Over*, VERGE (Feb. 6, 2018, 2:02 PM), <https://www.theverge.com/2018/2/6/16979342/france-bans-texting-driving-pulled-over> [perma.cc/HA4L-5PJD].

<sup>109</sup> *France Set to Suspend Licenses of Drivers Caught Using Mobile Phones*, LOCAL (Jan. 9, 2018, 12:56 PM), <https://www.thelocal.fr/20180109/france-could-suspend-driving-licences-of-motorists-caught-with-mobile-phones> [perma.cc/B82E-4S5Q].

<sup>110</sup> Frédéric Darne, *CISR Du 09/01/2018: 80 Km/h, Téléphone, Alcool*, LEGIPERMIS LE BLOG (Jan. 17, 2019), <https://www.legipermis.com/blog/2018/01/10/cisr-du-09-01-2018-80-km-h-telephone-alcool/> [perma.cc/LK9V-D6QB].

<sup>111</sup> Angélique Négroni & AFP Agence, *Sécurité Routière: Matignon Confirme La Limitation à 80 km/h Sur Le Réseau Secondaire*, LE FIGARO (Jan. 9, 2018, 8:35 PM), <http://www.lefigaro.fr/actualite-france/2018/01/08/01016-20180108ARTFIG00283-securite-routiere-le-80kmh-generalise-sur-le-reseau-secondaire.php> [perma.cc/2RRH-XTRT].

<sup>112</sup> See generally *Trafikförordning (1998:1276)* [Traffic regulations (1998:1276)] (Swed.), <http://swedishdl.blogspot.com/p/traffic-regulations-1998-1276-traffic.html> [perma.cc/6FXY-FY86] (explaining that a driver must act with care and caution to avoid traffic accidents).

<sup>113</sup> See generally Christopher Patten, Ruggero Ceci, Therese Malmström & Klas Rehnberg, *Mobiltelefonerande i trafiken - Vägverkets utredning om användning av mobiltelefoner och andra IT-system under körning*, Borlänge: Vägverket (2003) (Swed.), [https://trafikverket.ineko.se/Files/svSE/10966/RelatedFiles/2003\\_91\\_Mobiltelefonerande\\_i\\_trafiken.pdf](https://trafikverket.ineko.se/Files/svSE/10966/RelatedFiles/2003_91_Mobiltelefonerande_i_trafiken.pdf) [perma.cc/P8WE-VK4V] (explaining that a ban on using phones while driving is not needed because it is talking that distracts the driver and not the phones).

In 2011, facing a demand from the European Union for a Europe-wide ban of texting and driving,<sup>114</sup> the Swedish government commissioned the Swedish National Road and Transport Research Institute (“VTI”) to conduct another investigation of the effect of communication devices on drivers’ performance, to investigate various countermeasures, and to evaluate the likely effect of specific cell phone legislation. That study concluded that regulation of drivers’ use of hand-held communication devices such as smart phones was likely to be unproductive.<sup>115</sup> Katja Kircher, one of the VTI researchers, told Sveriges Radio that drivers would ignore any ban and that distracted driving laws alone do not lower crash risks.<sup>116</sup> The VTI study did document the serious detrimental effects that mobile phone conversations and texting can have on drivers, but recommended that Sweden instead implement technological solutions and initiatives to educate the public on the risks of cell phone use.

Despite these recommendations, Sweden passed a cell phone use law in 2013, banning drivers from using their phones in a manner that could be deemed “detrimental” to their driving.<sup>117</sup> The vagueness of this language required law enforcement officers to determine in each case whether a driver’s use of a phone was “detrimental,” which led to difficulty in enforcement. Fredrik Ståhle, head of the traffic police in Stockholm, noted in 2017 that it is difficult to prove that phone use is the cause of abnormal driving behavior.<sup>118</sup> Because of this challenge, many critics argued that the law was toothless and suggested that a complete ban on phone use would be more effective.<sup>119</sup>

Sweden has since enacted such a law. The new law, which became effective in 2018, bans the hand-held use of communication devices while driving:

When traveling with a motorized vehicle, the driver may engage in activities such as the use of mobile phones and other

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<sup>114</sup> See Katja Kircher, Christer Ahlström, Nils Petter Gregersen & Christopher Patten, *Why Sweden Should Not Do as Everybody Else Does 2* (Proceedings of the 3<sup>rd</sup> International Conference on Driver Distraction and Inattention, 2013), <https://www.diva-portal.org/smash/get/diva2:815854/FULLTEXT01.pdf> [perma.cc/W2AZ-YWWX].

<sup>115</sup> *Id.* at 7.

<sup>116</sup> *Texting Behind the Wheel ‘Harmless’: Agency*, LOC. SWED. (Apr. 11, 2012), <https://www.thelocal.se/20120411/40192> [perma.cc/XX8H-TQNH].

<sup>117</sup> Emma Löfgren, *Sweden Takes Another Shot at Banning Texting Behind the Wheel*, LOC. SWED. (Dec. 1, 2017), <https://www.thelocal.se/20171201/sweden-takes-another-shot-at-banning-texting-behind-the-wheel> [perma.cc/P3CJ-YJMC].

<sup>118</sup> *Few Sentenced for Using Mobile Phone Behind the Wheel - Radio Sweden*, SVERIGES RADIO (Jan. 6, 2016), <https://sverigesradio.se/sida/artikel.aspx?programid=2054&artikel=6339480> [perma.cc/J8R3-G2RZ].

<sup>119</sup> *Texting Behind The Wheel: Soon Illegal in Sweden, Too?*, LOC. SWED. (Apr. 26, 2017, 14:41 CEST), <https://www.thelocal.se/20170426/texting-behind-the-wheel-soon-illegal-in-sweden-too/> [perma.cc/4M36-7XK4].

communication equipment only if it does not adversely affect the driving of the vehicle. The driver may not use this equipment in such a way that he or she holds it in her hand.<sup>120</sup>

Violations can result in loss of license and/or a fine of 1,500 kronor (roughly \$170 U.S.).<sup>121</sup> While there is some uncertainty as to whether this language allows drivers to use their phones while the vehicle is stationary, and as to whether law enforcement officers can issue a fine on the spot, the new law should be significantly simpler to enforce, as it makes clear that hand-held phone use while driving is not an acceptable practice.<sup>122</sup>

### *iii. United Kingdom distracted driving regulations*

Drivers in England, Scotland, and Wales are subject to the U.K. Highway Code and the separate Road Traffic Act, while Northern Ireland has its own version of each.<sup>123</sup> The laws applicable to the first three of these countries contain general proscriptions that can be applied to various forms of distracted driving<sup>124</sup>: drivers may not drive dangerously,<sup>125</sup> drive without due care and attention,<sup>126</sup> or drive without reasonable consideration for other road users.<sup>127</sup> There is also a specific law prohibiting mobile phone or tablet use while driving.<sup>128</sup> As of 2017, the penalty for violations of that law was doubled, with the monetary fine increasing from 100 EUR to 200 EUR and the assessment of points increasing from three points to six points. Receipt of the six-point penalty by anyone whose driver's license is less than two years old means immediate suspension of their license. And more experienced drivers will lose their license if they receive 12 points within any three-year period.<sup>129</sup>

<sup>120</sup> Lag (1998: 1276) Trafikförordning. 4 kap.10e § (2017:1284) (Swed.), [https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/trafikforordning-19981276\\_sfs-1998-1276](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/trafikforordning-19981276_sfs-1998-1276) [perma.cc/JZ5M-L96A].

<sup>121</sup> *Swedes Flout Ban on Texting Behind the Wheel*, LOC. SWED. (May 20, 2018, 16:21 CEST), <https://www.thelocal.se/20180520/swedes-flout-ban-on-texting-behind-the-wheel> [perma.cc/EE48-KNG6].

<sup>122</sup> *Id.*

<sup>123</sup> See e.g. *The Official Highway Code for Northern Ireland, 2015* (N. Ir.) 49, <https://www.nidirect.gov.uk/sites/default/files/2021-09/the-official-highway-code-for-northern-ireland-2020.pdf> [perma.cc/7TUB-P3HM].

<sup>124</sup> Road Traffic Act 1988, c. 52 §§ 2, 3 as amended by Road Traffic Act 1991 (U.K.), <https://www.legislation.gov.uk/ukpga/1988/52/contents> [perma.cc/UU5L-VW2Y].

<sup>125</sup> Road Traffic Act 1991, c. 40, § 1 (U.K.), <http://www.legislation.gov.uk/ukpga/1991/40/section/1> [perma.cc/7AU9-QX5D].

<sup>126</sup> Road Traffic Act 1991 c. 40, § 2 (U.K.), <http://www.legislation.gov.uk/ukpga/1991/40/section/2> [perma.cc/7AU9-QX5D].

<sup>127</sup> *Id.*

<sup>128</sup> *Using a Phone or a Sat Nav when Driving*, Gov.UK, <https://www.gov.uk/using-mobile-phones-when-driving-the-law> [perma.cc/AH7B-HYL8] (last visited May 18, 2020).

<sup>129</sup> *Id.*

Despite its relative strictness, this mobile device law does not appear to be having the deterrent effect intended. Data from a 2017 study by the U.K. Driver and Vehicle Licensing Agency show that there were a large number of repeat offenders, with some 6,000 drivers caught at least twice for distracted driving.<sup>130</sup> Research by the Royal Automobile Club (“RAC”) found that 47% of motorists aged between twenty-five and thirty-four admitted making or receiving calls while driving in 2018, up seven percent from the previous year.<sup>131</sup> The RAC also found that 36% of motorists in the 25-34 age group and 29% of those between thirty-five and forty-four used a phone to send texts, post on social media, or check emails while driving in 2018, a 10% rise over 2017.<sup>132</sup> RAC road safety spokesman Pete Williams said, “We fear any benefits [of the stricter law] have run their course with this data showing illegal use is now rocketing among some groups of drivers.”<sup>133</sup> One factor for this is likely a perceived lack of enforcement stemming from a reduction in the number of police officers on the road; in England and Wales, the number of road police officers has recently declined by 27%.<sup>134</sup>

There has been talk in the U.K. of allowing the police to confiscate phones from drivers who violate the law.<sup>135</sup> U.K. police have also announced their intention to seize phones from drivers involved in accidents, and to check whether there is technical evidence the phone has been used recently to make a phone call or send a text.<sup>136</sup> The Police Federation has suggested that confiscating phones could have a strong deterrent effect.<sup>137</sup>

#### *iv. Distracted driving regulations in the Netherlands*

<sup>130</sup> *Thousands of Motorists Caught at Least Twice for Driving While Distracted*, GUARDIAN (Dec. 27, 2017, 19:01 EST), <https://www.theguardian.com/world/2017/dec/28/motorists-driving-while-distracted-uk-dvla-handheld-phone> [perma.cc/M6GU-6GH7].

<sup>131</sup> Russell Hope, *Ten Million Drivers Using Phones at Wheel, Despite Higher Penalties, Study Says*, SKY NEWS (Mar. 21, 2019) <https://news.sky.com/story/ten-million-drivers-using-phones-at-wheel-despite-higher-penalties-study-says-11671188> [perma.cc/7PQ3-E6BA].

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *See Thousands of Motorists Caught at Least Twice for Driving While Distracted*, *supra* note 130.

<sup>135</sup> *Calls for Police to Seize Phones Used Illegally by Drivers*, SKY NEWS (Jan. 27, 2017), <https://news.sky.com/story/calls-for-police-to-seize-phones-used-illegally-by-drivers-10744411> [perma.cc/4WH6-9SSD].

<sup>136</sup> Chris Greenwood, *Police to Check Mobiles in EVERY Car Crash*, DAILY MAIL ONLINE (Oct. 20, 2014, 8:35 EDT), <http://www.dailymail.co.uk/news/article-2706182/Police-check-mobiles-EVERY-car-crash-Crackdown-calls-texting-wheel-bid-cut-deaths-distracted-drivers.html> [perma.cc/2T7Z-Z7P5]; James Vincent, *UK Police to Start Seizing Drivers' Mobile Phones After All Crashes*, INDEPENDENT (July 28, 2014, 13:24 GMT), <https://www.independent.co.uk/life-style/gadgets-and-tech/uk-police-to-start-seizing-drivers-mobile-phones-after-all-crashes-9632873.html> [perma.cc/G7VA-2SZ9].

<sup>137</sup> *Calls for Police to Seize Phones Used Illegally by Drivers*, *supra* note 135.



Currently, the use of mobile telecommunications equipment while driving in the Netherlands is governed by Article 61a of the Dutch Traffic Rules and Signs Regulations:

It is forbidden to hold a mobile phone while driving a motor vehicle, moped, [or] disabled vehicle equipped with a motor.

A mobile telephone means a device intended for the use of mobile public telecommunications services.<sup>138</sup>

As noted, the 230 EUR fine for violations of this restriction is the strictest among European cell phone bans. But the scope of the law remains somewhat unclear.<sup>139</sup> In 2018, a Dutch appellate court ruled that the use of a cell phone while driving is permitted so long as the phone rests in a holder mounted on the vehicle.<sup>140</sup>

In 2019, the Dutch House of Representatives unanimously adopted a bill that treats the use of mobile electronic devices while driving as reckless driving.<sup>141</sup> This bill, in effect since the beginning of 2020, criminalizes the violation of Article 5a (including holding a mobile phone while operating a vehicle) with up to six months in prison if minor injuries or damages are caused by the infraction.<sup>142</sup> Additionally, if the driver is found to be engaged in “extremely dangerous driving,” the driver faces a prison sentence between two and six years, depending on whether the driver’s conduct causes fatal injuries or an accident.<sup>143</sup>

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<sup>138</sup> *Can I Use My Phone While Driving?*, GOV’T NETH., <https://www.government.nl/topics/mobility-public-transport-and-road-safety/question-and-answer/phone-while-driving> [perma.cc/54FV-9ULR] (last visited May 18, 2020); *see also* Art. 61a, Reglement Verkeersregels en Verkeerstekens 1990 (RVV 1990) (Neth.), <http://wetten.overheid.nl/BWBR0004825/2018-07-01#HoofdstukII> [perma.cc/62PQ-U4WK].

<sup>139</sup> Clinton, *supra* note 99.

<sup>140</sup> Janene Pieters, *Drivers Allowed to Touch Cellphone, but Not Hold It, Dutch Court Rules*, NL TIMES (Mar. 7, 2018, 16:00 CET), <https://nltimes.nl/2018/03/07/drivers-allowed-touch-cellphone-hold-dutch-court-rules> [perma.cc/Z98J-46Z7].

<sup>141</sup> Eerste Kamer der Staten-Generaal, 35.086, *Aanscherping Strafrechtelijke Aansprakelijkheid Ernstige Verkeersdelicten*, [https://www.eerstekamer.nl/wetsvoorstel/35086\\_aanscherping](https://www.eerstekamer.nl/wetsvoorstel/35086_aanscherping) [perma.cc/Q5PK-TPLC] (last visited May 18, 2020); Sander van Voorst, *Wetsvoorstel Straft Vasthouden Telefoon Onder Het Rijden Met Maximaal 2 Jaar Cel*, TWEAKERS.NET (Mar. 7, 2018), <https://tweakers.net/nieuws/136057/wetsvoorstel-straft-vasthouden-telefoon-onder-het-rijden-met-maximaal-2-jaar-cel.html> [perma.cc/TN5K-MEU5].

<sup>142</sup> *Higher Sentences for Serious Traffic Offenses*, GOV’T NETH. (Nov. 5, 2019, 15:59 CET), <https://www.government.nl/latest/news/2019/11/05/higher-sentences-for-serious-traffic-offences> [perma.cc/AUY6-8BWF].

<sup>143</sup> *Id.*; *see also* Minister ‘Helemaal Klaar’ Met Roekeloos Rijden: Straffen Veel Hoger, NOS NIEWUS (Mar. 7, 2018, 19:44 CET), <https://nos.nl/artikel/2221097-minister-helemaal-klaar-met-roekeloos-rijden-straffen-veel-hoger.html> [perma.cc/9K4V-MWBB].

*v. Australian distracted driving regulations*

Australia is similar to the United States in that road rules such as distracted driving laws are the responsibility of the individual territories (states). Most territories regulate distracted driving through general laws, such as those prohibiting careless<sup>144</sup> and dangerous<sup>145</sup> driving, and through device-specific laws.<sup>146</sup> These latter laws tend to be modeled on the Australian Road Rules (“ARR”), a set of federal guidelines which serve as “model laws” that the individual territories are free to adopt (or reject) as they see fit.<sup>147</sup> Perhaps as a result of this federal overlay, there tends to be more consistency among the various territorial laws—both in substance and in specific language—than exists among the device-specific laws of the various states of United States. The Australian statutory language is also more up-to-date and tends not to refer to outdated technologies. The laws addressing visual-display units, for example, do not reference cathode ray tube display screens.<sup>148</sup>

ARR (model) Rule 299 addresses the use of television receivers and visual display units in motor vehicles; this covers most electronics with screens, such as DVD players or tablets. Under this rule, already introduced in some of the territories,<sup>149</sup> and expected to be adopted in all states and territories in the near future,<sup>150</sup> the driver must not drive a motor vehicle with a visual display unit operating if any part of the screen is visible to the driver or likely to distract a driver of another vehicle.<sup>151</sup> Exemptions exist for navigational use and use as a driver’s aid.

ARR (model) Rule 300 addresses mobile phones, and every territory in Australia has adopted some form of this rule to enact a ban on the use of

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<sup>144</sup> See, e.g., Road Traffic Act 1961 (South Australia) § 45 (Austl.), <https://lawhandbook.sa.gov.au/ch12s08s05s02.php> [perma.cc/D5YD-EM47].

<sup>145</sup> See, e.g., Road Traffic Act 1961 (South Australia) § 46(1) (Austl.), <https://lawhandbook.sa.gov.au/ch12s08s05s05.php> [perma.cc/4B3X-TVA4].

<sup>146</sup> See, e.g., Road Safety Road Rules, Victorian Consolidated Regulations 2017 (Austl.) [http://classic.austlii.edu.au/au/legis/vic/consol\\_reg/rsrr2017208/s299.html](http://classic.austlii.edu.au/au/legis/vic/consol_reg/rsrr2017208/s299.html) [perma.cc/4R74-BU4U].

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> Susannah Guthrie, *Can a Driver Be Fined if Their Passenger Is Using a Mobile Phone?*, CARADVICE.COM (Feb. 1, 2020, 00:03), <https://www.caradvice.com.au/821651/can-a-driver-be-fined-if-passenger-is-using-a-phone/> [perma.cc/T5RF-GLHJ].

<sup>150</sup> Ally Foster, *Annoying Road Rule Set to Change as New Amendments Introduced*, NEWS.COM.AU (Dec. 5, 2019, 13:43), <https://www.news.com.au/technology/innovation/motoring/on-the-road/annoying-road-rule-set-to-change-as-new-amendments-introduced/news-story/96024b0b2f911338f1b45a5eccc82858> [perma.cc/P3BY-JXJJ].

<sup>151</sup> Australian Road Rules pt 18 div 1 r 299, <https://www.pcc.gov.au/uniform/2019/Australian-Road-Rules-22November2019.pdf> [perma.cc/CDP3-K2YS] (last visited Aug. 9, 2020).

hand-held smart phones while driving.<sup>152</sup> Under Rule 300, drivers are not allowed to touch the phone in any way (other than to pass it to a passenger) unless the vehicle is parked or pulled over to the side of the road. This means that any functionality on the smart phone that requires manual interaction is banned, including texting, emailing, games, and taking selfies. The penalties for violating this ban include fines ranging from \$336 in Australian dollars (AUD) (roughly \$220 U.S.) (Tasmania) to AUD \$1,000 (roughly \$650 U.S.) (Queensland and Western Australia), as well as three to five demerit points.<sup>153</sup> In most territories, an exemption exists for using maps on the smart phone if the phone is properly mounted. In Queensland, the provisions governing the use of the phone for navigational purposes are less clear (even when the phone is mounted).<sup>154</sup> And in Tasmania, although it is illegal for drivers to use their mobile devices while driving, the road rules allow the use of maps on navigational devices and the use of GPS if the devices are properly mounted.<sup>155</sup>

Australia has also taken steps to regulate drivers' use of the smart watch, a relatively new technology worn on the wrist that links to the smart phone. While smart watches are not explicitly referenced in either Rule 299

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<sup>152</sup> *The Laws for Mobile Phone Use when Driving*, LEASEPLAN, <https://drivinginsights.com.au/novated-leasing/mobile-phone-driving-laws/> [perma.cc/L686-ZJ4X] (last visited May 18, 2020).

<sup>153</sup> Before the changes introduced in August 2019, the Northern Territory had the lowest monetary penalty for using a cell phone device while driving with a fine of AUD\$250. Currently, this fine is set at AUD\$500. See *2019 NT Road Rule Changes*, N. TERRITORY GOV'T, <https://roadsafety.nt.gov.au/campaigns/2019-nt-road-rule-changes> [perma.cc/78FQ-DW3T] (last visited May 18, 2020); Joel Clement, *How to Legally Use a Phone While Driving—Australia 2020*, JOHNNY APPLESEED GPS (Jan. 9, 2020), <https://blog.ja-gps.com.au/2020/01/how-to-legally-use-a-phone-while-driving-australia-2020/> [perma.cc/78FQ-DW3T]; *Traffic Offense—Filtered*, DEPARTMENT OF STATE GROWTH TRANSPORT—TASMANIAN GOVERNMENT, [https://www.transport.tas.gov.au/licensing/offences/traffic\\_offences/list?offence\\_query=mobile](https://www.transport.tas.gov.au/licensing/offences/traffic_offences/list?offence_query=mobile) [perma.cc/U26H-RRU6] (last visited May 18, 2020); *WA Introduces New \$1,000 Fine for Using Mobile Phones While Driving, the Equal Highest in Australia*, ABC NEWS (Feb. 11, 2020, 11:53 PM), [https://www.abc.net.au/news/2020-02-12/wa-introduces-\\$1000-fines-for-using-mobile-phones-while-driving/11956732](https://www.abc.net.au/news/2020-02-12/wa-introduces-$1000-fines-for-using-mobile-phones-while-driving/11956732) [perma.cc/4BRE-GTB6].

<sup>154</sup> *Australian Road Rules*, NAT'L TRANSP. COMM'N., <https://www.ntc.gov.au/laws-and-regulations/australian-road-rules> [perma.cc/4UMY-7PKE] (last visited Nov. 26, 2021).

<sup>155</sup> #21 – *Mobile Phones*, TASMANIA POLICE, <https://www.police.tas.gov.au/what-we-do/traffic-policing/traffic-tuesday/21-mobile-phones/> (last visited May 18, 2020); *Road Rules 2019, 300 Use of Mobile Phones*, TASMANIAN GOV'T (Dec. 1, 2019), <https://www.legislation.tas.gov.au/view/html/inforce/2019-12-01/sr-2019-061#GS300@EN>. Originally, the use of maps on the phone was similarly banned in the Australian Capital Territory and South Australia. See generally *Driver Distraction*, AUSTRALIAN FED. POLICE, <https://police.act.gov.au/road-safety/safe-driving/driver-distraction> [perma.cc/9HC8-7UUE] (last visited May 19, 2020); *Hands-free or Hands off: Phones and Driving*, CARSALES, <https://www.carsales.com.au/editorial/details/hands-free-or-hands-off-phones-and-driving-104218/> [perma.cc/PZ8G-J9KW] (last visited May 19, 2020).

or Rule 300, some territories have treated it like a smart phone. In Victoria, for example, drivers are allowed to wear the watch while driving, but are not allowed to take calls on it or touch it, and tasks such as checking text messages and notifications can result in a fine.<sup>156</sup> In a study commissioned by the Victorian Department of Transport, Australian researchers explored the feasibility of developing a vehicle star-rating system meant to evaluate the safety of the vehicle according to its potential for on-board distraction.<sup>157</sup> Although new vehicles are not ranked for their capacity to distract drivers at the moment,<sup>158</sup> this rating system, if successfully implemented, could be a source of information for drivers in choosing their vehicle, and it would go a long way in demonstrating that in-vehicle technologies are not created equal and are not all inherently safe.

On the enforcement front, the New South Wales government has proposed the use of hi-tech cameras as a means of detecting drivers who are using their phones while driving. These cameras would provide photo evidence and would supplement current methods of detecting illegal phone use such as the line-of-site method or the helmet cameras of motorcycle police. Such a camera was tested in Melbourne and reportedly was able to detect 272 cases of illegal phone use within five hours.<sup>159</sup>

#### *vi. Canadian distracted driving regulations*

As in Australia and the United States, distracted driving law in Canada differs by local jurisdiction. All ten Canadian provinces have a specific law governing a driver's use of telematics.<sup>160</sup> British Columbia and

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<sup>156</sup> *Mobile Phones, Technology & Driving*, VICROADS, <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/mobile-phones-and-driving> [perma.cc/9UE5-PH3B] (last visited May 19, 2020).

<sup>157</sup> Kelly Imberger, Christopher Poulter, Michael A. Regan, Mitchell L. Cunningham & Michael Paine, *Considerations for the Development of a Driver Distraction Safety Rating System for New Vehicles*, 31 J. RD. SAFETY 23, 25 (2020); Tracy Bowden, *Distracted Drivers Urged to Put Mobile Phones Away, Remember Safety*, ABC NEWS (Jan. 2, 2018, 6:01 PM), <http://www.abc.net.au/news/2018-01-02/drivers-urged-to-stop-using-mobile-phones-behind-the-wheel/9255482> [perma.cc/653U-N5WC].

<sup>158</sup> See Imberger et al., *supra* note 157.

<sup>159</sup> *Drivers Using Mobile Phones Could Be Fined Without Even Knowing They've Been Caught*, NEWS.COM.AU (Apr. 12, 2018, 4:49 PM), <https://www.news.com.au/technology/innovation/motoring/hitech/drivers-using-mobile-phones-could-be-fined-without-even-knowing-theyve-been-caught/news-story/ecb141e8552b39560f7f395802e447d7> [perma.cc/86N5-JY9H].

<sup>160</sup> All ten Canadian provinces and the Yukon and Northwest territories have introduced bans on hand-held communication—with the exception of Nunavut, the most northerly territory of Canada. See *#LikeLife—Distracted Driving*, INS. BUREAU CAN., <http://www.abc.ca/on/>

Ontario also ban the use of hand-held electronic entertainment devices.<sup>161</sup> The first-time penalty for hand-held phone use ranges from \$233.95 CAD (roughly \$175 U.S.) in Nova Scotia to \$1,200 CAD (roughly \$897 U.S.) in Prince Edward Island, together with three to five demerit points.<sup>162</sup>

The trend in Canada appears to be toward tougher laws. A relatively new Ontario law, for example, imposes a three-day license suspension on a driver's first distracted driving conviction, a seven-day suspension on the second, and a thirty-day suspension on the third.<sup>163</sup> In addition, the first conviction carries a maximum fine of \$1,000 CAD, the second a maximum of \$2,000 CAD, and the third a maximum of \$3,000 CAD plus six demerit points.<sup>164</sup>

### *B. Enforcement of Proscriptive Regulations*

As the foregoing discussions suggest, distracted driving laws are notoriously difficult to enforce. This is especially true for the most common distracted driving restrictions: those banning texting while driving. Regardless of whether the ban is considered a primary or a secondary law, texting is difficult to detect from outside a vehicle, especially in traffic. It is not as easy to detect as the dangling silver buckle of an unfastened seat belt. Quite literally, police officers often must camp out by the side of the road or ride in elevated vehicles to detect violations. This is resource-intensive and takes away from the time the officers have to conduct other duties, which is particularly noteworthy in jurisdictions (like the United Kingdom) that have seen reductions in the size of their police force.<sup>165</sup> High visibility enforcement normally is seen only for short periods of time during enforcement campaigns, as happens annually in the United States in April, which is known as "National Distracted Driving Awareness Month."<sup>166</sup>

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auto/distracted-driving-likelife [perma.cc/D5VW-YHKJ] (last visited May 20, 2020). *Distracted Driving Laws & Penalties Per Province*, CANADA DRIVES, <https://www.canada.drives.ca/blog/tips/distracted-driving-laws-penalties-canada> [perma.cc/PQ5M-G58N] (last visited Mar. 20, 2020); *Residents Reminded of Legislation Coming into Force Aimed at Improved Road Safety*, NEWFOUNDLAND LABRADOR CAN. (June 4, 2018), <https://www.gov.nl.ca/releases/2018/servicenl/0604n03/> [perma.cc/9X72-FC2W].

<sup>161</sup> *Distracted Driving Laws & Penalties Per Province*, *supra* note 160.

<sup>162</sup> *Distracted Driving Laws in Canada*, CANADIAN AUTO. ASS'N, <https://www.caa.ca/distracted-driving/distracted-driving-laws-in-canada/> [perma.cc/HN5Q-BGKC] (last visited July 10, 2020).

<sup>163</sup> MINISTRY TRANSP. ONT., *supra* note 100.

<sup>164</sup> *Id.*

<sup>165</sup> Rachel Schraer, *Have Police Numbers Dropped?*, BBC REALITY CHECK, (July 26, 2019) <https://www.bbc.com/news/uk-47225797> [perma.cc/J3WL-KDEW].

<sup>166</sup> *See Law Enforcement Taking Part in National Distracted Driving Awareness Month*, LEADER PUBLICATIONS, (Apr. 7, 2021), <https://www.leaderpub.com/2021/04/07/law->

It is also simply too easy for the driver to claim that he or she was not texting but doing something else. Even if the law enforcement officer sees a driver handling a device while driving, it is difficult for the officer to establish that the device actually was being used, and even more difficult to the manner in which the device was being used. Although such information may well be embedded in the device or in the records of the wireless provider, measures safeguarding driver privacy, such as the Fifth Amendment need for a search warrant in many situations in the United States, make it even more difficult for officers to gather the needed evidence for prosecution.

Violations may be even harder to detect in newer technology. For example, the first person to be cited for wearing Google Glass while driving beat her traffic ticket because there was no proof the device was operating at the time.<sup>167</sup> In other words, the prosecution could not disprove the possibility that the driver had turned off the Google Glass even though it remained on her face. This suggests that laws banning certain uses of an electronic device while exempting others could be essentially unenforceable.

Even when a crash has already happened and law enforcement officers must investigate and report the cause of the incident, it is difficult to identify distracted driving as the cause or prove it in court. Phone records, when available through legal process, have been strong evidence in court. However, records of this type do not exist for all devices or for all functions of a device. Perhaps if technology such as the “textalyzer”—a product developed by Cellebrite that reportedly will reveal whether (and when) a mobile device has been used for texting—were an available tool for officers, more reliable evidence and information could be collected.<sup>168</sup> If regulations were to require the recording of data for use in distracted driving investigations, this could improve the effectiveness of the laws, but would also raise privacy concerns. For example, New Jersey has considered, but not passed, a law that would allow police officers to scan a driver’s device at the scene in the event of an accident involving a fatality, an injury, or other

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enforcement-taking-part-in-national-distracted-driving-awareness-month/ [perma.cc/XLP6-Z95N] (describing the efforts of law enforcement agencies in Michigan to crack down on distracted driving during the month of April).

<sup>167</sup> Marty Graham, *California Woman Who Drove with Google Glass Beats Traffic Ticket*, REUTERS (Jan. 16, 2014, 7:15 PM), <https://www.reuters.com/article/us-usa-googleglass-trial-dismissal/California-woman-who-drove-with-google-glass-beats-traffic-ticket-idUSBREA0F1XR20140117> [perma.cc/VG5H-J8ZM].

<sup>168</sup> Bruce Brown, *Using Your Phone While Driving May Be Stupider than Ever*, DIGITAL TRENDS (Apr. 12, 2016), <https://www.digitaltrends.com/mobile/cellebrite-textalyzer-driving-mobile-test-news/>; David Kravatz, *First Came the Breathalyzer, Now Meet the Roadside Police ‘Textalyzer,’* ARS TECHNICA (Apr. 11, 2016, 4:00 PM), <https://arstechnica.com/tech-policy/2016/04/first-came-the-breathalyzer-now-meet-the-roadside-police-textalyzer/> [perma.cc/B78T-7UBD].

damage.<sup>169</sup> In Australia, helmet cameras that motorcycle police wear can be used as one source of evidence. And, as noted, some territories in Australia are also beginning to use hi-tech cameras installed in the road infrastructure to collect photo evidence of distracted driving.<sup>170</sup>

Certainly, one of the prime considerations in fashioning distracted driving laws should be whether, and how, an officer may be able to enforce the law on the road. Wholesale bans on device usage tend to mitigate enforcement problems. Simply detecting whether the device such as a cell phone was in a driver's hand is much simpler than having to differentiate whether the phone was being used for navigation, hands-free calling, or not being used at all. But while this may result in higher rates of enforcement, it may not be a good solution for variable technologies such as the navigation systems. In order to allow some functionalities of nomadic devices, the best solution may be to develop a standard for the integration of nomadic devices with in-vehicle systems. As discussed in Section Four, standards and regulations that apply to auto manufacturers could specify what constitutes a minimum standard of care, or specify a specific performance benchmark for preventing visual, manual, and cognitive distraction.

It is also important to note the work of Bjørnskau & Elvik, who argue that the subjective risk of detection is of greater importance for rule compliance than the objective sanction severity.<sup>171</sup> This suggests that it may be more important to design laws that are simple to enforce rather than to raise the monetary fines higher and higher. Another important consideration is a law's complexity, and the concomitant potential for confusion. A complex use restriction with multiple exemptions can be confusing. And drivers may become even more unclear as to what is expected of them when they consider all the laws that may apply to distracted driving, which may include general laws such as restrictions on "careless" or "distracted" driving, texting bans, hand-held use bans, earphone bans, and restrictions on the installation of screens or other video-display units. It may be difficult for the driver to anticipate which law will be enforced. As the chief of the Maine State Police told reporters, "The state police have been challenged by people who do not like the fact that they have gotten a ticket for distracted driving for talking on their cell phone. We are not writing the ticket for talking on the

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<sup>169</sup> S2297, 217th Leg. (N.J. 2016) [http://www.njleg.state.nj.us/2016/Bills/S2500/2297\\_I1.HTM](http://www.njleg.state.nj.us/2016/Bills/S2500/2297_I1.HTM) [perma.cc/3472-FH7G] (allowing officers to scan cellphones belonging to drivers involved in crashes resulting in death, bodily injury or property damage and imposing \$300–500 fines and loss of license for refusal so surrender cellphone).

<sup>170</sup> Kelly, *supra* note 13; *Drivers Using Mobile Phones Could Be Fined Without Even Knowing They've Been Caught*, *supra* note 159.

<sup>171</sup> Torkel Bjørnskau & Rune Elvik, *Can Road Traffic Law Enforcement Permanently Reduce the Number of Accidents?* 24 ACCIDENT ANALYSIS & PREVENTION 507, 518 (1992).

phone; we are writing the ticket because the person was observed to be driving in a distracted manner.”<sup>172</sup>

Overall, while we need regulations with “teeth,” this does not mean extreme regulations that would ban any or all devices completely. Nor does it necessarily mean higher monetary fines or penalty points. It *does* mean that effective regulations are those that can be seriously, accurately, and consistently enforced. Because of the difficulty in regulating driver behavior, it may be preferable to place legal restraints on the technologies themselves; this is the subject of Sections Four and Five of this article. Non-regulatory efforts such as educational campaigns to inform the public of distracted driving and its dangers can use technological guidelines as a reference for best practices. Such efforts may enable consumers to make better choices when buying their vehicle or when buying technology they will use in their vehicle, to adjust their attitude towards distracted driving, and to better regulate their own behavior or the behavior of loved ones on the road.

### C. Educational and Public Interest Campaigns

Because of the difficulty in enforcing distracted driving laws, the success of driver-centered policies tends to rely heavily on voluntary compliance. Schlag<sup>173</sup>, Stern *et al.*,<sup>174</sup> and Goldenbeld *et al.*,<sup>175</sup> believe that successful laws require both driver *knowledge* of the law and driver *acceptance* of the law. Legislation will be most successful when it is easy for drivers to understand and to follow, and when it is not in conflict with other laws or situational prerogatives.<sup>176</sup> Education and public awareness campaigns can play a key role in changing driver behavior. These efforts can shift the social attitude and norm and create public demand for change, which allows the other interceptive measures to have the effect that they seek.

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<sup>172</sup> Mal Leary, *State Police to Crack Down on Seat Belt Use, Distracted Driving this Summer*, BANGOR DAILY NEWS (June 24, 2012), <http://bangordailynews.com/2012/06/24/news/state/state-police-to-crack-down-on-seat-belt-use-distracted-driving-this-summer/> [perma.cc/7MG9-RNK2].

<sup>173</sup> BERNHARD SCHLAG, REGELBEFOLGUG, DVR SCHRIFTENREIHE VERKEHRSSICHERHEIT 23–38 (2010), <https://www.dvr.de/fileadmin/downloads/dvr-schriftenreihe/Schriftenreihe-Verkehrssicherheit-14.pdf> [perma.cc/9BPN-ASVE].

<sup>174</sup> Jan Stern, Bernhard Schlag, Lars Rößger, Thomas Fischer & Jens Schade, *WIRKSAMKEIT UND AKZEPTANZ POLIZEILICHER VERKEHRSÜBERWACHUNG*, Frankfurt/M.: Verlag für Polizeiwissenschaft (2006).

<sup>175</sup> CHARLES GOLDENBELD, JELLE HEIDSTRA, RAINER CHRIST, TAPANI MÄKINEN & SHALOM HAKKERT, LEGAL AND ADMINISTRATIVE MEASURES TO SUPPORT POLICE ENFORCEMENT, DELIVERABLE FIVE OF THE ESCAPE (ENHANCED SAFETY COMING FROM APPROPRIATE POLICE ENFORCEMENT) PROJECT (2000), [http://virtual.vtt.fi/virtual/proj6/escape/escape\\_d5.pdf](http://virtual.vtt.fi/virtual/proj6/escape/escape_d5.pdf) [perma.cc/2NL5-PE9V].

<sup>176</sup> P.C. NOORDZIJ, *INFLUENCING ROAD USERS' BEHAVIOR* (1976), [https://www.swov.nl/sites/default/files/publicaties/rapport/publication\\_1976-1e.pdf](https://www.swov.nl/sites/default/files/publicaties/rapport/publication_1976-1e.pdf) [perma.cc/22XV-KEJT].



In the 1980s, for example, drunk driving was identified as a key cause of road deaths in the United States. The issue was brought to the attention of the media and placed on policy agendas by the advocacy group, Mothers Against Drunk Driving (MADD).<sup>177</sup> Putting faces and stories to the statistics, MADD was able to help reduce the number of road deaths from drunk driving.<sup>178</sup> In 1988, Jay A. Winsten of the Harvard University School of Public Health's Center for Health Communication joined in this effort and founded the Harvard Alcohol Project. The Harvard project imported the concept of the designated driver from Scandinavia, where Winsten had witnessed first-hand the reinforcement of this concept by a powerful social norm. Young men in the Nordic countries, he noted, would state that "my brother would beat me up" or "my friends wouldn't talk to me" if "I drove under the influence."<sup>179</sup> Partnering with Hollywood and the major television broadcast networks (ABC, NBC, and CBS), the Harvard Alcohol Project disseminated the concept of the designated driver to the public. The designated driver concept has since become a part of the American culture, and it is estimated that over 50,000 lives were saved by its use between 1988 and 1998.<sup>180</sup> Public awareness and educational campaigns were key tools helping to orchestrate the shift in attitude.

#### 1. Public awareness campaigns directed at distracted driving

Looking at the lessons learned from the campaign against drunk driving, we see that a long-term shift in social attitudes and norms can be powerful instruments of long-term change. Yet distracted driving is a more nuanced issue, and advocates for change cannot simply replicate the efforts used against drunk driving. The use of mobile devices and information technology has become deeply embedded in modern life and people are accustomed to and dependent on it being immediately accessible at every moment of the day. Drinking and driving, on the other hand, is a situation that most people face only in the event of social outings—possibly once or a few evenings a week. Further, distraction is still quite easy to hide from law enforcement, while law enforcement has been able to develop technology and

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<sup>177</sup> *Our Story*, MOTHERS AGAINST DRUNK DRIVING (MADD), <https://www.madd.org/about-us/our-story/> [perma.cc/9MUV-7ENC] (last visited May 20, 2020).

<sup>178</sup> *See generally Saving Lives, Serving People*, MOTHERS AGAINST DRUNK DRIVING (MADD), <https://www.madd.org/history> [perma.cc/RHP2-CTN8] (last visited Nov. 26, 2021) (providing examples and history of MADD's efforts to reduce drunk driving).

<sup>179</sup> Personal Communication of Nicholas Ashford and Natharat Mongkolsinh with Jay A. Winsten, Ph.D. Associate Dean for Health Communication at Harvard School of Public Health and Frank Stanton Director, Center for Health Communication (Aug. 13, 2018).

<sup>180</sup> *History of Designated Driving*, DESIGNATEDDRIVING.NET, <http://www.designateddriving.net/historyofdesignateddriving.html> [perma.cc/LN6C-TNTJ] (last visited May 20, 2020).

legal frameworks that help facilitate the identification of those who drink and drive. The aforementioned “textalyzer” technology may have the potential to revolutionize the enforcement of distracted driving laws, but its use may raise privacy concerns to a greater extent than does the use of the breathalyzer.<sup>181</sup> Further, the media landscape is more fragmented than it was when the designated driver concept was disseminated, meaning that successful public education campaigns may require coordinated messaging across various media. These differences may partially explain why efforts such as the “designated texter” campaign have not been successful, despite being promoted by Honda, the Central Florida Expressway Authority, and others.<sup>182</sup> Still, it may prove to be a successful strategy to try to link drunk driving to distracted driving in the public eye. The “Don't Drive Intoxicated—Don't Drive Intexticated” campaign, a multi-year initiative launched by the American Automobile Association (AAA) in 2019, aims to help people understand how both practices can have the same deadly consequences, and it may yet capture public attention.<sup>183</sup>

Several governmental entities, in the U.S. and internationally, have mounted public awareness campaigns in the hope of discouraging distracted driving. The U.S. Department of Transportation launched its “U Drive. U Text. U Pay.” National Distracted Driving Enforcement Campaign in 2015,<sup>184</sup> and some states have used this campaign name to spur local

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<sup>181</sup> *Textalyzer—Privacy or Protection? Cell Phone Device for Truckers and All Other Drivers*, LANDSTAR AGENT, <https://www.nonforceddispatch.com/textalyzer-privacy-protection-all-drivers/> [perma.cc/S6T6-6KE8] (reporting that Laurent Sacharoff, Professor of Law of the University of Arkansas, said the Textalyzer is a greater invasion of privacy than a breathalyzer); *The Textalyzer: Fighting Distracted Driving or Violating Privacy?*, PERENICH CAULFIELD (Mar. 8, 2018), <https://web.archive.org/web/20201031124922/https://www.usalaw.com/blogs/textalyzer-enforces-distracted-driving-laws/>; *The Textalyzer: What It Is and What It Means to You*, DESIMONE L. OFF. (Mar. 12, 2018), <https://desimonelawoffice.com/the-textalyzer-what-it-is-and-what-it-means-for-you/> [perma.cc/68CW-24SV].

<sup>182</sup> Alexandra Jardine, *Honda Suggests Teens Have a 'Designated Texter' in This Parody Rap Video*, AD AGE (Apr. 19, 2017), <http://creativity-online.com/work/honda-designated-texter/51558> [perma.cc/T5F4-C6WP]; *Designated Texter*, CENT. FLA. EXPRESSWAY AUTH., <https://www.cfxway.com/agency-information/agency-overview/community-involvement/designated-texter/> [perma.cc/68E6-VZFC] (last visited May 20, 2020).

<sup>183</sup> *Don't Drive Intexticated*, AAA CLUB ALL., <http://www.aaa.com/dontdrivedistracted/> [perma.cc/J2HK-ZJSK] (last visited May 20, 2020).

<sup>184</sup> *Distracted Driving: U Drive. U Text. U Pay.*, <https://www.trafficsafetymarketing.gov/get-materials/distracted-driving/u-drive-u-text-u-pay> [perma.cc/5MSP-AXGY] (last visited May 20, 2020); Ashley Halsey, ‘U Drive, U Text, U Pay,’ WASH. POST (Apr. 2, 2014), [https://www.washingtonpost.com/local/trafficandcommuting/u-drive-u-text-u-pay/2014/04/02/9eb1f25c-bab1-11e3-9a05-c739f29ccb08\\_story.html](https://www.washingtonpost.com/local/trafficandcommuting/u-drive-u-text-u-pay/2014/04/02/9eb1f25c-bab1-11e3-9a05-c739f29ccb08_story.html) [perma.cc/6UMH-WFMF]; *U.S. DOT and NHTSA Kick Off 5th Annual U Drive. U Text. U Pay. Campaign*, NAT'L HIGHWAY SAFETY ADMIN. (Apr. 5, 2018), <https://www.nhtsa.gov/press-releases/us-dot-and-nhtsa-kick-5th-annual-u-drive-u-text-u-pay-campaign> [perma.cc/3K6L-N89X].

enforcement efforts.<sup>185</sup> This campaign consists of mass media elements such as television commercials, radio commercials, printed ads, and billboards, supported by information packets, websites and social media presence, wristbands, ringtones, and other items designed to reinforce the message. As discussed above, the U.S. has also declared April of each year to be “National Distracted Driving Awareness Month,” a time when the government endeavors to elevate the profile of the issue. Australia’s Traffic Accident Commission has mounted a distracted driving campaign highlighted by a forty-five-second commercial—called “Blind”—that seeks to illustrate the ease with which distraction can occur and the tragic consequences that can result.<sup>186</sup> Distracted driving campaigns in Europe include those from the Road Safety Authority of Ireland, the Department of Transport in the U.K., the Sécurité routière du Gouvernement in France, and the Dirección General de Tráfico in Spain.<sup>187</sup>

A host of private organizations have also mounted public awareness campaigns. In the U.S., the nonprofit group EndDD, started by the parents of a young woman who was struck and killed by a distracted driver as she was crossing the street in a well-marked crosswalk, helps organize volunteer speakers to address schools and community groups.<sup>188</sup> The industry has also sponsored public awareness campaigns such as AT&T’s “It Can Wait” Campaign<sup>189</sup> and a six week safety campaign mounted by the Canadian Automobile Association in 2014.<sup>190</sup> AT&T has convinced other cell service

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<sup>185</sup> See, e.g., Kent Pierce, *Phase 2 of ‘U drive. U text. U pay.’ Campaign Has Police Cracking Down on Texting Drivers*, WTNH NEWS 8 (Aug. 1, 2019), <https://www.wtnh.com/news/phase-2-of-u-drive-u-text-u-pay-campaign-has-police-cracking-down-on-texting-drivers/> [perma.cc/2N96-KZJJ] (describing a distracted driving campaign in Connecticut that uses this strategy).

<sup>186</sup> For a description of the Australian campaign, see *Get Your Hand Off It*, TRANSPORT FOR NEW SOUTH WALES (2020), <https://roadsafety.transport.nsw.gov.au/campaigns/get-your-hand-off-it/index.html> [perma.cc/474V-R626] and World Health Organization, *Violence and Injury Prevention—Australia Distracted Driving Prevention Campaign BLIND*, [https://web.archive.org/web/20171109133851/http://www.who.int/violence\\_injury\\_prevention/videos/australia\\_distracted\\_driving\\_blind/en/](https://web.archive.org/web/20171109133851/http://www.who.int/violence_injury_prevention/videos/australia_distracted_driving_blind/en/) [perma.cc/L4U7-95BA] (last visited May 20, 2020).

<sup>187</sup> Eleonora Malacarne, *Mobile Phone Misuse and Distracted Driving Campaigns in Europe*, TRANSPOCO (Mar. 10, 2015), <https://www.transpoco.com/blog/2015/03/10/mobile-phone-misuse-distracted-driving-campaigns-europe/> [perma.cc/GTB3-ZKZV].

<sup>188</sup> *End Distracted Driving Campaign*, ENDDDD.ORG, <https://www.endddd.org/endddd-org-end-distracted-driving-campaign/> [perma.cc/2KZ2-643C] (last visited May 20, 2020).

<sup>189</sup> AT&T, IT CAN WAIT, [www.itcanwait.com](http://www.itcanwait.com) [perma.cc/F7ZR-GUNK] (last visited May 20, 2020); *AT&T’s It Can Wait Movement Celebrated as Year’s Best Campaign*, AT&T [https://about.att.com/newsroom/atts\\_it\\_can\\_wait\\_movement\\_celebrated\\_as\\_years\\_best\\_campaign.html](https://about.att.com/newsroom/atts_it_can_wait_movement_celebrated_as_years_best_campaign.html) [perma.cc/3GW8-8QLL] (last visited May 20, 2020).

<sup>190</sup> David Shum, *CAA Launches Six-Week Long Distracted Driving Campaign*, GLOBAL NEWS (July 29, 2014), <https://globalnews.ca/news/1479380/caa-to-launch-six-week-long-distracted-driving-campaign/> [perma.cc/UG8W-QABN].

providers, social media platforms, and cellphone manufacturers to join its campaign.<sup>191</sup> For a time, AT&T also offered DriveMode, a free downloadable application that automatically silenced messages and calls when the phone sensed movement above fifteen miles per hour, but that service has been discontinued.<sup>192</sup> A recent study identified a total of twenty-nine applications, including AT&T Drive Mode, that block functions such as texting and calling while permitting the use of other functions such as music players and GPS.<sup>193</sup> A discussion of these applications is included in Section Four below. Lastly, universities have also initiated public awareness campaigns against distracted driving; the Harvard School of Public Health announced in 2019 that it was “joining forces with a Hollywood animation studio and a New York ad firm to develop a campaign aimed at raising awareness of the need for drivers to remain focused, a problem that has proved resistant to efforts by legislatures, federal and state agencies, insurance companies, carmakers, nonprofits, and others.”<sup>194</sup>

The overall goal of these various campaigns, in the words of one advocate, is “a mass movement that delivers a shock to the political system, like the ones waged by Ralph Nader for seat belts, or by Mothers Against Drunk Driving to establish strict drunk driving laws.”<sup>195</sup> Yet the effectiveness of these campaigns is often not carefully measured. And, as Harvard’s 2019 announcement suggests, those that are measured do not necessarily show a successful outcome. For example, Western Australia used an online survey to evaluate its anti-distracted driving campaign through measures such as campaign recall, the message take-away, the perceived relevance, and the

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<sup>191</sup> Steve Dent, *Verizon, Sprint, and T-Mobile Adopt AT&T’s ‘It Can Wait’ Anti-Texting-While-Driving Campaign*, ENGADGET (May 14, 2013), <https://www.engadget.com/2013-05-14-carriers-att-it-can-wait-anti-texting-while-driving.html> [perma.cc/Y5XC-WNAN]; *Smartphone Use While Driving Grows Beyond Texting to Social Media, Web Surfing, Selfies, Video Chatting*, AT&T (May 19, 2015), [https://about.att.com/story/smartphone\\_use\\_while\\_driving\\_grows\\_beyond\\_texting.html](https://about.att.com/story/smartphone_use_while_driving_grows_beyond_texting.html) [perma.cc/L2EV-7BVD].

<sup>192</sup> *Get the AT&T DriveMode App*, AT&T, <https://www.att.com/support/article/wireless/KM1000730/> [https://perma.cc/T84C-THAK] (last visited Nov. 26, 2021); Marcia Heroux Pounds, *Breaking Your Texting and Driving Habit Can Be Hard. Here’s How to Do It* (July 10, 2019), <https://www.sun-sentinel.com/news/transportation/fl-bz-texting-driving-apps-20190710-gwba5zaf3zcyj7gv5ag3qto7uivy-story.html> [perma.cc/9SPL-785P]. Other applications available include, but are not limited to, LifeSaver, SafeDrive, CellControl, and TextLimit.

<sup>193</sup> Oscar Oviedo-Trespalacios, Mark King, Atiyeh Vaezipour & Verity Truelove, *Can Our Phones Keep Us Safe? A Content Analysis of Smartphone Applications to Prevent Mobile Phone Distracted Driving*, 60 TRANSP. RSCH. PART F 657–68 (2018).

<sup>194</sup> Powell, *supra* note 12.

<sup>195</sup> Angie Schmitt, *We Have the Tech to Stop Distracted Driving. But Do We Have the Will?* STREETS BLOG USA (Apr. 19, 2017), <https://usa.streetsblog.org/2017/04/19/we-have-the-tech-to-stop-distracted-driving-but-do-we-have-the-will/> [perma.cc/69J8-4ALD].

impact on attitude and awareness of driver distraction as an issue.<sup>196</sup> Based on these measures, Western Australia could not confirm changes in driver behavior as a result of its campaign.<sup>197</sup> Indeed, few program evaluations show a meaningful change in the level of distraction on the road, or in the number of roadway collisions caused by distracted driving.

There are some notable exceptions, however. One successful public awareness campaign that did carefully measure its key success indicators was a NHTSA-sponsored effort that linked increased police presence and enforcement with media campaigns in what were termed “high-visibility enforcement demonstration projects” in two states, California and Delaware.<sup>198</sup> This evaluative report focused on four primary indicators: the number and reach of the media and enforcement activities, an awareness survey of drivers, roadside observations of driver electronic device use, and an analysis of crash data. Overall, the study found that pairing increased enforcement measures with public education campaigns can decrease the frequency of distracted driving.<sup>199</sup> Hoping to build on this success, other states have implemented programs combining increased police enforcement with public outreach.<sup>200</sup>

## 2. Improving campaign messaging

While the public has become increasingly aware of the problem of distracted driving and its potential consequences, driver behavior has been slow to change. The 2013 Traffic Safety Culture Index compiled by the AAA Foundation for Traffic Safety found that 85% of those surveyed believe texting and e-mailing while driving is unacceptable, yet 35% reported they

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<sup>196</sup> D. Baird & R. Kay, *Raising Awareness of Driver Distraction in Western Australia*, AUSTRALIAN RD. SAFETY RES., POLICING AND ED. CONF. 2011 7–8 (2011), <http://acrs.org.au/files/arsrpe/Raising%20Awareness%20of%20Driver%20Distraction%20in%20Western%20Australia.pdf> [perma.cc/S97L-UWJ].

<sup>197</sup> *See id.* (evaluating campaign success in terms of public recall, but stopping short of evaluating effects on driving behavior or incidence of distraction related traffic accidents).

<sup>198</sup> NAT’L HIGHWAY SAFETY ADMIN., DOT-HS-812-108, EVALUATION OF THE NHTSA DISTRACTED DRIVING HIGH-VISIBILITY ENFORCEMENT DEMONSTRATION PROJECTS IN CALIFORNIA AND DELAWARE (2015) [hereinafter EVALUATION REPORT]. The cities of Hartford, Connecticut and Syracuse, New York also provide successful examples of high-visibility enforcement techniques effectively changing driver behavior. *See* NAT’L HIGHWAY SAFETY ADMIN., DOT-HS-811-867, TWO COMMUNITY DISTRACTED DRIVING PROGRAMS REDUCE HAND-HELD PHONE USE 1 (2014).

<sup>199</sup> EVALUATION REPORT, *supra* note 198 at 36-39.

<sup>200</sup> For a discussion of a Minnesota program, *see e.g.*, Tim Harlow, *Minnesota Officials Step up Outreach on New Hands-Free Law*, STAR TRIB. (June 28, 2019), <http://www.startribune.com/minnesota-officials-step-up-outreach-on-new-hands-free-law/511912102/> [perma.cc/YL9X-RS7D].

have read, and 26% reported they have typed, such a message while driving.<sup>201</sup>

Cismaru and Nimegeers suggest that this apparent disconnect may be due to the poor messaging in the recommendations provided in distracted driving campaigns.<sup>202</sup> Systematically examining anti-texting campaigns from the U.S., Canada, Australia, and the UK, they used the Extended Parallel Process Model (“EPPM”) to evaluate the recommendations made.<sup>203</sup> The EPPM establishes five factors for a persuasive message:

1. Perceived severity (how harmful is texting while driving?)
2. Perceived vulnerability (how likely an individual is to be exposed to harm caused by texting while driving?)
3. Perceived cost (how much of a sacrifice must an individual make to adopt the recommended behavior?)
4. Perceived self-efficacy (how does an individual perceive his or her ability to adopt the recommended behavior?)
5. Perceived response efficacy (how does an individual perceive the effectiveness of the recommended behavior?)<sup>204</sup>

Cismaru and Nimegeers found that only 14% of the campaigns reviewed communicated vulnerability, and only 12% communicated severity.<sup>205</sup> It thus is perhaps no surprise that many people are still overconfident about their ability to multitask while driving.<sup>206</sup> Harvard’s Jay Winsten also points out that the language of the campaigns may be hurting the attempt to create a social stigma around distracted driving.<sup>207</sup> The term “distracted driving” is less disapproving than the terms “reckless driving” or “drunk driving,” both of which clearly paint a picture of public endangerment.

Coping messages are the aspects of campaigns that communicate the perceived cost, perceived self-efficacy, and perceived response efficacy. Cismaru and Nimegeers found that while most campaigns (67%) were clear in recommending abstinence from texting while driving, few of these increased the perception of self-efficacy. One that did was the “Join the Drive” movement mounted by the State of Queensland, Australia, which stressed the following message: “Make a habit to break one. Every time you buckle up, switch your phone to silent or flight mode. You’ll be in the habit

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<sup>201</sup> 2013 Traffic Safety Culture Index, AAA FOUND. FOR TRAFFIC SAFETY 8–9 (Jan. 2014), <https://aaafoundation.org/2013-traffic-safety-culture-index/> [perma.cc/7KC2-3PCX].

<sup>202</sup> Cismaru & Nimegeers, *supra* note 12, at 126–28.

<sup>203</sup> *Id.* at 114. They also classified the campaigns by type, stage, and target population.

<sup>204</sup> *Id.* at 126.

<sup>205</sup> *Id.* at 131.

<sup>206</sup> Daisy Grewal, *Confident Multitaskers Are the Most Dangerous Behind the Wheel*, SCI. AM. (Nov. 5, 2013), <https://www.scientificamerican.com/article/confident-multi-taskers-are-the-most-dangerous-behind-the-wheel/> [perma.cc/6EEA-D6RC].

<sup>207</sup> Winsten, *supra* note 179.

in no time.”<sup>208</sup> This clearly communicates a simple way to adopt the recommended behavior. Only 4% of campaigns analyzed by Cismaru and Nimegeers were focused on reducing the perceived cost of the recommended behavior, and only 3% communicated response efficacy.<sup>209</sup> Overall, there was a clear paucity of communication of coping messages, which points to a significant opportunity for the improvement of distracted driving campaigns.

### 3. Other educational initiatives

Beyond mass media campaigns, there are other informational and educational efforts, such as driving simulators, driver education curricula, pledges, and employer policies, that have the potential to foster incremental changes in social attitudes and norms. Driving simulators can be an entertaining way to help individuals experience the ways in which distraction can impair their driving. These include physical, hands-on simulators, such as the Insurance Bureau of Canada’s D.U.M.B. (Distractions Undermining Motorist Behaviors) driving simulator,<sup>210</sup> and online simulators, such as the DRIVR-X simulator hosted by Manitoba Public Insurance, the Texting While Driving Simulator hosted by AT&T as part of the company’s It Can Wait Campaign, the Gauging Your Distraction simulator hosted by The New York Times, and Toyota’s Head’s Up simulator.<sup>211</sup>

Information on distracted driving also can be included as part of the education provided to new drivers. Governments can require training or knowledge regarding the ways to avoid distracted driving, and the consequences of failing to do so, as a prerequisite to obtaining a driver’s license. Texas, for example, requires teenage drivers to complete an online course on distracted driving before they may take the general test to obtain a

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<sup>208</sup> Cismaru & Nimegeers, *supra* note 12, at 131.

<sup>209</sup> *Id.*

<sup>210</sup> James Geuzebroek, *Driven to Distraction*, CLAIMS CANADA, AUG. 22, 2021, at 36, <https://issuu.com/glaciermedia/docs/claimsaugept2012> [perma.cc/337E-LUEF].

<sup>211</sup> *Driving Simulators*, TRAFFIC INJ. RESH. FOUND., <http://diad.tirf.ca/ehub/education-tools/driving-simulators/> [perma.cc/C3ZL-UBDL] (last visited May 20, 2020); Press Release, AT&T Mid Atlantic, *AT&T Sets Up “IT CAN WAIT” Virtual Reality Experience at University of Mary Washington* (Mar. 20, 2018), <https://midatlanticregion.att.com/at-t-sets-up-it-can-wait-virtual-reality-experience-at-university-of-mary-washington-2/> [perma.cc/26UT-W42L]; *Gauging Your Distraction*, N.Y. TIMES (Aug. 4, 2009) <https://archive.nytimes.com/www.nytimes.com/interactive/2009/07/19/technology/20090719-driving-game.html> [perma.cc/C6ZR-N434] (No longer supported); Interactive Game, Interactive Game, Toyota & Discovery Educ., *HeadsUP - the Game of Distracted Driving*, <https://www.teendrive365inschool.com/sites/default/files/headsup/index.html> (last visited Nov. 16, 2021).

driver's license.<sup>212</sup> Further, there are lesson plans and trainings available from a variety of sources, such as Toyota Teen Drive 365<sup>213</sup> and the Ford Driving Skills for Life initiative,<sup>214</sup> that may be integrated into driver education courses offered by schools and private organizations. And there are several public and private institutions that ask drivers to make a specific pledge to abstain from distracted driving. Some examples are Canada's Leave the Phone Alone pledge,<sup>215</sup> the AT&T It Can Wait pledge,<sup>216</sup> Oprah Winfrey's No Phone Zone pledge,<sup>217</sup> and the Pledge to Take Back Your Focus Today sponsored by the private group DMV.<sup>218</sup>

#### *D. The Influence of Employers and Insurers*

Finally, employers can establish policies to discourage distracted driving by their employees while driving company vehicles or when driving their own vehicles for company business. In 2012, *Fortune* magazine reported that “[o]ne out of five Fortune 500 companies that responded to a recent National Safety Council (NSC) survey has a total ban on cell phone use while driving that covers all employees.”<sup>219</sup> Ridesharing companies such as Lyft or Uber could potentially have a significant impact if they committed to a zero-tolerance policy for texting while driving, similar to the Lyft's zero-tolerance policy for driving under the influence of drugs or alcohol.<sup>220</sup>

Similarly, the insurance industry can play an important role in discouraging their customers from engaging in distracted driving. At least three business-to-business technology companies (TrueMotion, CellControl, and Cambridge Mobile Telematics) are partnering with major car insurance

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<sup>212</sup> This is the “Impact Texas Teen Drivers” program, which is part of the “Impact Texas Drivers (ITD) Program.” *Impact Texas Drivers (ITD) Program*, TEX. DEP'T PUB. SAFETY, <https://www.dps.texas.gov/section/driver-license/impact-texas-drivers-itd-program> [perma.cc/F5YG-GC3S] (last visited May 20, 2020).

<sup>213</sup> *Safe Driving Resources*, TEENDRIVE365, <https://www.teendrive365inschool.com/safe-driving-resources/educators> [perma.cc/YWN6-DVKH] (last visited May 20, 2020).

<sup>214</sup> *Advancing Driver Education*, FORD MOTOR CO. FUND, <https://www.drivingskillsforlife.com/> [perma.cc/2YF6-HAHT] (last visited May 20, 2020).

<sup>215</sup> *Leave the Phone Alone*, CANADIAN COUNCIL MOTOR TRANSP. ADMIN., [www.leaveethephonealone.ca/en](http://www.leaveethephonealone.ca/en) [perma.cc/K7FL-2QZB] (last visited May 20, 2020).

<sup>216</sup> AT&T, IT CAN WAIT, *supra* note 186.

<sup>217</sup> *Oprah's No Texting Campaign*, OPRAH.COM, <http://www.oprah.com/oprahshow/End-Distracted-Driving> [perma.cc/3XKF-ZBYZ] (last visited May 20, 2020).

<sup>218</sup> *Distracted Driving Pledge*, DMV.ORG, <https://www.dmv.org/distracted-driving-pledge.php> [perma.cc/9ER5-3JTA] (last visited May 20, 2020).

<sup>219</sup> Laura Walter, *NSC: Fortune 500 Companies Prohibit Employee Cell Phone Use While Driving*, EHS TODAY (Jan. 13, 2011), <https://www.ehstoday.com/safety/management/nsc-fortune-500-cell-phone-use-0113> [perma.cc/5PST-LNDV].

<sup>220</sup> *Zero-Tolerance Drug and Alcohol Policy*, LYFT, <https://help.lyft.com/hc/en-us/articles/115012926187> [perma.cc/DK5X-8W7G] (last visited May 20, 2020).



companies such as Progressive and Blue Cross Blue Shield to install software on phones that monitors how and if the phone is used during driving.<sup>221</sup> Insurers then offer lower rates to drivers identified by the software as not distracted. This practice appears to be becoming more and more widespread. As of 2020, “[n]ine out of the top ten private passenger” car insurers offered programs based on driving behavior<sup>222</sup> and different estimates have found that there are between eight and eleven million of these policies in place in the U.S.<sup>223</sup> With a market size valued at \$30 billion in 2020, this market is expected to reach a value of \$125 billion by 2027.<sup>224</sup> These insurance companies could go a step further and offer even lower rates to drivers who allow the installation of software that prevents the driver from using the mobile device while driving.

### III. SOCIETAL INTERVENTIONS AIMED AT INFLUENCING THE DESIGN OF DEVICES AND VEHICLES

Although mobile phone *use* is addressed both by law and by public policy in most states and countries, there is a paucity of societal guidelines addressing the similarly important topic of design and performance criteria for portable electronic devices. With the proliferation of smart phones, the increasing number of applications and software intended for use while

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<sup>221</sup> Dylan Martin, *Can a Smartphone Make You a Better Driver? These Insurers Think So*, AMERICANINNO (Aug. 8, 2017), <https://www.americaninno.com/boston/can-a-smartphone-make-you-a-better-driver-these-insurers-think-so/> [perma.cc/FPA6-265L]; *Blue365® Welcomes Two New Blue Cross and Blue Shield Companies for 2017 After Saving Members an Estimated \$56 Million in 2016*, BLUECROSS BLUESHIELD ASSOC. (May 9, 2017), <https://www.bcbs.com/news/press-releases/blue365r-welcomes-two-new-blue-cross-and-blue-shield-companies-2017-after> [perma.cc/73TC-74FM]; *HUK-COBURG Partners with Cambridge Mobile Telematics to Launch Safe Driving Insurance Program*, BUS. WIRE (Apr. 5, 2019), <https://www.businesswire.com/news/home/20190405005062/en/> [perma.cc/VW88-4F8D].

<sup>222</sup> *Background on: Pay-As-You Drive Auto Insurance (Telematics)*, INS. INFO. INST. (Mar. 12, 2020), <https://www.iii.org/article/background-on-pay-as-you-drive-auto-insurance-telematics> [perma.cc/YA82-EG2K].

<sup>223</sup> In 2018, The Insurance Information Institute and the Ptolemus Consulting Group (PCG) calculated the number of “telematics-enabled” policies in place in the U.S. The Insurance Information Institute estimated between 10 and 11 million while the PCG calculated 8 million. These numbers are equivalent to 4 and 5.5% of the total number of insured automobiles in the country. Jim Sams, *State Farm Moves Auto Telematics into 'Real Time'*, CLAIMS J., (Jun. 14, 2019) <https://www.claimsjournal.com/news/national/2019/06/14/291470.htm> [perma.cc/CY9Y-FBAA] (quoting the 10-11 million policy estimate from Lucian McMahon, senior research analyst for the Institute); *UBI Infographic 2018*, PTOLEMUS CONSULTING GRP. (Jul. 2018), <https://www.ptolemus.com/ubi-infographic-2018/> [perma.cc/T5S6-QNDY].

<sup>224</sup> See Preeti Wadhvani & Smriti Loomba, *Usage-Based Insurance Market*, GLOB. MKT. INSIGHTS (2021), <https://www.gminsights.com/industry-analysis/usage-based-insurance-ubi-market> [perma.cc/XW85-YWBX].

driving, and an emerging market for hybrid systems that combine smart phone functionality with the vehicle on-board system, there is a clear need for the development of safety guidelines that address the design of portable electronic devices and their integration with motor vehicle—in other words, for guidelines that address the nature of the technologies themselves instead of simply addressing the behaviour of those who use the technologies.

Safety guidelines governing the design of products can be promulgated by governments, by industry groups, or by other private entities, such as private “standard-setting” bodies. Unless they are made mandatory by government fiat (*i.e.*, unless they are incorporated in statute or regulation) such guidelines are voluntary. In practice, however, there often is a strong incentive for industry to comply with established guidelines even if they are wholly voluntary; such compliance not only helps ensure the safety of the product, but also acts as a layer of protection against lawsuits and engenders the trust of customers. Guidelines have been developed over the past twenty years to address distracting technologies put to use in motor vehicles.

However, while those guidelines address the design and placement of onboard (built-in) devices, they do not deal with “nomadic” devices, such as cell phones, brought into the vehicle by drivers or passengers.

#### *A. Guidelines Addressing Driver Distraction from Onboard Technologies*

Perhaps because there is a long international history of developing safety standards for motor vehicles, the initial attempts to formulate technological guidelines to address driver distraction have focused on the design of the automobiles themselves. Current guidelines focus on the design of onboard vehicle control, entertainment, and navigation systems (sometimes called original equipment manufacturer, or “OEM” systems). In general, these guidelines reflect an accumulation and codification of the knowledge and best practices that vehicle designers, engineers, and others use to evaluate the choices made during the vehicle design and production process. This includes the designs that affect the sources of visual distraction. Thus far, however, there are no comprehensive guidelines addressing the issue of *auditory-vocal* interfaces. While there is still debate concerning the extent and significance of auditory-vocal distraction, it is not a trivial issue, especially as the auditory-vocal interaction mode becomes a popular alternative to visual-manual interactions and the advancement of artificial intelligence makes auditory-vocal interaction with the vehicle even more attractive. Though auditory-vocal interactions (such as hands-free communications) are generally safer than visual-manual, they are not risk

free and remain highly distracting if poorly designed.<sup>225</sup> A study from the American Automobile Association Foundation for Traffic Safety found that the level of mental workload differs for interaction with different virtual assistants on the smart phone (Apple's Siri, Google's Google Now for Android phones, and Microsoft's Cortana).<sup>226</sup> And a study conducted three years later found the auditory-vocal interface of CarPlay and Android Auto to be substantially superior to onboard OEM infotainment systems.<sup>227</sup> This suggests that more attention should be paid to the design of voice-based systems.<sup>228</sup>

### *B. International Guidelines Addressing Visual Distraction*

The four most prominent sets of guidelines for visual distraction from onboard technologies are: the Alliance of Automobile Manufacturers' Statement of Principles, Criteria, and Verification Procedures on Driver Interactions with Advanced In-Vehicle Information and Communication Systems (Alliance Guidelines);<sup>229</sup> the Japan Automobile Manufacturers Association Guidelines for In-Vehicle Display Systems (JAMA Guidelines);<sup>230</sup> the European Commission Recommendations on Safe and Efficient In-Vehicle Information and Communication Systems (European

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<sup>225</sup> Dingus, *Estimates of Prevalence and Risk Associated with Inattention and Distraction Based upon in Situ Naturalistic Data*, *supra* note 29, at 55-56.

<sup>226</sup> David L. Strayer, Joel M. Cooper, Jonna Turrill, James R. Coleman & Rachel J. Hopman, *The Smartphone and the Driver's Cognitive Workload: A Comparison of Apple, Google, and Microsoft's Intelligent Personal Assistants*, AAA FOUND. FOR TRAFFIC SAFETY (Oct. 2015) <https://aaafoundation.org/smartphone-drivers-cognitive-workload-comparison-apple-google-microsofts-intelligent-personal-assistants/> [perma.cc/2WQS-FME6].

<sup>227</sup> David L. Strayer et al., *Visual and Cognitive Demands of Using Apple's CarPlay, Google's Android Auto and Five Different OEM Infotainment Systems*, AAA FOUND. FOR TRAFFIC SAFETY (June 2018) <https://aaafoundation.org/visual-cognitive-demands-apples-carplay-googles-android-auto-oem-infotainment-systems/> [perma.cc/DRR8-WNVG].

<sup>228</sup> The National Safety Council (NSC) and the National Transportation Safety Board (NTSB) have both expressed their support for a stronger emphasis on cognitive distraction in the guidelines in order to address auditory-vocal technology. Visual-Manual NHTSA Guidelines for In-Vehicle Electronic Devices, 78 Fed. Reg. 24, 836-37 (Apr. 26, 2013) <https://www.govinfo.gov/content/pkg/FR-2013-04-26/pdf/2013-09883.pdf> [perma.cc/M8BL-AHYU] [hereinafter *NHTSA Visual-Manual Guidelines*].

<sup>229</sup> Driver Focus-Telematics Working Group, *Statement of Principles, Criteria and Verification Procedures on Driver-Interactions with Advanced In-Vehicle Information and Communication Systems*, ALL. AUTO. MFRS. (June 26, 2006), <https://autoalliance.org/wp-content/uploads/2018/08/Alliance-DF-T-Guidelines-Inc-2006-Updates.pdf> [perma.cc/JX67-7R66].

<sup>230</sup> JAPAN AUTO. MFRS. ASSOC., GUIDELINE FOR IN-VEHICLE DISPLAY SYSTEMS, VERSION 3.0, (Aug. 2004), [http://www.jama-english.jp/release/release/2005/In-vehicle\\_Display\\_GuidelineVer3.pdf](http://www.jama-english.jp/release/release/2005/In-vehicle_Display_GuidelineVer3.pdf) [perma.cc/TEW9-GREM].

Guidelines);<sup>231</sup> and the National Highway Traffic Safety Administration Driver Distraction Guidelines for In-Vehicle Electronic Devices (NHTSA Phase I Guidelines).<sup>232</sup> The first version of the Alliance guidelines, published in 2000, was a comprehensive set of recommendations on how vehicles could be designed to reduce visual-manual distraction, which was defined as distraction that results from drivers taking their eyes off the road and/or hands off the wheel to engage in a task not essential to the primary task of driving. These guidelines, which were most recently revised in 2006, are detailed, are based on human factors principles and research, and include testing methods and acceptance criteria for determining the safety of various tasks. The European guidelines, most recently updated in 2008, have principles that resemble the Alliance guidelines. The JAMA Guidelines are the shortest and least detailed of the four, but they are also the most restrictive, both in terms of scope of coverage and recommended limitations on the size and content of visual screens. The 2013 NHTSA Phase I Guidelines are the most recent and the most comprehensive. They build on the foundation of the Alliance Guidelines and reflect the JAMA and European Guidelines when deemed appropriate.<sup>233</sup>

The NHTSA Phase I Guidelines are focused on recommending technological performance criteria such that “single average [driver] glances away from the forward roadway are two seconds or less and where the sum of the durations of all individual glances away from the forward roadway are twelve seconds or less while performing a testable task, such as selecting a song from a satellite radio station.”<sup>234</sup> It is anticipated that this will be achieved, in part, by making onboard systems easier to operate. The NHTSA Guidelines also recommend a “per se lock out” of certain functionalities, including the ability of the driver to send or receive texts:

The NHTSA Guidelines recommend that in-vehicle devices be designed so that they cannot be used by the driver to perform these inherently distracting activities while driving.

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<sup>231</sup> *Commission Recommendation of 26 May 2008 on Safe and Efficient In-Vehicle Information and Communication Systems; Update of the European Statement of Principles on Human-Machine Interface*, 2008/653/EC (May 26, 2008), <https://eur-lex.europa.eu/eli/reco/2008/653/oj> [perma.cc/PP2W-P539].

<sup>232</sup> *NHTSA Visual-Manual Guidelines*, *supra* note 228, at 24,818.

<sup>233</sup> *See generally* Notice of Proposed Federal Guidelines, Visual-Manual NHTSA Driver Distraction Guidelines for In-Vehicle Electronic Devices, 77 Fed. Reg. 11,200 (Feb. 24, 2012), <https://www.federalregister.gov/d/2012-9953/p-1> [perma.cc/59QH-Q9SD] (summarizing the National Highway Traffic Safety Administration’s extension of the public comment period).

<sup>234</sup> Notice of Proposed NHTSA Guidelines for Portable and Aftermarket Devices in the Visual-Manual NHTSA Driver Distraction Guidelines for Portable and Aftermarket Devices, 81 Fed. Reg. 87656 (Dec. 5, 2016), <https://www.federalregister.gov/d/2016-29051/p-82> [perma.cc/9GYN-CFJN] [hereinafter *NHTSA Visual Manual NPRM*].

The list of activities considered to inherently interfere with a driver's ability to safely operate the vehicle include:

- Displaying video not related to driving;
- displaying certain graphical or photographic images;
- displaying automatically scrolling text;
- manual text entry for the purpose of text-based messaging, other communication, or internet browsing; and
- displaying text for reading from books, periodical publications, Web page content, social media content, text-based advertising and marketing, or text-based messages.<sup>235</sup>

If these recommendations were extended to cell phones and other nomadic communication devices, and if they were adopted by the manufacturers of these devices, a significant drop in driver distraction might reasonably be anticipated. Recommendations for nomadic devices are incorporated into a set of Phase II Guidelines proposed by NHTSA in 2016.<sup>236</sup> These recommendations were to apply to “the visual-manual interfaces of portable devices (e.g., smartphones, tablets, and navigation devices) and aftermarket devices (i.e., devices installed in the vehicle after manufacture)” and were to extend the Phase I recommendations to these devices “[t]o the extent practicable.”<sup>237</sup> Thus, the Phase II Guidelines propose a “per se lock out” of texting and related functionalities similar to those recommended for onboard technologies in the Phase I Guidelines. However, review of the proposed Phase II Guidelines was—along with a host of other pending agency actions—suspended when President Trump took office in 2017,<sup>238</sup> and their immediate future is, at best, uncertain. There were also a set of Phase III NHTSA Guidelines in the works that would cover auditory-vocal distraction, but presumably they will not be forthcoming anytime soon.<sup>239</sup>

### *C. State Regulations Governing Onboard Vehicular Video Screens in the United States*

Onboard visual display units—which include televisions, computer screens, and other video screens—are addressed at the federal level in the NHTSA Phase I Guidelines. Although the NHTSA Guidelines have

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<sup>235</sup> NHTSA *Visual-Manual Guidelines*, *supra* note 228, at 24,817.

<sup>236</sup> NHTSA *Visual Manual NPRM*, *supra* note 234, at 87,656.

<sup>237</sup> *Id.* at 87,658.

<sup>238</sup> Reince Priebus, *Memorandum for the Heads of Executive Departments and Agencies*, (Jan. 20, 2017), <https://www.whitehouse.gov/presidential-actions/memorandum-heads-executive-departments-agencies/> [perma.cc/V5VV-TBUN].

<sup>239</sup> NHTSA *Visual-Manual Guidelines*, *supra* note 228 at 24,820.

influenced automakers' design of built-in video systems, they are not legally binding. Nonetheless, where relevant, the NHTSA guidelines may well be admissible in state court as evidence of negligence or products liability. Moreover, a number of states have laws governing the placement of visual screens mounted to, or built into, the vehicle.

As in-car video screens were growing in popularity in the early part of this century, regulation of their use based on the content being screened (e.g., a movie vs. a map) was suggested,<sup>240</sup> and a few states took this approach.<sup>241</sup> A much more common approach has been content-neutral laws aimed at specifying the permissible location and operation of in-vehicle screens, and these are more directly relevant to the issue of distracted driving. As set forth in Table 4-1, thirty-six states have laws addressing the placement and operation of visual-display units such as televisions and video screens, while fourteen states and the District of Columbia do not. All thirty-six laws regulating the placement of screens prohibit the use of screens visible to the driver, and six of these also prohibit screens located forward of the back of the driver's seat.<sup>242</sup>

A majority of the state laws (twenty-eight) prohibit the use of the visual-display unit only while the vehicle is in motion.<sup>243</sup> Typically, however, there are exemptions that permit some features to remain operational even if the vehicle is moving. Depending on the state, features exempted can include navigation aids, instrumentation and controls that are a part of the vehicle, closed-circuit video monitors, displays that enhance the operator's view, authorized emergency or law enforcement uses, autonomous technology, and certain other safety features. This provides an opportunity for auto manufacturers to continue to provide visual-display units so long as they also deploy a lockout mechanism that disables all features while the vehicle is in motion except for those listed in the exemptions. To prevent abuse of this system, state legislatures must be thoughtful in the exemptions they allow and should update them based on scientific evidence on which tasks or devices are considered risky.

For example, exemptions for navigational purposes or "intelligent" highway and vehicle system equipment exist in twenty-five of the state

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<sup>240</sup> Kristina Wilson, *No, We're Not There Yet: A Proposed Legislative Approach to Video Entertainment Screens in Cars*, 100 NW. U. L. REV. 999, 1024, 1027 (2006).

<sup>241</sup> See TENN. CODE ANN. § 55-8-187 (West 2016) (regulating "display of obscene and patently offensive movies, bumper stickers, window signs or other markings"); LA. STAT. ANN. § 14:106.3 (2016) (prohibiting screens showing sexually explicit material); VA. CODE ANN. § 46.2-1077.01 (West 2016) (stating that obscene video material cannot be displayed).

<sup>242</sup> See *infra* Table 4-1 (listing Alabama, California, Illinois, Massachusetts, North Carolina, and South Carolina as states prohibiting screens located forward of the back of the driver's seat).

<sup>243</sup> See *infra* Table 4-1.

visual-display unit laws.<sup>244</sup> Considering the results of a 2014 AAA report on in-vehicle systems, which found that data entry to navigation devices is the most distractive task in their use,<sup>245</sup> legislatures may want to consider amending the law to exempt only the *viewing* of the navigational device while the vehicle is in motion, which may help ensure that the entry of data is done while the vehicle is at rest. The findings of the AAA report strongly suggest that laws should not exempt the distractive task of inputting addresses into navigational devices.

With more recent advancements in telecommunications and user connectivity, the watching and recording of videos and live-streaming media can now be done from a wider variety of devices. While most of the state visual-display laws were initially enacted to address the installation of televisions in cars, many were later updated to address new onboard visual technologies, such as in-car video screens or tablets.<sup>246</sup>

Even without specific language changes, it would appear that the built-in touchscreens common to the onboard systems of modern vehicle models may well be illegal under the broad language of many of the current visual-display laws. However, there appears to be no significant interest in enforcing these laws. Perhaps a more widespread effort to incorporate statutory language that is more specifically directed toward the current onboard visual technologies, is not excessively restrictive, is focused on known harmful interactions with the system, and bans unnecessary tasks would lead to increased enforcement of these laws. Basing the laws on established science regarding visual distraction could make these laws more comprehensive and may stimulate the development and use of safer visual technology.

#### *D. The Promise of an Integrated Approach to Technological Guidelines*

The International Organization of Motor Vehicle Manufacturers (OICA) has criticized the focus on built-in devices in the current international guidelines, arguing that the “overly restrictive NHTSA guidelines” for onboard vehicle systems will encourage drivers to use nomadic devices

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<sup>244</sup> See *infra* Table 4-1.

<sup>245</sup> David L. Strayer, Jonna Turrill, James R. Coleman, Emily V. Ortiz & Joel M. Cooper, *Measuring Cognitive Distraction in the Automobile II: Assessing In-Vehicle Voice-Based Interactive Technologies*, AAA FOUND. FOR TRAFFIC SAFETY (Oct. 2014), <https://aaafoundation.org/measuring-cognitive-distraction-automobile-ii-assessing-vehicle-voice-based-interactive-technologies/> [perma.cc/P2WL-VGXJ].

<sup>246</sup> In Pennsylvania, for example, the designation “television-type receiving equipment forward of the back of the driver’s seat or otherwise” was replaced with “an image display device where a broadcast television image, a live stream video image from the Internet, satellite or any other source or a prerecorded video image is visible to the driver while the vehicle is in motion.” H.B. 1278, 2015-2016 Gen. Assembly, Reg. Sess. (Pa. 2015).

instead.<sup>247</sup> In general, the automobile industry has argued for stiffer controls on nomadic devices, based on the assumption that onboard technologies are safer and more manageable.<sup>248</sup> It is true that mobile devices have issues that make them distinct from in-vehicle technology. For example, the mobile technologies are meant to be used in a variety of contexts, and can be placed, positioned, and mounted in a larger variety of ways. Moreover, the user interface can be significantly different from in-vehicle technology because of its different operating system and physical characteristics, and the aftermarket/portable device industry is highly complex, with multiple actors. Nonetheless, there are certainly risks associated with onboard technologies as well.<sup>249</sup> In a very real sense, the differentiation between guidelines for nomadic devices and guidelines for built-in devices is an artificial one, because the level of driver distraction is measured by how complex and involved a task is, rather than by the source of the technology.<sup>250</sup> Especially with the emergence of hybrid systems that integrate onboard technology with mobile devices, it is interesting to consider whether a comprehensive guideline covering both types of technology would be preferable. The promulgation of such a comprehensive guideline may encourage greater cooperation among researchers, regulators, and the myriad relevant industries—automobile, telecommunications, insurance, consumer electronics, and software developers—to establish best practices for safer technologies.

Steps are being taken in this direction. OICA has advocated strongly for the development of improved methods to automatically pair or tether hand-held, portable devices to the vehicle.<sup>251</sup> A joint effort by the automobile

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<sup>247</sup> RECOMMENDED OICA WORLDWIDE DISTRACTION GUIDELINE POLICY POSITION, ORGANISATION INTERNATIONALE DES CONSTRUCTEURS D'AUTOMOBILES (Mar. 2015), <http://www.oica.net/wp-content/uploads/OICA-Position-Paper-Driver-Distraction-Final-2015-03-03.pdf> [perma.cc/GWN5-A95P].

<sup>248</sup> *See id.* (arguing that in-vehicle integrated systems and interfaces can provide much of the telematics and information capabilities desired by drivers).

<sup>249</sup> *See* Strayer et al., *Visual and Cognitive Demands of Using Apple's CarPlay, Google's Android Auto and Five Different OEM Infotainment Systems*, *supra* note 227 (arguing that onboard technologies require engaging in a highly demanding visual task).

<sup>250</sup> *See* Paul Green, *Driver Interface Safety and Usability Standards: An Overview*, in DRIVER DISTRACTION 445 (Michael Regan, John Lee, & Kristie Young eds., 2008); *see* PAUL GREEN, UNIV. MICH. TRANSP. RSCH. INST., DRIVER INTERFACE/HMI STANDARDS TO MINIMIZE DRIVER DISTRACTION/OVERLOAD (2008), <http://umich.edu/~driving/publications/Green2008Convergence.pdf> [perma.cc/7HMB-BRUL] (last visited May 22, 2020) (arguing that systems to support driving are increasingly complex and while intended to be beneficial, distract drivers from the primary task of driving).

<sup>251</sup> RECOMMENDED OICA WORLDWIDE DISTRACTION GUIDELINE POLICY POSITION, *see supra* note 247 (arguing for handheld/portable devices to be equipped with an automatic car mode).



industry, wireless communication industry, and mobile phone industry to develop guidelines for the integration of their products and services in the vehicle would represent a significant step towards improved safety and convenience. The Consumer Technology Association (CTA) began such an effort in 2013<sup>252</sup> but abandoned it a year later due to liability concerns.<sup>253</sup>

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<sup>252</sup> The initiative included more than 2,000 firms and its main objective was to set guidelines to address the use of electronic devices by vehicle drivers. *See* U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., NHTSA-2013-0137, VISUAL-MANUAL NHTSA DRIVER DISTRACTION GUIDELINES FOR PORTABLE AND AFTERMARKET DEVICES 40 (2016), [https://www.nhtsa.gov/staticfiles/rulemaking/pdf/Distraction\\_Phase\\_2\\_FR\\_Notice\\_11-21-16\\_final.pdf](https://www.nhtsa.gov/staticfiles/rulemaking/pdf/Distraction_Phase_2_FR_Notice_11-21-16_final.pdf) [perma.cc/M8HT-UHHZ] (stating that the CTA “initiated a Working Group focused on addressing portable and aftermarket electronic devices used by drivers in vehicles”).

<sup>253</sup> *See id.* at 41 (stating that “in mid-2014 the Working Group abandoned its work to develop industry-based guidelines due to liability concerns”). The initiative changed its main objective to develop “a technical report to document the products and services offered by the consumer electronics (CE) industry that help make the driving experience safer.” *See also* CEA *Cataloguing Driver Safety Products and Services*, BUS. WIRE (July 29, 2014), <https://www.businesswire.com/news/home/20140729005958/en/CEA-Cataloguing-Driver-Safety-Products-Services> [perma.cc/6VS5-TR2M] (discussing the release of the technical report).

**TABLE 4-1 STATE LAWS RESTRICTING THE USE OF VISUAL-DISPLAY UNITS**

State	"Action" Prohibited					Technology				Location				Exemption							
	Installation/Equipping	Use (* = viewing)	Operating (* = on highways)	Owning	Driving (* = permit driving on highway) (** = cause to be driven)	Image/Video-display devices (* = or other devices)	TV (* = or similar)	Video (* = or similar)	Computer	Television Broadcast or Video Signal	Screen visible to driver	Forward of the back of the driver seat	Turn on & Displaying	While operating or in motion	Navigation	Part of vehicle's instrumentation & Control	Closed-circuit video monitor	Enhance operator's view	Authorize emergency or law enforcement purposes	Autonomous technology (* = conventional driver) (** = platooning systems)	Safety purposes
Ala.	X						x*		X	X	X		x								
Alaska	X			X		x*	X	X	X		X		x	x			x	x			X
Ariz.		x*	X			X			X	X		x	x	x	x		x	x			X
Ark.																					
Cal.				X		x*	X	X	X	X	X		x	x			x	x			
Colo.				X				X		X			x								
Conn.	X	X					x*			X		x	x	x	x	x	x	x			
Del.																					
D.C.																					
Fla.			x*					X	X	X		x	x	x				x	x**		X
Ga.																					
Haw.																					
Idaho																					
Ill.			X			x*	X	X	X	X	x	x	x	x			x	x			
Ind.			x*	X			X			X											
Iowa																					
Kansas																					
Ky.																					
La.	X			X		x*	X	X	X	X		x	x	x			x	x			

Me.		X			X	X		X	x	x	x	x	x	x	x		
Md.			x*		X	X		X	x		x				x		X
Mass.	X		X		x*		X	X	x		x					x	
Mich.		x*			x*			X	x	x	x	x			x	x	
Minn.	X	X			X			X	x	x		x	x		x		
Miss.																	
Mo.																	
Mont.																	
Neb.		x*			X			X			x						
Nev.			X		X	X		X	x	x	x	x				x	X
N. H.			X	X			X	X	x	x	x	x	x		x	x	
N.J.		x*			X			X			x						
N.M.		X				X		X						x		x	
N.Y.		x*			X			X						x			
N.C.			X		X	X	X	X	x	x	x	x				x	x
N.D.																	
Ohio																	
Okla.		x*			X			X			x	x				x	X
Or.			X	x*	X		X	X			x	x				X	
Pa.		x*			X	X	X	X	X		x	x	x			x	x
R.I.				x**		x*		X	X			x	x				X
S.C.	X		X		X		X	X	x		x	x				x	x
S.D.			X			x*		X	X		x						
Tenn.	X	X			X	X	X	X			x	x				x	x
Tex.	X					X	x*		X			x	x				x
Utah		x*					X		X			x					x
Vt.		x*			x*				X								
Va.	X	x*				X			X			x	x			x	x
Wash.		x*	X			x*		X	X			x				x	x
W. Va.		x*				X	X	X	X			x	x				x
Wis.			X		x*							x	x	x			x
Wyo.		x*				x*			X				x				x

*E. Technologies Aimed at Increasing the Onboard Safety of Cell Phones and Other Mobile Devices*

With or without formal guidelines or standards, the potential for technological solutions to driver distraction associated with mobile devices is substantial. Just as new technology has helped create an environment of risk from distraction, technological developments can be used to help limit distraction as well. In considering how to change technology to affect the in-vehicle environment for drivers, the functionality and freedom of consumers is likely to be balanced against the risks being mitigated. As noted by NHTSA in its proposed Phase II Guidelines, “an important way to help mitigate the real-world risk posed by driver distraction from portable devices is for these devices to have limited functionality and simplified interfaces when they are used by drivers while driving.”<sup>254</sup>

Accordingly, as with onboard systems, one broad category of technologies that are thought to help limit distraction are those that make mobile devices easier to use. Market forces in consumer electronics and the automotive industry tend to favor making it easier for drivers to use devices, but seek to lessen distraction through improved design. A recent trend in automobile design has been to provide onboard systems which integrate with mobile phone operating systems. While this facilitates driver interaction with their phones, the hope is that those interactions are less detrimental due to well-designed onboard systems. However, this approach ultimately relies on the questionable notion that distraction actually diminishes with ease of use. However, it is also logical to assume that increased ease of use can lead to increased overall use. Considering that distraction has continued to rise over the past ten years, and that owners of iPhones with larger screens are more distracted than those with smaller screens, increased ease of use has not been demonstrated to actually mitigate the risk of distracted driving.<sup>255</sup>

A second class of new technologies aims to limit distraction by making it *harder*, not easier, to use electronics while driving. One technology works by “locking out” users who are perceived to be attempting to use distracting electronics while driving. As in the NHTSA Guidelines, the term “lockout” means that certain features of the device are disabled, thus preventing the driver from using them when the vehicle is moving. Another technology tracks the eye movement of drivers, and alerts them if it detects distraction. This could be useful for detecting a broad range of distracting behavior, including cell phone use, and thus has implications both for

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<sup>254</sup> Proposed NHTSA Guidelines for Portable and Aftermarket Devices, *supra* note 234, at 87658.

<sup>255</sup> See Oviedo-Trespalacios et al., *supra* note 193, at 658 (explaining how there is little evidence of voluntarily initiated smartphone applications preventing mobile related road crashes).

enforcement and for individual privacy. For example, Volvo announced in 2019 that it would install “eye-tracking” cameras in all of its 2020 vehicles. If drivers look away for long periods of time or do not keep their hands on the wheel, then Volvo’s on-call assistance team calls the vehicle. If there is no answer, the car uses an auto-pilot mode to slow down and stop the car on the side of the road.<sup>256</sup> While it remains to be seen whether the intervention by the auto pilot actually improves highway safety—and while this type of tracking raises privacy concerns—the capability to detect driver distraction may prove useful in a broader range of contexts, and may save lives. But the technology that is ready for immediate implementation is the lockout.

### 1. Mobile device lockout

Phone manufacturers can use software to “lock out” users who may be driving. These emerging technologies are improving the accuracy of driving-situation detection, allowing for non-drivers to be unaffected. Current applications seeking to reduce distracted driving aim to restrict certain distracting behaviors (such as texting and taking phone calls)<sup>257</sup> while allowing more reasonable and necessary uses (such as making emergency calls or viewing a map mounted on the vehicle’s console).<sup>258</sup> The key to the long-term success of these technologies is likely to be the accuracy of the phone’s perception that its user is driving a vehicle. The most basic indication that a vehicle is being driven is speed. Reliable sensors already installed in most smart phones can detect when a user is moving at driving speed. Using this method alone will produce very few false negatives, but many false positives—automobile passengers and persons using public transit may also be treated like drivers and locked out (although it may not be difficult to design software that can distinguish between public transit and an automobile).

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<sup>256</sup> Andrew J. Hawkins, *Volvo Will Use In-car Cameras to Combat Drunk and Distracted Driving*, THE VERGE (Mar. 20, 2019), <https://www.theverge.com/2019/3/20/18274235/volvo-driver-monitoring-camera-drunk-distracted-driving> [perma.cc/4GT4-53UL].

<sup>257</sup> Oviedo-Trespalacios et al., *supra* note 193, found that a number of these applications continue to allow the use of texting functions such as Facebook Messenger, Viber, WhatsApp, or WeChat. With an increasing use of different cell phone functions, distraction prevention applications would ideally extend their capacity to block increasingly popular applications (such as Snapchat, Facetime, Instagram, and TikTok) that can lead to distracted driving.

<sup>258</sup> See Vinz Enjel C. Punay, Hillary S. Briones, John Carlo L. De Leon & Josephine E. Petralba, *UnDivided: An Android Application for Anti-distracted Driving*, in 2017 INT’L CONF. ON ORANGE TECHS. (ICOT) 111, 113 (2017), <http://ieeexplore.ieee.org/document/8336101/> [perma.cc/22UU-YES5] (last visited May 27, 2020); Oviedo-Trespalacios et al., *supra* note 193 (discussing how an Android anti-distracted driving app makes exceptions for emergency calls and map viewing).

Newer technology can more accurately identify when a potential user of the device is driving. One approach disables phone features only if the phone is moving at high speed and a secondary test is met. Apple filed the patent for this concept in 2008 and expanded its claims to include watch-based lockouts in 2014,<sup>259</sup> although a working design based on this patent has not yet been made available by any major mobile device manufacturer. Another detection methodology involves analysis of front and back camera data for driver-identifying objects such as steering wheels and left side mirrors. While this approach has raised concerns with privacy advocates,<sup>260</sup> it may be possible for phones to interpret data without sending it away to be analyzed by a remote computer.<sup>261</sup> An approach which is less problematic from a privacy perspective is the use of gyroscope sensors that can detect the angle at which a phone is held. This approach has proven to be extremely reliable: tests by Gregory Johnson and Rajesh Rajamani at the University of Minnesota detected which seat in a vehicle a phone was being used with 100% accuracy on forty minutes of driving time.<sup>262</sup>

The lockout software currently being installed in today's cell phone models lags behind these more sophisticated technologies. Yet many of these applications, if used, would be expected to reduce driver distraction.<sup>263</sup> For instance, Apple's "Do Not Disturb While Driving" feature will mute incoming calls and other notifications, and prevent the reading of texts, without preventing the use of Apple's Siri voice assistant or the making and receiving of hands-free calls via Bluetooth."<sup>264</sup> The CellMUTE app and

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<sup>259</sup> U.S. Patent No. 8,706,143 B1 (filed Dec. 12, 2008) (issued Apr. 22, 2014).

<sup>260</sup> See Alberto Fernández, Rubén Usamentiaga, Juan Luis Carús & Rubén Casado, *Driver Distraction Using Visual-Based Sensors and Algorithms*, 16 SENSORS 1805 § 10 (2016), (explaining how current literature lacks publicly available naturalistic driving data due to individual privacy concerns).

<sup>261</sup> For a brief discussion about the use of de-identification approaches to address privacy concerns, see *id.* at 27 (explaining how the "de-identification process works). Privacy concerns are raised whenever user data are collected and stored in the cloud for either research, operational, or commercial purposes. The user data are sent away to a server where high performance computers have the capacity to perform complex calculations as well as to identify patterns and trends at high speeds or in real time. This is also based on the centralized machine learning training model. A few of the many companies providing this computing service are Azure, Amazon AWS, Google Cloud, Oracle Cloud, and IBM Cloud. See Bill Ellis & Mark Polimus, *High Performance Computing in the Age of AI*, EQUINIX (Feb. 26, 2020), <https://blog.equinix.com/blog/2020/02/26/high-performance-computing-in-the-age-of-ai/> [perma.cc/22UU-YES5] (explaining how the High Power Computing (HPC) systems work to provide these computing services).

<sup>262</sup> Gregory Johnson & Rajesh Rajamani, *Smartphone Localization Inside a Moving Car for Prevention of Distracted Driving*, 58 VEHICLE SYSTEM DYNAMICS 290, 305 (2020).

<sup>263</sup> Oviedo-Trespalacios et al., *supra* note 193, at 666.

<sup>264</sup> Insurance Institute for Highway Safety & Highway Loss Data Institute, *Status Report Distracted Driving*, 54 INS. INST. FOR HIGHWAY SAFETY 1, Jan. 24, 2019, at 5, <https://www.iihs.org/api/datastoredocument/status-report/pdf/54/1> [perma.cc/874G-AXS7].

AT&T's now-discontinued DriveMode app prevent the driver from interacting with the cellphone by routing incoming calls through a hands-free device.<sup>265</sup> DriveAlertNow, a system which involves an in-vehicle cell phone linked hardware device, is designed to help parents regulate their teen's driving, blocks all cell phone use except 911 calls and calls to two designated emergency numbers.<sup>266</sup> Among distraction prevention applications generally, the most common feature is the automated response to incoming text messages.<sup>267</sup> From a safety perspective, however, these technologies all share a significant Achilles heel: their use is voluntary. And because each poses inconveniences to those who wish to telecommunicate while driving, drivers with a strong affinity for their cell phone may not be inclined to put these blocking technologies to use (or may be inclined to override them when they are in use).<sup>268</sup>

Apple's Do Not Disturb While Driving software is an "opt-in" feature that has been included in iPhones since 2017, when the iOS 11 was released, and its multi-step implementation protocol has proven challenging for some users.<sup>269</sup> It is estimated that only 20% of owners of iPhone 6 or newer versions

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<sup>265</sup> See Oviedo-Trespalacios et al., *supra* note 193, at 664.

<sup>266</sup> Oviedo-Trespalacios et al., *supra* note 193, at 664; Todd Davis, APPADVICE, <https://appadvice.com/app/drive-alert-now/1111269013> [perma.cc/L7ZW-F5AA] (last visited July 18, 2020). Cellcontrol offers another example of an application requiring the use of a hardware device. See NOLA.com, *Driving App Designed to Prevent Distracted Driving*, YOUTUBE (June 6, 2016), <https://www.youtube.com/watch?v=SjAQE6LeEFw> (explaining how Cellcontrol utilizes an app to stop you from using your smartphone while you drive).

<sup>267</sup> Oviedo-Trespalacios et al., *supra* note 193, at 661.

<sup>268</sup> *Id.*, at 661-62. See also Kit Delgado et al. *Attitudes on Technological, Social, and Behavioral Economic Strategies to Reduce Cellphone Use Among Teens While Driving*, 19 TRAFFIC INJ. PREVENTION 569-576 (2018) (presenting survey evidence about teens' hesitations to use blocking technologies); Adriana Bianchi & James G. Phillips, *Psychological Predictors of Problem Mobile Phone Use*, 8 CYBERPSYCHOLOGY & BEHAVIOR 39, 39 (2005) (describing mobile phone use as an uncontrollable addiction); M., G. Ponte, M.R.J. Baldock & J.P. Thompson, *Examination of the Effectiveness and Acceptability of Mobile Phone Blocking Technology Among Drivers of Corporate Fleet Vehicles*, PROC. 2016 AUSTRALASIAN RD. SAFETY CONF., CANBERRA, AUSTRALIA, 18 (2016) (suggesting that better product design would improve users' willingness to use blocking technologies).

<sup>269</sup> When the cell phone senses, for the first time, that the user might be driving, it prompts two options: "turn on while driving" or "not now." If the user taps "not now" or the cell phone does not prompt the option to enable this function, the function has to be enabled by making changes in the settings. In the settings, the user can also change the different methods the phone uses to activate the application: automatically (default option), when the phone is connected to the car's Bluetooth, manually, or activated with Carplay. This multi-step implementation protocol may well seem cumbersome to many users. See Oviedo-Trespalacios et al., *supra* note 193; Insurance Institute for Highway Safety & Highway Loss Data Institute, *supra* note 264, at 5; *Use the Driving Focus on Your iPhone to Concentrate on the Road*, APPLE, <https://support.apple.com/en-us/HT208090> [perma.cc/729T-UA5B] (last visited June 17, 2020).

ever turn on the Do Not Disturb While Driving feature.<sup>270</sup> Moreover, those who do activate the feature can easily turn it off by indicating that they are not driving (even if they are).<sup>271</sup>

Samsung, another major cell phone manufacturer, offers a built-in blocking feature that is easy to disengage. This sensor-based application, In-Traffic Reply, detects when the user is riding a car or a bike, engages a blocking feature, and sends a notification to the user.<sup>272</sup> In order to permit non-drivers to retain use of their phones, the software allows users to turn it off by indicating that they are not driving. However, this “opt-out” mechanism neither requires nor provides any verification that the user is not driving. As with the Apple software, this greatly diminishes the usefulness of this feature, since the users who are most addicted to their devices are most likely to turn it off while driving.

Indeed, one wonders whether either of these features is any real improvement over the phone’s on/off mechanism. Drivers who wish to avoid cell phone distraction can always simply turn off the phone when they get behind the wheel. But it is not these drivers who are the issue. If we are to meaningfully reduce the public safety risk from cell phone distraction, we need technologies that prevent drivers from using their phones even if they wish to take that risk. Cell phone manufacturers’ refusal to equip their phones with such technology, and to instead stick with a feature that leaves the choice to the driver, might lead a skeptic to believe that the companies are more interested in placing legal liability for accidents on the driver than in preventing those accidents. Although the manufacturers have pointed to the inconvenience of blocking technology as a rationale for not implementing it further, the real issue may be that these companies are hesitant to adopt a “first-mover disadvantage” relative to their competitors.<sup>273</sup>

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<sup>270</sup> Insurance Institute for Highway Safety & Highway Loss Data Institute, *supra* note 264, at 5. Further, while 19% of users of Androids or older iPhones are reported to have acquired some form of cell phone blocker, only half of these users make regular use of these blockers. Insurance Institute for Highway Safety & Highway Loss Data Institute, *supra* note 264, at 6.  
<sup>271</sup> *Status Report Newsletter* Vol. 54, No. 1, INSURANCE INST. HIGHWAY SAFETY & HIGHWAY LOSS DATA INST., (Jan. 24, 2019) <https://www.iihs.org/api/datastoredocument/status-report/pdf/54/1> [perma.cc/874G-AXS7].

<sup>272</sup> Abhijit Ahaskar, *Your Smartphone While You Drive*, LIVEMINT (Oct. 10, 2017), <https://www.livemint.com/Technology/Z0mN9fKJtQkJM1bf7OKqQL/Your-smartphone-while-you-drive.html> [perma.cc/N36P-LD2H]. The application is offered in Dutch. See *In-Traffic Reply*, GOOGLEPLAY (Mar. 7, 2019), [https://play.google.com/store/apps/details?id=com.samsung.intrafficeply&hl=en\\_US](https://play.google.com/store/apps/details?id=com.samsung.intrafficeply&hl=en_US) [perma.cc/658Q-3QU9]. For more information about similar applications offered in application stores in English, see Oviedo-Trespalacios et al., *supra* note 193, at 666, Table A1 (listing all the smartphone distraction driving mitigation applications).

<sup>273</sup> Richtel, *supra* note 4.



There are also examples of applications incorporating “safe mobile phone-driving integration principles.”<sup>274</sup> For instance, the DriveSafe.ly app for Blackberry and Android phones changes the interaction between the driver and the cell phone by allowing the driver to respond to text messages with voice commands, whereas A&T DriveMode app simplified smartphone functionality by enabling drivers to perform a greater number of tasks.<sup>275</sup> However, concerns remain regarding the reliability of the technology and thus the wisdom of moving to widespread deployment.<sup>276</sup> Additionally, there is a paucity of evidence demonstrating that this type of technology leads to lower car crash risk, and there is no clear understanding of how drivers using these applications may respond under particular traffic conditions.<sup>277</sup>

Phone manufacturers and car companies also could collaborate to improve the accuracy and reliability of driver lockout mechanisms and to limit the driver’s ability to override them. Under this interactive scenario, the phone would apply the lockout feature based on its accelerometer and on GPS assessment of user speed and location, the vehicle would employ a built-in signal field to indicate to the phone which areas of a car are designated for the driver, and the phone would not work in those areas (except for emergency calls and hands-free navigational assistance) so long as the vehicle was in motion. To be effective, the designated driver area should include any space that drivers can reach, in order to discourage them from leaning into a passenger area to use their phone. And all of these features could be complemented by measures to protect the privacy of the driver.

Finally, car companies themselves could employ one of several technologies to block mobile device use—even without collaboration with phone companies—by using signal-blocking technology. For example, conductive material (such as a form of wire mesh) that blocks all forms of electromagnetism could be installed in the area surrounding the driver’s seat, thus constructing what is known as a “Faraday cage” (after its inventor,

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<sup>274</sup> Oviedo-Trespalcios et al., *supra* note 193, at 664.

<sup>275</sup> According to Oviedo-Trespalcios et al., AT&T DriveMode was the only application identified in their study that was designed incorporating design elements aimed to “simplif[y] smartphone functionality.” *See id.* at 664.

<sup>276</sup> Patrick Tchankue, Janet Wesson & Dieter Vogts, *Are Mobile In-Car Communication Systems Feasible?: A Usability Study*, in PROCS. S. AFR. INST. FOR COMPUT. SCIENTISTS & INFO. TECHNOLOGISTS CONF., 262 (2012); Stratis Kanarachos Stavros-Richard G. Christopoulos & Alexander Chroncos, *Smartphones as an Integrated Platform for Monitoring Driver Behaviour: The Role of Sensor Fusion and Connectivity*, 95 TRANSP. RSCH. PART C: EMERGING TECHS. 867–82 (2018).

<sup>277</sup> *See* Oviedo-Trespalcios et al., *supra* note 193, at 666 (explaining how this technology does not generally prevent accidents).

scientist Michael Faraday).<sup>278</sup> While this would prevent the driver from using the cell phone for many potentially distracting purposes, it would not prevent the use of the phone for activities that do not require cellular service, such as previously downloaded games, music, or maps. Moreover, it would prevent the driver from using the phone for emergency calls without first pulling to the side of the road and exiting the driver's seat and would isolate the driver inside a literal cage. For these reasons, this particular technical option is not likely to be enthusiastically received. Less intrusive options, however, may be on the horizon.

#### IV. THE CASE FOR MANUFACTURER LIABILITY IN TORT

One approach to cell-phone-induced distracted driving that would significantly alter the current playing field, and that likely would prompt a federal regulatory response, would be to hold the manufacturer of the device liable in tort for failing to employ technology that would prevent the driver from texting (or from receiving texts) while driving. Thus far, however, every court to address the issue has rejected this approach.

Although the specific principles and criteria tend to vary somewhat from state to state, manufacturers can be held liable in tort under three general theories: negligent design, (negligent) failure to warn, and (quasi) strict liability.<sup>279</sup> Broadly speaking, tort claims can be divided into three component parts. First is what is sometimes called the *liability* component: the plaintiff must establish that the defendant's actions or inactions were sufficient to hold the defendant legally responsible for harm caused to the plaintiff. Second is *causation*: the plaintiff must establish that the connection between the defendant's actions or inactions and the plaintiff's harm is sufficient to warrant a conclusion that the defendant was the legal cause of plaintiff's harm. Third is *damages*: the plaintiff must establish that the harm suffered is of a type for which the law will award monetary compensation (or "damages") to the plaintiff. Proving the damages component is generally not an issue for plaintiffs injured as a result of cell phone-induced distracted driving. The other two components, however, have proven to be significant obstacles in cases seeking to hold cell phone manufacturers liable for those injuries.

The principles of negligence and strict products liability differ as to the liability component in all states, and as to the causation component in some states. Regardless of the precise formulation in the particular state,

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<sup>278</sup> Ian Sample, *The Faraday Cage: from Victorian Experiment to Snowden-Era Paranoia*, *GAARDIAN*, (May 22, 2017) <https://www.theguardian.com/science/2017/may/22/michael-faraday-lost-better-call-saul-genius> [perma.cc/H7EL-9K7Z].

<sup>279</sup> See generally RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. §1 (AM. L. INST. 1998) (summarizing and synthesizing products liability law from all American states).

however, the court's notion of appropriate public policy looms large, and this has proven to be a substantial impediment for tort claims against cell phone manufacturers.

### A. The Liability Component

#### 1. Negligence: duty of care

To hold a cell phone manufacturer liable in negligence for injuries inflicted by an accident caused by call phone distraction, the plaintiff needs to show: (1) that the manufacturer owed a duty to the plaintiff to adhere to a particular standard of care; and (2) that the manufacturer "breached" that duty by failing to adhere to the requisite standard of care. Courts that have addressed the distracted driving issue have concluded, largely as a matter of policy, that the cell phone manufacturer owes no duty of care to those who are injured when cell phone use distracts a driver and precipitates an accident.

#### a) Negligent design

In a 2004 decision that has proven influential, *Williams v. Cingular Wireless*<sup>280</sup>, the Indiana Court of Appeals noted that, while it is foreseeable "that cellular phone use while driving may contribute to a car accident," it is not foreseeable that the sale of a phone to a customer "will necessarily result in a car accident."<sup>281</sup> The court also analogized cell phones to other products that could distract a driver's attention:

[M]any items may be used by a person while driving, thus making the person less attentive to driving. It is foreseeable to some extent that there will be drivers who eat, apply makeup, or look at a map while driving and that some of those drivers will be involved in car accidents because of the resulting distraction. However, it would be unreasonable to find it sound public policy to impose a duty on the restaurant or cosmetic manufacturer or map designer to prevent such accidents. It is the driver's responsibility to drive with due care. Similarly, Cingular cannot control what people do with the phones after they purchase them. To place a duty on Cingular to stop selling cellular phones because they might be involved in a car accident would be akin to making a car

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<sup>280</sup> See *Williams v. Cingular Wireless*, 809 N.E.2d 473, 479 (Ind. Ct. App. 2004) (holding that cellular phone company did not owe a duty of care to plaintiff injured by motorist who used a phone while driving).

<sup>281</sup> *Id.* at 479.

manufacturer stop selling otherwise safe cars because the car might be negligently used in such a way that it causes an accident.<sup>282</sup>

Implicit in this assessment is the assumption that the cell phone manufacturer has no control over how or when its phone is used, and the *Williams* court made that assumption clear later in the opinion: “Imposing a duty on Cingular and similar companies to prevent car accidents such as the one in this case would effectively require the companies to stop selling cellular phones entirely because the companies have no way of preventing customers from using the phones while driving.”<sup>283</sup> Reasoning that holding the manufacturer liable in such a situation “would place a higher burden on those companies than on other types of manufacturers or sellers of products that might be distracting to drivers,” the court held that “sound public policy” forbade extending liability to the cell phone manufacturer (or retailer).<sup>284</sup>

With Apple’s patenting of its lockout feature, of course, we now know that manufacturers *do* have a way of preventing customers from using their phones while driving. Nonetheless, the California Court of Appeals reached the same ultimate result in a 2018 case in which Apple’s 2014 patent and 2008 patent application were prominently referenced in the plaintiffs’ complaint. In *Modisette v. Apple, Inc.*,<sup>285</sup> a case arising from an automobile accident on a Texas highway but brought in Apple’s home state of California, the court applied California negligence law to find that Apple owed no duty of care to a family whose daughter had been killed by a driver who crashed into their parked car while engaging in a video chat on his I-Phone’s “Face Time” application. The family’s lawyers cited to Apple’s patent both as proof of the contention that the manufacturer could have designed the phone to prevent the driver’s use of the video chat (or texting) function while driving, and as proof of Apple’s acknowledgement (expressed in the language of the patent application) that the use of such functions while driving poses a meaningful risk of harm to others. The plaintiffs also cited to what they termed the “body of studies and data that demonstrate the compulsive/addictive nature of smartphone use,”<sup>286</sup> and to NHTSA data on the prevalence of cell-phone-related automobile accidents in the U.S.<sup>287</sup>

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<sup>282</sup> *Id.* at 478.

<sup>283</sup> *Id.* at 479.

<sup>284</sup> *Id.*; See also *Durkee v. C.H. Robinson Worldwide, Inc.* 765 F.Supp.2d 742, 749 (D.N.C. 2011), (manufacturer of in-truck texting-system had no duty to design the system to block texts when truck was moving, in part because “no product that would potentially distract a driver could be marketed”), *aff’d*, 502 Fed.Appx. 326 (4th Cir. 2013); *Modisette v. Apple Inc.*, 30 Cal. App. 5th 136 (Cal. Ct. App., 2018); Similar analysis can be found in *Estate of Barclay Doyle v. Sprint/Nextel Corp.*, 248 P.3d 947 (Okla. Civ. App. 2011).

<sup>285</sup> *Modisette v. Apple Inc.*, 30 Cal. App. 5th 136, 140 (Cal. App. 2018).

<sup>286</sup> *Id.* at 213.

<sup>287</sup> *Id.* at 214.

Noting that the existence (*vel non*) of a duty of care “is a pure question of law,”<sup>288</sup> the court began its negligence analysis with a California statute that articulates “the general duty of each person to exercise, in his or her activities, reasonable care for the safety of others,”<sup>289</sup> but noted that this general presumption can be overcome by “a determination by the court that public policy concerns outweigh, for a particular category of cases, the broad principle enacted by the Legislature.”<sup>290</sup> The court relied on seven factors in making this public policy determination:

[1] the foreseeability of harm to the plaintiff, [2] the degree of certainty that the plaintiff suffered injury, [3] the closeness of the connection between the defendant’s conduct and the injury suffered, [4] the moral blame attached to the defendant’s conduct, [5] the policy of preventing future harm, [6] the extent of the burden to the defendant and consequences to the community of imposing a duty to exercise care with resulting liability for breach, and [7] the availability, cost, and prevalence of insurance for the risk involved.<sup>291</sup>

Unlike the Indiana court in *Williams*, the California court had no difficulty finding that “the category of negligent conduct at issue is sufficiently likely to result in the kind of harm experienced,” although it conditioned this finding on the assumption that the allegations in the complaint were true.<sup>292</sup> The court also found that the moral blame, certainty of injury, and prevention of future harm factors weighed in favor of imposing a duty of care.<sup>293</sup>

Yet the court found that the balance of the factors weighed against imposing a duty of care. Echoing (and later quoting) the *Williams* decision, the court reasoned that “Apple’s design of the iPhone” had “simply made [the driver’s] use of the phone while driving possible, as does the creator of any product (such as a map, a radio, a hot cup of coffee, or makeup) that could foreseeably distract a driver using the product while driving.”<sup>294</sup> Left unsaid

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<sup>288</sup> *Id.* at 216.

<sup>289</sup> *Id.*; see also CAL. CIV. CODE ANN. § 1714(a) (West 2012) (establishing liability for defendant’s failure to act with “ordinary care or skill in the management of his or her property or person”).

<sup>290</sup> *Modisette v. Apple Inc.*, 30 Cal. App. 5th 136, 216 (Cal. App. 2018).

<sup>291</sup> *Id.* (quoting *Rowland v. Christian*, 443 P.2d 561, 564 (Cal. 1968)). These are commonly known in California courts as the *Rowland* factors.

<sup>292</sup> *Id.* at 217 (quoting *Ballard v. Uribe*, 715 P.2d 624, 628 n.6 (Cal. 1986)).

<sup>293</sup> *Id.*

<sup>294</sup> *Id.* at 219; see also *id.* at 221 (citing *Williams* to explain that although it “is foreseeable to some extent that there will be drivers who eat, apply makeup, or look at a map while driving and that some of those drivers will be involved in car accidents because of the resulting distraction . . . it would be unreasonable to find it sound public policy to impose a duty on the restaurant or cosmetic manufacturer or map designer to prevent such accidents,”

was the obvious fact that Apple, in contrast to the manufacturers of these other products, has the ability to design its product in a way that prevents its use when it could distract the driver.

The court did acknowledge the plaintiffs' argument that cell phones are distinguishable from other products because of the (allegedly) "compulsive/addictive nature" of their use, and assumed the truth of that proposition for purposes of the motion to dismiss.<sup>295</sup> However, the court determined that, because the California legislature added a provision to the state motor vehicle code that allows drivers to activate or deactivate any cell phone function with a swipe or tap of the finger, the legislature had implicitly authorized drivers to access cell phones while driving "under some circumstances."<sup>296</sup>

### **b) Negligent failure to warn**

Although there are exceptions,<sup>297</sup> suits against manufacturers for their failure to warn consumers or users of the dangers of a product are usually framed as negligence actions.<sup>298</sup> In general, the plaintiff alleges the manufacturer knew or reasonably should have known of a particular risk posed by the product, and that the plaintiff was injured because of the manufacturer's failure to provide adequate warning of that risk. At the outset, the validity of this type of action is called into question in a distracted driving case by the fact that the consumer or user of the cell phone creating the distraction (*i.e.*, the distracted driver) is not typically the plaintiff in a distracted driving case. The principal plaintiffs are the (presumably) innocent drivers or passengers in the vehicles struck by (or otherwise harmed by) the vehicle driven by the distracted driver. Tort law is unlikely to extend a duty to the cell phone manufacturer to warn the public in general of the dangers posed by cell-phone-induced distractions. Not only would arguments in favor of the imposition of such a duty face the conceptual and practical difficulties discussed above, but the benefits of warning the innocent victim may be

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and that to "place a duty on [the seller] to stop selling cellular phones because they might be involved in a car accident would be akin to making a car manufacturer stop selling otherwise safe cars because the car might be negligently used in such a way that it causes an accident") (Williams v. Cingular Wireless, 809 N.E.2d 473, 478 (Ind. Ct. App. 2004)).

<sup>295</sup> *Id.* at 222.

<sup>296</sup> *Id.* at 223.

<sup>297</sup> *See, e.g.*, Beshada v. Johns-Manville Prods. Corp., 447 A.2d 539, 546–47 (N.J. 1982) (applying strict liability to asbestos manufacturer's failure to warn of the dangers of asbestos, thus holding that manufacturer could be found liable even accepting its argument that such dangers were "undiscoverable" at the time of manufacture).

<sup>298</sup> *See, e.g.*, RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. §2(C) (AM. LAW INST. 1998) (describing the "failure to warn" cause of action using the language of negligence, including the words "foreseeable" and "reasonable").

difficult to establish. Short of deciding to forgo automobile transportation altogether, it is not altogether clear what practical use the prospective victims of distracted driving could make of this warning as a means of avoiding distracted drivers.

A more interesting potential cause of action could be one on behalf of the distracted driver him/herself, who may well have been injured in the crash and may also wish to hold the cell phone manufacturer wholly or partially liable for damages to the innocent victims. However, given the various state laws relating to cell phone use while driving, and the publicity surrounding the issue generally, it may well be difficult for the distracted driver to demonstrate that the lack of a general warning from the manufacturer about the dangers of distracted driving was an actual cause of a resultant accident. If the driver was not deterred by the general societal warnings about the risks of using cell phones while driving, a court is unlikely to conclude that an additional such warning from the manufacturer would have made a material difference. Indeed, manufacturers might well attempt to use these general societal warnings—perhaps augmented by their own warnings to consumers—as a means of insulating themselves from liability, and in support of the argument that drivers who use cell phones in spite of these warnings essentially assume the risk of any resultant harm.

An argument that the manufacturer had a duty to provide a more specific warning of the psychologically addictive nature of cell phone use (and especially of texting), and that such a warning would have deterred the driver from using the cell phone (and especially from texting while driving), may be a stronger claim. However, such a claim was apparently made in *Modisette*,<sup>299</sup> and it fared no better than the plaintiffs' general negligence claim.<sup>300</sup>

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<sup>299</sup> *Modisette v. Apple Inc.*, 241 Cal. App. 5th 136, 140. The plaintiffs alleged “that Apple had failed to warn users that the iPhone ‘was likely to be dangerous when used or misused in a reasonably foreseeable manner.’” *Id.*

<sup>300</sup> A case outside the common law tort system that sought broad-based societal warnings also failed in the California state courts. In a suit against Apple, Samsung Electronics America, Google., and Microsoft Corporation, plaintiffs alleged “public nuisance and violations of the California Unfair Competition Law (UCL) based on defendants’ failure ‘to adequately warn their customers about the potential safety risks and dangers of using smartphones and smartwatches while driving.’” *Coalition Against Distracted Driving v. Apple Inc.*, No. B278992, 2018 WL 2016665 at \*1 (Cal. App. 2d Dist. May 1, 2018). The suit sought “a ‘permanent injunction requiring Defendants to fund an effective and ongoing national public education campaign through one or more third parties, effectively explaining the risks of using a smartphone or smartwatches [while] driving, especially the Apple Watch and other smartwatches, in an amount not less than \$1 billion annually.’” *Id.* In an unpublished opinion, the California Court of Appeals upheld the trial court’s dismissal of the case for failure to state a viable claim, holding that “plaintiffs cannot show a causal connection between any injury and defendants’ failure to warn.” *Id.* at \*4.

## 2. “Strict” products liability: defective and unreasonably dangerous

In general, true strict products liability is applied only for those products that cause harm because of what is usually termed a “manufacturing defect”—*i.e.*, a failure of the particular item to conform to the intended design for that product.<sup>301</sup> Products liability suits against cell phone manufacturers, however, are likely to be focused on what is commonly termed a “design defect”—*i.e.*, an allegation that the phone is defective *as designed*, and that this defect caused the plaintiff’s injuries. While there is no uniform formulation of the design defect case that is applicable in all states, a frequently used formulation is that the plaintiff must show that his or her injuries stemmed from a defect in the product’s design that made the product unreasonably dangerous.<sup>302</sup> Although these are often referenced as “strict liability” actions, design defect cases tend to be grounded in negligence principles.<sup>303</sup>

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To state a cause of action for public nuisance, a private plaintiff must show a defendant’s acts are likely to cause a significant invasion of a public right. Under the UCL, a private party must show that [the] economic injury was the result of, *i.e.*, *caused by*, the [unlawful] or unfair business practice . . . . Smartphones and smartwatches were not the cause of the accidents plaintiffs described in the [complaint]. Drivers engaged in conduct prohibited by law were the cause of those accidents. Defendants’ products do not cause consumers to violate the law. There is no valid ground on which to hold defendants liable for the poor choices drivers make. By manufacturing and selling their products, defendants do not facilitate or encourage drivers’ violations of the law. Defendants have no duty to educate consumers about why they should refrain from violating the law. . . . Plaintiffs’ quest to raise awareness about the dangers of distracted driving is a noble one. But they have no just cause to place the burden of warning consumers about distracted driving upon the manufacturers and sellers of smartphones, smartwatches, and applications.

*Id.* (citations and internal quotes omitted). The California Supreme Court subsequently denied review on Aug 15, 2018. *Coalition Against Distracted Driving v. Apple Inc.*, No. S249149, 2018 Cal. LEXIS 6007 (Cal. 2018). *See also Supreme Court Minutes*, California Supreme Court Minutes 1165 (Aug. 15, 2018). <https://www.courts.ca.gov/documents/minutes/SAUG1518.PDF> [perma.cc/VF9J-X6WK].

<sup>301</sup> RESTATEMENT (THIRD) OF TORTS: PRODS. LIAB. §2(A) (AM. L. INST. 1998).

<sup>302</sup> *Id.* at §2(b).

<sup>303</sup> *See, e.g.*, David G. Owen, “Defectiveness Restated: Exploding the ‘Strict’ Products Liability Myth,” 1996 U. ILL. L. REV. 743, 747, 758 (1996) (arguing that, while strict liability has been adopted for manufacturing defect torts, a reasonableness standard prevails “at the heart of the design defect standard of liability”).



Such cases generally turn on the availability of an alternative design: is there an alternative design that could have been adopted that would have prevented the injury without destroying the utility of the product?<sup>304</sup> Whether such an alternative design exists cuts across both elements of a design defect case: the fact that it would prevent this type of injury helps make the case for a defect, and the fact that it allows the product to retain its utility helps make the case that the product is unreasonably dangerous without it. An issue that may not be addressed uniformly among the various states is whether the availability of the alternative design will be determined with reference to the “state of the art” as practiced within the industry or with reference to the cutting edge of scientific and technical knowledge. To the extent that the former approach is taken, the cause of action tends to look more like a traditional negligence case. To the extent that the latter approach is taken—as is advocated by the Restatement (Third) of Torts<sup>305</sup>—it looks more like a specialized type of liability case. Here, the existence of Apple’s patent demonstrates that relevant alternative designs were part of the state of the art within the industry by at least 2014 (or perhaps 2008).

The authors of this article are unaware of any court having reached these issues in a “strict” products liability case against a cell phone manufacturer; as is discussed below, those cases have tended to be resolved (in favor of the manufacturer) on the issue of causation. Nonetheless, the elements of a defective design case against a cell phone manufacturer would seem to be relatively straightforward. The alleged defect would be the failure of the phone to restrict access to those who are actively driving a vehicle. As discussed, alternative designs exist that would permit the manufacturer to restrict access in this fashion, while still allowing the phone to be put to all other uses. If made a mandatory component of the cell phone, such designs would effectively prevent the phone from distracting the driver while driving, thus protecting passengers, pedestrians, and occupants of other vehicles from the accidents that could be caused by such distraction.

The question that may prove somewhat more difficult for the plaintiff is whether the phone could be considered “unreasonably dangerous” without such an alternative design. In general, the issue of whether a product is unreasonably dangerous (whether it presents an unreasonable risk) involves a risk/utility inquiry: Does the benefit of the product outweigh its risk? At this initial level of inquiry, most courts may find that the various social benefits of cell phones easily outweigh the social risk posed by the potential harm caused by the cell phone-distracted driver. Given the existence of an

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<sup>304</sup> *Id.* at 757 (“[A] manufacturer would be blameworthy for choosing to sell a defectively designed, not *reasonably* safe product containing *foreseeable* risks that reasonably could have (and hence ‘should have’) been avoided had the manufacturer adopted a *reasonable* alternative design”).

<sup>305</sup> *Id.*

alternative design, however, the relevant question becomes whether the product is unreasonably dangerous *in light of the failure to employ the (safer) alternative design*. Given that the alternative design would reduce the social risk of the product, this question tends to turn on whether the alternative design would do so while still preserving (or not unduly diminishing) the social utility of the product.

The various cell phone “shutoff” designs do preserve the utility of the phone for almost all uses except those involving use by the driver *while driving*. Is the ability of the driver to access the phone while driving worth more to society than the prevention of the injuries and deaths that would occur if (as now) the driver were permitted unfettered access to the phone at any point during the drive? The courts have indicated an openness to the argument that there is social utility to cell phone use by the driver. In the *Modisette* decision, the California Court of Appeals quoted with apparent approval the earlier observation of its counterpart in Indiana that “many drivers use cellular phones safely for personal and business calls, as well as to report traffic emergencies. Encouraging drivers to report accidents, dangerous road conditions, or other similar threats to authorities on their cellular phones is in the public’s interest.”<sup>306</sup>

However, use of the phone to report accidents, road conditions, or other meaningful information often could be done by the driver after pulling over to make the call. While this might reduce the immediacy of some of the reporting, and might occasionally involve an added risk, it is also likely that the use of the cell phone for such purposes is relatively rare. Moreover, the need for pulling over is eliminated altogether where the cell phone’s shutoff function applies only to manual and visual access to the phone, and preserves the driver’s ability to utilize the phone through a voice-activated function. This would enable the driver to make calls, access driving directions, or even search for an address, all without taking hands off the wheel or eyes off the road. With such functions preserved, it would be difficult to argue that the reduction in social risk achieved by the shutoff alternative does not outweigh any slight reduction in the social utility of the phone.<sup>307</sup>

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<sup>306</sup> *Modisette v. Apple Inc.*, 241 Cal. App. 5th 136, 222 (quoting *Williams v. Cingular Wireless* 809 N.E.2d 473, 479).

<sup>307</sup> As discussed above, lockout features such as Apple’s Do Not Disturb While Driving app have the added inconvenience of also disabling a passenger’s use of the phone while the vehicle is moving. However, as also noted, Apple has a patent on an improved feature that would selectively target the driver’s phone but has not yet made this feature available to the public. See Insurance Institute for Highway Safety & Highway Loss Data Institute, *supra* note 264, at 5; U.S. Patent No. 8,706,143 B1, *supra* note 259.

### B. The Causation Component: Negligence and “Strict” Liability

Whether the cause of action lies in negligence or “strict” products liability for defective design, the plaintiff must prove that the cell phone was a legal cause of the injuries alleged. The most common formulation of the causation requirement is the concept of *proximate causation*, which is often said to have two prerequisites: that the defendant’s product was a *cause in fact* of the plaintiff’s injuries, and that such injuries were (*reasonably*) *foreseeable*.<sup>308</sup> In the *Modisette* case, the California Court of Appeals applied the proximate causation requirement to all of the plaintiffs’ claims, both those based in negligence and those based in strict liability. In *Meador*, however, the Fifth Circuit noted that Texas law applies the proximate causation requirement in negligence cases, but drops the foreseeability element for strict products liability cases.<sup>309</sup> Despite the somewhat different approach, both courts held that—as a matter of law—the cell phones in those cases were not the cause in fact of the injuries suffered by those struck by the distracted driver.

#### 1. Cause in Fact

Under Texas law, as applied by the Fifth Circuit in *Meador*, “[c]ause in fact means that the defendant’s act or omission was a substantial factor in bringing about the injury which would not otherwise have occurred,”<sup>310</sup> and the meaning of “substantial factor” is informed by the following comment from the Restatement (Second) of Torts:

The word ‘substantial’ is used to denote the fact that the defendant’s conduct has such an effect in producing the harm as to lead reasonable men to regard it as a cause, using that word in the popular sense, in which there always lurks the idea of responsibility, rather than in the so-called ‘philosophic sense,’ which includes every one of the great number of events without which any happening would not have occurred. Each of these events is a cause in the so-called ‘philosophic sense,’ yet the effect of many of them is so insignificant that no ordinary mind would think of them as causes.<sup>311</sup>

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<sup>308</sup> “Proximate cause consists of both cause in fact and foreseeability.” *Meador v. Apple Inc.*, 911 F.3d 260, 264 (5th Cir. 2018 (citation and internal quotes omitted)).

<sup>309</sup> Texas law requires the strict liability plaintiff to prove that the defendant’s product was the “producing cause” of the injury, where “[p]roducing cause” has the same meaning as cause in fact, with no showing of foreseeability required.” *Id.*

<sup>310</sup> *Id.* (citation and internal quotes omitted).

<sup>311</sup> *Id.* at 265 (quoting Restatement (Second) of Torts § 431 cmt. a (Am. L. Inst. 1965)).

Rather than allow a *jury* of “reasonable” persons to determine whether the distracted driver’s cell phone was more than an “insignificant” cause of the accident giving rise to the plaintiffs’ injuries, the Fifth Circuit upheld dismissal of the case at the pleading stage. “Ultimately,” the court noted, this inquiry “mandates weighing of policy considerations” by the Texas state courts.<sup>312</sup> Even accepting as true the plaintiffs’ allegation that the cell phone induced a “neurobiological response” in the driver,<sup>313</sup> the court held, “no authority indicates to us that Texas courts, contemplating reasonable persons and ordinary minds, would recognize a person’s induced responses to her phone as a substantial factor in her tortious acts and therefore hold the phone’s manufacturer responsible.”<sup>314</sup> In other words, the Fifth Circuit did not believe it to be within its role as a federal court to make a policy choice that the state courts responsible for the development of Texas tort law had not already made.<sup>315</sup>

Deference to another court’s decisions was not an issue in *Modisette*, as the case was brought in state court in Apple’s home state of California. Unlike the Texas courts, California state courts do not incorporate public policy concerns in their test for cause in fact, but rather identify “public policy considerations” as the second element of the proximate causation requirement.<sup>316</sup> As articulated in *Modisette*, the cause in fact element in

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<sup>312</sup> *Id.* at 265 (citation and internal quotes omitted).

<sup>313</sup> *See Id.* at 265, 267 (“[W]e decline to consider ‘neurobiological compulsion’ a substantial factor under Texas law.”).

<sup>314</sup> *Id.* at 265.

<sup>315</sup> Under the doctrine of *Erie Railroad Co. v. Tompkins*, 304 U.S. 64 (1938), federal courts hearing state law cases under diversity jurisdiction must apply the law as articulated by the courts of that state. The Fifth Circuit acknowledged that this presents a hurdle to plaintiffs in distracted driving cases against cell phone manufacturers:

[W]here defendants operate nationwide in highly consolidated industries, like Apple in the smartphone industry, the rules governing federal courts in diversity cases may substantially close state courts to novel claims. Sued anywhere outside of their home states, the defendants can remove to federal courts. Those courts will then decide the cases under *Erie* precedents that require resort to state case law and likely prohibit acceptance of innovative theories. Provided the defendants diligently exercise their right to remove, cases may never progress through state courts outside of the defendants’ home states. . . . Certification of questions to the state’s highest court is perhaps a way out of this bind. Appellants did not request that here, and their theory of causation is too great an extension beyond existing Texas law for us to consider *sua sponte* certification.

*Meador v. Apple Inc.*, 911 F.3d at 267, n.6.

<sup>316</sup> *Modisette v. Apple Inc.*, 30 Cal. App. 5th 136, 138 (“Proximate cause has two aspects. One is cause in fact. . . . [t]he second aspect of proximate cause focuses on public policy considerations”) (citation and internal quotes omitted). Presumably, this second aspect incorporates the foreseeability inquiry that commonly is part of the proximate cause analysis.

California involves a purely factual inquiry: whether there is “evidence which affords a reasonable basis for the conclusion that it is more likely than not that the conduct of the defendant was a cause in fact of [plaintiff’s harm].”<sup>317</sup> Applying this factual test, the California Court of Appeals held that the *Modisette* plaintiffs had alleged facts that, if true, would be sufficient to find that Apple’s design of the cell phone used by the distracted driver was a cause in fact of the injuries alleged:

Taking the Modisettes’ properly pleaded allegations as true, it appears to us that the first amended complaint pleaded facts sufficient to establish that Apple’s design of the iPhone 6 Plus without its patented lockout technology was a cause in fact of the Modisettes’ injuries because it was a necessary antecedent of the accident.<sup>318</sup>

Having found cause in fact, however, the court found that policy considerations precluded a finding of proximate causation. The policy component of the proximate causation analysis, the court noted, is concerned “with the various considerations of policy that limit an actor’s responsibility for the consequences of his conduct,” and is decided as “a question of law.”<sup>319</sup> The core policy principle, according to the court, is that “legal responsibility must be limited to those causes which are so close to the result, or of such significance as causes, that the law is justified in making the defendant pay.”<sup>320</sup> Like every other court to address the issue, the California Court of Appeals concluded that the role of the cell phone in contributing to the plaintiffs’ injuries was too insignificant to warrant the imposition of liability:

Although Apple’s manufacture of the iPhone 6 Plus without the lockout technology was a necessary antecedent of the Modisettes’ injuries (as was the police activity that slowed traffic on the interstate that day), those injuries were not a result of Apple’s conduct. Rather, [the distracted driver] caused the Modisettes’ injuries when he crashed into their car while he willingly diverted his attention from the highway.<sup>321</sup>

Like the Fifth Circuit in *Meador*, the California court thus concluded that, as a matter of law, no reasonable person “would consider Apple a cause of the accident,” thus taking the case out of the hands of a jury.<sup>322</sup>

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<sup>317</sup> *Id.* at 153. The court identifies this as “but-for” causation, which is commonly conceptualized as a finding that the plaintiff’s injury would not have occurred but for the actions of (or the product manufactured by) the defendant.

<sup>318</sup> *Id.* (citation and internal quotes omitted).

<sup>319</sup> *Id.* at 154 (citations and internal quotes omitted).

<sup>320</sup> *Id.* (citation and internal quotes omitted).

<sup>321</sup> *Id.*

<sup>322</sup> *Id.* at 155.

Especially since the public policy impetus behind products liability law is to encourage the manufacture of products that are both safe and useful,<sup>323</sup> this is a curious result. Certainly, given Apple's own admission in its patent applications that equipping its phones with a lockout function would prevent cell phone use while driving and thus prevent accidents, a "reasonable person" could very well conclude that Apple's failure to install such technology "was a cause" of an accident resulting from a driver's use of an Apple phone. Further, the California court's equating of Apple's role in the accident with "the police activity that slowed traffic"—the distracted driver had collided with the Modisettes' car at a spot where the police had stopped traffic—is justifiable neither as a factual or a policy matter. The "police activity" did not cause *all* oncoming traffic to have accidents—it was only the driver distracted by his use of Apple's phone who crashed his car into the vehicle stopped in front of him. Further, while there is no overriding policy justification for holding police officers liable for stopping traffic in the interest of public safety, there is ample justification for creating an incentive for a manufacturer of a widely used product to take readily available measures to make that product safer.

## 2. Foreseeability

To the extent that foreseeability is a component of the causation requirement in products liability actions, it may be trending in the plaintiffs' favor in distracted driving cases. The Fifth Circuit did not reach the issue in *Meador* because it resolved the case on the issue of cause in fact. The foreseeability question was addressed in *Williams*, but only in the context of determining whether the manufacturer owed the plaintiffs a duty of care<sup>324</sup>, and the Indiana Court of Appeals was careful to note that a different analysis would be required if the question were proximate causation. Indeed, the court noted that, in Indiana, "proximate cause is normally a factual question for the jury, while duty is usually a legal question for the court."<sup>325</sup> The *Modisette* decision, however, did address foreseeability as part of its proximate cause analysis: "We do not conclude here that [the distracted driver's] use of the iPhone while driving was unforeseeable. Rather, we determine that the gap between Apple's design of the iPhone and the Modisettes' injuries is too great

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<sup>323</sup> John W. Wade, *On the Nature of Strict Tort Liability for Products*, 44 MISS. L.J. 825, 826 (1973).

<sup>324</sup> See discussion *supra* at A.1.; in the words of the *Williams* court: "We do not conclude that there was a high degree of foreseeability that the sale of the phone would result in an accident." *Williams v. Cingular Wireless*, 809 N.E.2d 473, 478.

<sup>325</sup> *Williams*, 809 N.E.2d, at 477.

for the tort system to hold Apple responsible.”<sup>326</sup> Thus, while the California court declined to find sufficient evidence of legal causation *as a policy matter*, it effectively acknowledged that it is foreseeable that Apple’s failure to equip its phones with a “lockout” feature will cause vehicular accidents.

#### V. AN ARGUMENT FOR CHANGE: ALIGNING MODERN TORT LAW WITH MODERN TECHNOLOGY

In the judgement of the authors of this article, a cell phone without an appropriate lockout device is a defective and unreasonably dangerous product, and should be treated as such by the tort system. The unwillingness of the courts thus far to find that such phones are the legal cause of resultant accidents appears to be borne of two basic public policy considerations, neither of which stands up to scrutiny.

The first consideration is what might be termed the “floodgates” issue: the courts appear to be concerned that a ruling in favor of a distracted driving plaintiff would open the proverbial floodgates for a number of similar cases involving other commonly used products. Thus, the courts routinely cite to other products—food, maps, radios, cosmetics, alcohol, and the like—that could distract a driver and cause a collision. But cell phones are readily distinguishable from those other products on a technological basis that has—or should have—critical legal importance. Cell phones can be made safer without destroying their essential utility, while these other items cannot. There is no readily available “shutoff” technology for the numerous other products that might distract a driver, and the makers of these products thus have little to fear from the imposition of tort liability on cell phone manufacturers. Moreover, although the compulsive eater or the alcoholic may have a psychological or physiological dependence on food or alcohol, the addictive properties of cell phones can be expected to affect a much broader swath of the driving population. Cell phones have been shown to trigger a physiological response in users—including drivers—that heightens their propensity for misuse. As a matter of policy, then, there is a solid rationale for addressing them within the tort system

The second consideration that appears to be driving judicial reticence is a variant of the floodgates issue: a concern that imposing liability on Apple

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<sup>326</sup> Modisette, 30 Cal. App. 5<sup>th</sup>, at 155. The court addressed foreseeability in the context of Apple’s affirmative defense that the driver’s “misuse” of the phone was the cause of the accident, noting that the viability of such a defense depends on “whether a third party’s misuse of a product was the superseding cause of injury that absolves a tortfeasor of his or her own wrongful conduct [because] the misuse was so highly extraordinary as to be unforeseeable.” *Id.* (citation and internal quotes omitted).

or another cell phone manufacturer in one state would encourage similar lawsuits in every other state, and thus would submit a ubiquitous and popular technology to legal sanction. There is little question that the cell phone has become the most popular and widely used new technology since the computer, but this is all the more reason to make it safer. Sixty years ago, the automobile was a widely popular and relatively new technology, and the automobile industry—like the cell phone industry today—was an influential mainstay of the national economy. But that did not stop the state courts from imposing a duty on automobile manufacturers to design and distribute safe vehicles.<sup>327</sup> The same common-sense impetus toward public safety—which helped spur the industry to improve and refine an undeniably useful product—should be applied to the cell phone today.

### CONCLUSION: FOCUS ON THE TECHNOLOGY

The issue of driver distraction from telecommunication devices has not lacked for public attention. Although fixed vehicle technologies that permit viewing by the driver are undoubtedly distracting, it is nomadic devices such as cell phones and GPS systems that are viewed as posing the largest potential harm, both because they are more ubiquitous and because attempts to restrict their use are often perceived as infringements on freedom of choice and often engender driver resistance. The advent of 5G technologies, with their anticipated increased downloading and streaming capacities, is likely to increase the distractive potential of these nomadic devices.

In large part, government attempts to regulate the vehicular use of such devices—whether through the legislative system or through tort law—have focused their attention on the behavior of the driver. And, in large part, these attempts have not been sufficiently successful. Prohibitions against driver use of cell phones and other hand-held devices are notoriously difficult to enforce. Not only is illegal use often difficult to detect, but it is often difficult to prove beyond a reasonable doubt when it is detected. Even when the penalties for noncompliance are viewed as significant, drivers may choose to continue to use their favorite devices, especially if they view the risk of arrest and conviction as being tolerably remote.

The tort system helps perpetuate this driver-focused approach. It imposes financial responsibility for injury on the driver, the victim, and their respective insurance companies, while confirming for the device

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<sup>327</sup> See, e.g., *Henningsen v. Bloomfield Motors, Inc.*, 32 N.J. 358, 370 (N.J. 1960) (imposing strict products liability on automobile manufacturer); *Vandermark v. Ford Motor Co.*, 61 Cal. 2d 256, 260 (Cal. 1964) (same).



manufacturers that they bear no responsibility. And while the imposition of legal liability on the distracted driver likely does have an impact on other drivers, and likely causes some of them to turn off their cell phones when they get in their vehicles, this remains a piecemeal response to an issue that cries out for a more systemic approach.

Fortunately, a common-sense systemic approach is within reach. A requirement that cell phones and other nomadic devices be equipped with software that prevents the driver from using the device for other than emergency purposes would immediately transform roads and highways across the country, and would provide strong incentive for manufacturers to develop or implement improvements to existing lockout technologies that would allow passengers to use their devices while the car is moving, thus making the lockout more convenient overall. Ideally, this would be done by federal regulation, but it could be accomplished by the state tort system as well. If even one major state, perhaps with encouragement from the state legislature, were to hold a cell phone manufacturer liable for a failure to equip its phone with a mandatory shutoff function, manufacturers would also feel the need to develop and implement suitable technologies.

Either approach, through legislation or litigation, will require political will and a strong backing from the public. Legislation regulating cell phone design likely would meet with considerable and well-funded opposition in Congress. And a state court decision imposing manufacturer liability might well face campaigns in Congress and state legislatures for laws insulating the industry from liability. Nonetheless, we believe that the public safety interests at stake are well worth the effort.