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Vigilance et distraction au volant

Bibliographie sélective

Compilée par Maude Couturier
Bibliothèque Cécile-Rouleau
Services à la clientèle

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Ce document présente une sélection de publications sur des sujets reliés à la vigilance et à la distraction au volant.

Les documents recensés datent de 2007 à 2017 et proviennent des bases de données bibliographiques de la Bibliothèque Cécile-Rouleau et du catalogue du Réseau informatisé des bibliothèques gouvernementales au Québec (CUBIQ).

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TABLE DES MATIERES

OUVRAGES GÉNÉRAUX

Bernstein, J. J. et J. Bernstein (2015). "Texting at the light and other forms of device distraction behind the wheel." BMC Public Health, **15**(1) : 1-5.

Cell phones are a well-known source of distraction for drivers, and owing to the proliferation of text messaging services, web browsers and interactive apps, modern devices provide ever-increasing temptation for drivers to take their eyes off the road. Although it is probably obvious that drivers' manual engagement of a device while their vehicles are in motion is potentially dangerous, it may not be clear that such engagement when the vehicle is at rest (an activity broadly labeled "texting at the light") can also impose risks. For one thing, a distracted driver at rest may fail to respond quickly to sudden changes in road conditions, such as an ambulance passing through. In addition, texting at the light may decrease so-called "situational awareness" and lead to driving errors even after the device is put down. To our knowledge, the direct comparison of the rate of device usage by drivers at rest with the rate of device usage by drivers in motion has not been reported. We collected information on 2000 passenger vehicles by roadside observation. For the first group of 1000 passenger vehicles stopped at a traffic light, device usage ("texting", "talking", "none"), gender of the driver, vehicle type, seatbelt usage and presence of front seat passengers were recorded. For a second set of 1000 vehicles in motion, device usage alone was noted. Statistical significance for differences in rates was assessed with the chi-square test. […] [Résumé de l'auteur]

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(2015). Driver distraction 2015. [Luxembourg] : European Road Safety Observatory, 64 p.

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Hamilton, B. C., et al. (2012). Distracted and risk-prone drivers : select findings from 2012 traffic safety culture index. Washington DC : AAA Foundation for Traffic Safety, 12 p.

Distracted driving remains a significant and high-profile traffic safety concern, with cell phone use and text messaging among its most visible manifestations. This report presents the latest data on distracted driving from the 2012 Traffic Safety Culture Index, and examines select findings of self-reported behaviors and attitudes in the Index concluding that distracted driving may simply be one manifestation of risk-prone driving more broadly.

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Hazel, M. et J. Bergeron (2007). "La distraction au volant : aperçu des données actuelles." Routes et transports, **36**(3) : 10-13.

État des connaissances sur la distraction lors de la conduite automobile et sur les effets du téléphone cellulaire ou main libre sur l'attention; les catégories de conducteurs les plus à risque. [Résumé de la base de données]

Hilbert, R. C. (2011). Distracted driving. New York : Nova Science Publishers, 220 p.

The increasing use of cellular phones has served as a catalyst for growing interest in driver distraction in recent years. While the use of cellular phones poses a significant and increasing risk to roadway safety, studies show that it represents a relatively small proportion of a bigger distraction program. This new book examines current knowledge on driver distraction to help state and local governments formulate effective policies, regulations and laws relating to this challenging issue. [Résumé de l'éditeur]

Horrey, W. J., et al. (2010). "Distracted Driving: Examining the effects of in-vehicle tasks." Professional Safety, **55**(1) : 34-39.

The article discusses the distracted driving that focuses on the two recent studies including awareness of drivers with distractions and the development of the decisions regarding the right time in using of distracting devices at the Liberty Mutual Research Institute for Safety in the U.S. The results suggest that the perceptions of drivers are inaccurate in their own level of distraction. Moreover, the drivers are willing to involve in distracting activities even in driving conditions. [Résumé de la base de données]

Kountouriotis, G. K. et N. Merat (2016). "Leading to distraction : driver distraction, lead car, and road environment." Accident analysis and prevention, **89** : 22-30.

Driver distraction is strongly associated with crashes and near-misses, and despite the attention this topic has received in recent years, the effect of different types of distracting task on driving performance remains unclear. In the case of non-visual distractions, such as talking on the phone or other engaging verbal tasks that do not require a visual input, a common finding is reduced lateral variability in steering and gaze patterns where participants concentrate their gaze towards the centre of the road and their steering control is less variable. In the experiments presented here, we examined whether this finding is more pronounced in the presence of a lead car (which may provide a focus point for gaze) and whether the behaviour of the lead car has any influence on the driver's steering control. In addition, both visual and non-visual distraction tasks were used, and their effect on different road environments (straight and curved roadways) was assessed. Visual distraction was found to increase variability in both gaze patterns and steering control, non-visual distraction reduced gaze and steering variability in conditions without a lead car; in the conditions where a lead car was present there was no significant difference from baseline. […] [Résumé de la base de données]

Overton, T. L., et al. (2015). "Distracted driving: prevalence, problems, and prevention." International Journal of Injury Control & Safety Promotion, **22**(3) : 187-192.

While the number of motor vehicle crashes has declined over the years, crashes resulting from distracted driving are increasing in the United States resulting in significant morbidity and mortality. The national public seems to be aware of the dangers associated with using technology while driving, but continues to engage in this dangerous behaviour, and may be unaware of or underestimate the impact of

cell phone use on their own driving performance. Problems associated with distracted driving are not limited to novice or teenage drivers; multifaceted universal prevention efforts aimed at impacting large segments of the population may have the greatest impact. Legislation limiting drivers' cell phone use has had little impact, possibly due to low regulation and enforcement. Behaviour change programmes, improved vehicle safety, and public awareness campaigns have been developed as potential preventive efforts to reduce accidents caused by distracted drivers. [Résumé de l'éditeur]

Regan, M. A., et al. (2013). Driver distraction and inattention. Surrey, England : Ashgate, 440 p.

It is estimated that, in the United States, around 20 percent of all Police-reported road crashes involve driver distraction as a contributing factor. This figure increases if other forms of inattention are considered. Evidence (reviewed in this volume) suggests that the situation is similar in other countries and that driver distraction and inattention are even more dangerous as contributing factors in crashes than drug and alcohol intoxication. Having a solid evidence-base from which to develop injury countermeasures is a cornerstone of road-safety management. This book adds to the accumulating evidence-base on driver distraction and inattention. With 24 chapters by 52 authors from more than 10 countries, it provides important new perspectives on the definition and meaning of driver distraction and inattention, the mechanisms that characterize them, the measurement of their effects, strategies for mitigating their effects, and recommendations for further research. The goal of this book is to inspire further research and countermeasure development to prevent and mitigate the potentially adverse effects of driver distraction and driver inattention, and, in doing so, to save lives. [Résumé de l'éditeur]

Regan, M. A., et al. (2009). Driver distraction : theory, effects, and mitigation. Boca Raton, FL : CRC Press, 654 p.

It is estimated that up to 23 percent of crashes and near-crashes are caused by driver distraction, and these figures will likely increase as more and more distractions, both inside and outside the vehicle, compete for driver attention. *Driver Distraction: Theory, Effects, and Mitigation* gives a comprehensive overview of this issue, outlining the underlying theory of distraction, its effects on driving performance and safety, strategies for mitigating its effects, and directions for future research. It also brings together the wide array of literature on the topic into one, all-inclusive volume. [Résumé de l'éditeur]

TÉLÉPHONES CELLULAIRES AU VOLANT

(2011). Téléphone et sécurité routière. Paris : INSERM, Institut national de la santé et de la recherche médicale, 269 p.

Depuis les années 1970 en France, la sécurité routière fait l'objet d'une politique soutenue. La conduite d'un véhicule est une tâche complexe dont la performance dépend de nombreux facteurs individuels et environnementaux. Téléphoner pendant la conduite est une distraction susceptible d'augmenter le risque d'accidents. L'usage du téléphone tenu en main en conduisant est interdit en France depuis 2003. Le développement de nouveaux systèmes télématiques et en particulier de téléphonie, embarqués dans les véhicules justifie d'évaluer le risque réel associé à l'utilisation de ces nouveaux systèmes de communication. Cette expertise collective demandée par le Délégation à la sécurité et à la circulation routières rassemble les connaissances visant à comprendre comment téléphoner agit sur les processus d'attention pendant la conduite. Elle propose une estimation du risque d'accident lié à cette distraction à partir des données nationales et internationales et ouvre la voie à différentes perspectives d'actions et de recherche pour éclairer la décision publique. [Résumé de l'éditeur]

(2013). "Mobile Device Use While Driving -- United States and Seven European Countries, 2011." MMWR: Morbidity & Mortality Weekly Report, **62**(10) : 177-182.

The article presents a report on the prevalence of mobile device use while driving in the U.S., Great Britain and other European countries such as Belgium, France and Germany. The report reveals that drivers ages 18-64 talked to cell phones while driving with 21% in Great Britain and 69% in the U.S. while reading and sending messages are 15% in Spain and 31% in Portugal and U.S. It notes that road traffic accidents are a global public health problem that contributes 1.3 million deaths annually. [Résumé de la base de données]

(2015). Cell phone use while driving 2015. [Luxembourg] : European Road Safety Observatory, 34 p.

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(2017). "L'appel irrépressible du Smartphone." Circuler autrement, 182 : 8-10.

Beaudry, C. (2008). "Utilisation du téléphone cellulaire au volant." Travail et santé, **24**(2) : 12.

Survol des dispositions et des exclusions du Code de la sécurité routière concernant l'utilisation du téléphone cellulaire au volant depuis décembre 2007. [Résumé de la base de données]

Cheng, C. (2015). "Do cell phone bans change driver behavior?" Economic Inquiry, **53**(3) : 1420-1436.

In response to concerns that distracted driving due to cell phone use has become a threat to roadway safety, many states have passed laws that prohibit drivers from

texting and talking on handheld cell phones. In light of recent evidence that these bans do not reduce traffic accidents, this article asks whether this is because the laws are ineffective in reducing usage. Using data on observed driver cell phone usage combined with a difference-in-differences approach that exploits the within-state variation in the adoption of bans, I find that prohibiting drivers from texting and talking on handheld cell phones reduces each by 60% and 50%, respectively. This suggests the policy is effective at reducing the targeted behavior, which leads me to discuss other factors and behavioral responses that may counteract the reduction in observed usage. [Résumé de l'auteur]

Crowther, M. (2013). The impact of texting on our society: A look into the utlization of this communication conduit and the possible positive or negative impact it has on drivers. (Thèse de maîtrise). Gonzaga University (Washington, United States), 48 p.

Communication is an essential part of our everyday lives, without it we would have no way to form a community or societal structure that would allow us to effectively work and live amongst one another. Advances in technology, such as texting, have created a virtual forum for people to communicate within. Due to this change, other consequences, such as vehicle injuries and fatalities have become a recurring problem. To attempt to find potential positive or negative impacts that texting has on individuals while driving, 10 face-to-face interviews were conducted and 100 surveys were sent to a random sample of participants. Findings supported driver inattention causing lane deviations, speed variations and missing light changes which has contributed to an increased chance of incident by 23 times. The Theory of Planned Behavior and Cognitive Dissonance Theory are utilized to support the findings of this study and why people choose to text while driving. [Résumé de l'auteur]

Dayan, H., et al. (2010). "CAEP position statement on cellphone use while driving." CJEM: Canadian Journal of Emergency Medicine, **12**(4) : 365-370.

Distracted driving caused by cellphone use is a significant source of needless injuries. These injuries place unnecessary financial burden, emotional stress and health care resource misuse on society. This paper states the Canadian Association of Emergency Physician's (CAEP's) position on cellphone use while driving. In recent years, numerous studies were conducted on the danger of cellphone use while driving. Research has shown that cellphone use while driving negatively impacts cognitive functions, visual fields, reaction time and overall driving performances. Some studies found that cellphone use is as dangerous as driving under the influence of alcohol. Moreover, vehicle crash rates were shown to be significantly higher when drivers used cellphones. Countermeasures have been implemented in recent years. Over 50 countries worldwide have laws limiting 6the use of cellphones while driving. Six Canadian provinces, Newfoundland and Labrador, Nova Scotia, Quebec, Ontario, British Columbia and Saskatchewan, currently have legislation prohibiting cellphone use. Other provinces are considering implementing similar bans. As emergency physicians, we must advocate for injury prevention. […]. [Résumé de l'auteur]

Dozza, M., et al. (2015). "Real-world effects of using a phone while driving on lateral and longitudinal control of vehicles." Journal of safety research, **55** : [81]-87.

Technologies able to augment human communication, such as smartphones, are increasingly present during all daily activities. Their use while driving, in particular, is of great potential concern, because of the high risk that distraction poses during this activity. Current countermeasures to distraction from phone use are considerably different across countries and not always widely accepted/adopted by the drivers. […] [Résumé de l'auteur]

Esbjornsson, M., et al. (2007). "Drivers Using Mobile Phones in Traffic: An Ethnographic Study of Interactional Adaptation." International Journal of Human-Computer Interaction, **22**(1/2) : 37-58.

Mobile phone use in cars is a highly debated issue. Legislation and policy discussions flourish in many countries and coincide with an increased effort in design of new in-car technologies. The studies that influence policy and design decisions use experimental approaches and are based on a cognitive perspective. This article discusses why this is a problematic approach. Further, the article provides data and initial results from an ethnographic study of mobile phone use in traffic, where the aim is to investigate the "interactional adaptation" by which the driver fit the involvement with the phone with driving and vice versa. By taking part of drivers' daily work and video recording their activities of driving and handling the mobile phone, details are revealed that could not be found in experimental studies with a constructed setup. The article ends with a discussion of the benefits of this method and how it can be developed further. [Résumé de l'auteur]

Kircher, K. (2012). Countermeasures against dangerous use of communication devices while driving : a toolbox. Linköping, Sweden : VTI, 84 p.

This report outlines possible means to reduce the dangerous usage of mobile phones and other communication devices while driving. An important aspect of this commission was to demonstrate alternatives to legislation. The suggested countermeasures cover several areas. One is technical solutions, including countermeasures directed towards the infrastructure, the vehicle and the communication device. Another area includes education and information and describes different ways to increase knowledge and understanding. Furthermore, there are different possibilities for how society can influence the behaviour of individuals, both via bans, recommendations and incentives. The usage of communication devices while driving has both advantages and disadvantages. How to deal with device usage is a complex problem, and it is unlikely that one single countermeasure can provide a complete solution. One countermeasure may even depend on the implementation of others. The exact effect of most countermeasures is hard to predict, and possible side effects may occur. [...] [Résumé de l'auteur]
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Kircher, K., et al. (2011). Mobile telephones and other communication devices and their impact on traffic safety : a review of the literature. Linköping, Sweden : VTI, 56 p.
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Motamedi, S. et W. Jyh-Hone (2016). "The impact of text driving on driving safety." International Journal for Traffic & Transport Engineering, **6**(3) : 325-338.
In an increasingly mobile era, the wide availability of technology for texting and the prevalence of hands-free form have introduced a new safety concern for drivers. To assess this concern, a questionnaire was first deployed online to gain an understanding of drivers' text driving experiences as well as their demographic information. The results from 232 people revealed that the majority of drivers are aware of the associated risks with texting while driving. However, more than one-fourth of them still frequently send or read text messages while driving. In addition to the questionnaire, through the use of a virtual-reality driving simulator, this study examined drivers' driving performance while they were engaged in some forms of text driving under different challenging traffic conditions. Through a blocked factorial experiment, drivers would either read a text message or respond to it with two levels of text complexity while using either hand-held or hands-free texting method. Their driving performance was assessed based on the number of driving violations observed in each scenario. Conclusions regarding the impacts of different forms of texting, text complexity, and response mode on drivers driving performance were drawn. [Résumé de l'auteur]

Organization, W. H. (2011). Mobile phone use : a growing problem of driver distraction. Geneva, Switzerland : World Health Organization, 48 p.
Distracted driving is a serious and growing threat to road safety. With more and more people owning mobile phones, and the rapid introduction of new "in-vehicle" communication systems, this problem is likely to escalate globally in the coming years. This Report focuses on the use of mobile phones while driving as one example of the broader problem of driver distraction. It is now evident that if you are using a mobile phone while driving you are approximately four times more likely to be involved in a crash than a driver who is not using a phone. This risk appears to be similar for both hand-held and hands-free phones, because it is the cognitive distraction that is an issue, not only the physical distraction associated with holding the phone. Text messaging appears to have an even more severe impact on driving behaviour and crash risk. [Résumé de l'éditeur]

Seiler, S. J. (2015). "Hand on the Wheel, Mind on the Mobile: An Analysis of Social Factors Contributing to Texting While Driving." CyberPsychology, Behavior & Social Networking, **18**(2) : 72-78.
In an era defined by social technology, mobile phones provide constant connection to others. However, they also present a very dangerous situation when people choose to use their mobile phones while driving. In particular, exchanging text messages while driving has resulted in numerous accidents and fatalities. The purpose of this study is to examine social factors that lead people to text while

driving. Specifically, using a multivariate logistic regression analysis of data from a 2010 survey by the Pew Research Center, variables for general mobile talk, driving while talking on a mobile, using the Internet on a mobile, sexting, and various motivations for texting were examined to determine factors that increase the likelihood of texting while driving. The findings suggest that people engage in mobile multiplexing (i.e., communication using two or more media on the mobile) while driving. Additionally, exchanging text messages in public, and consequently texting while driving, has become normalized. Furthermore, people are socialized into such behaviors through observing others texting while driving and using a mobile recklessly while driving. Finally, a number of motivations for texting were found to increase the likelihood of texting while driving significantly. Ultimately, the author contends that texting while driving has become a cultural artifact in the United States, which conflicts with driver safety as well as laws prohibiting texting while driving. The findings of this study could inform future awareness campaigns and technology developers to help establish a safer driving environment within the multitasking culture. [Résumé de l'auteur]

Som.ca (2016). Évaluation de la campagne textos 2015 « S.V.P. empêchez-vous. Au volant, on ne texte pas. » : rapport final, présenté à la Société de l'assurance automobile du Québec. Montréal : Som.ca, 112 p.
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Telemague, J. H. R. (2014). The educational, social, and cultural aspects of cellular phone communication while driving. (Thèse de doctorat). University of Pheonix (Arizona, United States) 139 p.
This qualitative research study focused on the problem that there are serious and dangerous consequences in talking and texting on cellular phones while driving of which many individuals take part. The purpose of the study was to explore the lived experiences and perceptions of police officers, driving instructors, and parents of teens and young adults to better understand why talking and texting on cellular phones while driving is so popular The 20 interviews from participants from the northeastern, northwestern, central, and southeastern parts of the state of Connecticut of the United States of America were done by means of a qualitative phenomenological research design method. The data analysis of the research study produced six themes. The resulting themes were (a) education, (b) distraction, (c) technology control, (d) cell phone law, (e) driver education, and (f) invincibility. These themes are the similarities of ideas which resulted from the lived experiences and perceptions of the participants. These discoveries may provide a path for leadership to help solve the problem. Recommendations for leadership and education are provided and are based on results and discoveries of the study. [Résumé de la base de données]

Zhou, R., et al. (2016). "Why Do Drivers Use Mobile Phones While Driving? The Contribution of Compensatory Beliefs." Plos One, **11**(8) : 1-18.

The current study is the first to investigate the contribution of compensatory beliefs (i.e., the belief that the negative effects of an unsafe behavior can be "neutralized" by engaging in another safe behavior; e.g., "I can use a mobile phone now because I will slow down ") on drivers' mobile phone use while driving. The effects of drivers' personal characteristics on compensatory beliefs, mobile phone use and self-regulatory behaviors were also examined. A series of questions were administered to drivers, which included (1) personal measures, (2) scales that measured compensatory beliefs generally in substance use and with regard to driving safety, and (3) questions to measure drivers' previous primary mobile phone usage and corresponding self-regulatory actions. Overall, drivers reported a low likelihood of compensatory beliefs, prior mobile phone use, and a strong frequency of self-regulatory behaviors. Respondents who had a higher tendency toward compensatory beliefs reported more incidents or crash involvement caused by making or answering calls and sending or reading messages. The findings provide strong support for the contribution of compensatory beliefs in predicting mobile phone usage in the context of driving. Compensatory beliefs can explain 41% and 43% of the variance in the active activities of making calls and texting/sending messages compared with 18% and 31% of the variance in the passive activities of answering calls and reading messages. Among the regression models for predicting self-regulatory behaviors at the tactical or operational level, compensatory beliefs emerge as significant predictors only in predicting shorter conversations while on a call. The findings and limitations of the current study are discussed. [Résumé de l'auteur]

ÉVALUATIONS ET ÉTUDES

(2014). Profil détaillé des faits et des statistiques touchant la distraction au volant. [Québec (Province)] : Société de l'assurance automobile du Québec, 21 p.
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Association mondiale de la route. Comité technique conception et exploitation d'infrastructures routières plus sûres. Groupe de travail sur la fatigue et la distraction des conducteurs. (2016). Rôle de l'ingénierie routière dans la lutte contre les risques, pour la sécurité, de la distraction et de la fatigue des conducteurs. La Défense, France : Association mondiale de la route.
L'examen de l'abondance de publications consacrées à la distraction et à la fatigue des conducteurs a permis de constater un accent très poussé sur des stratégies d'éducation du conducteur et d'application de la loi visant à encourager le conducteur à éviter la distraction ou la fatigue au volant. C'est peut-être pourquoi on a également constaté que de nombreuses compétences cherchent à combattre la distraction et la fatigue conducteurs par des campagnes de sensibilisation au risque, l'adoption de règles des (comme l'interdiction d'envoi de messages textes) et l'imposition d'importantes sanctions pour décourager la non-conformité. On a cependant aussi découvert que la distraction et la fatigue des conducteurs sont deux phénomènes indépendants, chacun englobant plusieurs éléments distincts qui peuvent nuire à la sécurité routière de différentes façons. [Résumé de l'éditeur]
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Bingham, C. R. (2015). "Do as I say, not as I do : distracted driving behavior of teens and their parents." Journal of safety research, **55** : [21]-29.
Driver distraction is an important contributor to crash risk. Teenage driver distraction can be influenced by the attitudes and behaviors of parents. This study examined teens' and their parents' engagement in distracting behavior while driving. [Résumé de l'auteur]

Hamilton, B. et J. Grabowski (2013). Cognitive distraction : something to think about : lessons learned from recent studies. Washington DC, AAA Foundation for Traffic Safety, 14 p.
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Kinnear, N. et A. Stevens (2015). The battle for attention : driver distraction : a review of recent research and knowledge. London : Institute of Advanced Motorists, 23 p.
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Kircher, K., et al. (2009). Results of a field study on a driver distraction warning system. Linköping, Sweden : VTI, 96 p.

Léger marketing. (2013). Sondage postcampagne et évaluation des comportements relatifs à la distraction au volant auprès de la population québécoise : rapport d'analyse final, Montréal : Léger Marketing, 124 p.
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Oosthuysen, S. P. (2015). Distracted driving and driver interpretation of short term construction and maintenance work zones in urban environments. (Thèse de maîtrise). University of North Carolina at Charlotte (North Carolina, United States), 129 p.
Previous literature of distracted driving and inattention has found that secondary tasks not associated with the task of driving increase vehicular accidents and near miss accidents. Distracted drivers are comparatively different to non – distracted drivers when driving distracted, because predominant use of mobile devices such as cell phones have hazardous effects on slowed reaction time to roadway hazards, driver decision making process, and speed control. This is concerning to construction entities performing roadway construction and maintenance, because the associated hazards with performing such work becomes intuitively more dangerous for construction workers due to distracted drivers. This study compared motorist's speeds who were determined to be distracted and non – distracted, to differentiate how distracted drivers behaved differently around work zones. […] [Résumé de l'auteur]

TRL, et al. (2015). Study on good practices for reducing road safety risks caused by road user distractions : final report. Luxembourg : Publications Office of the European Union, 193 p.
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