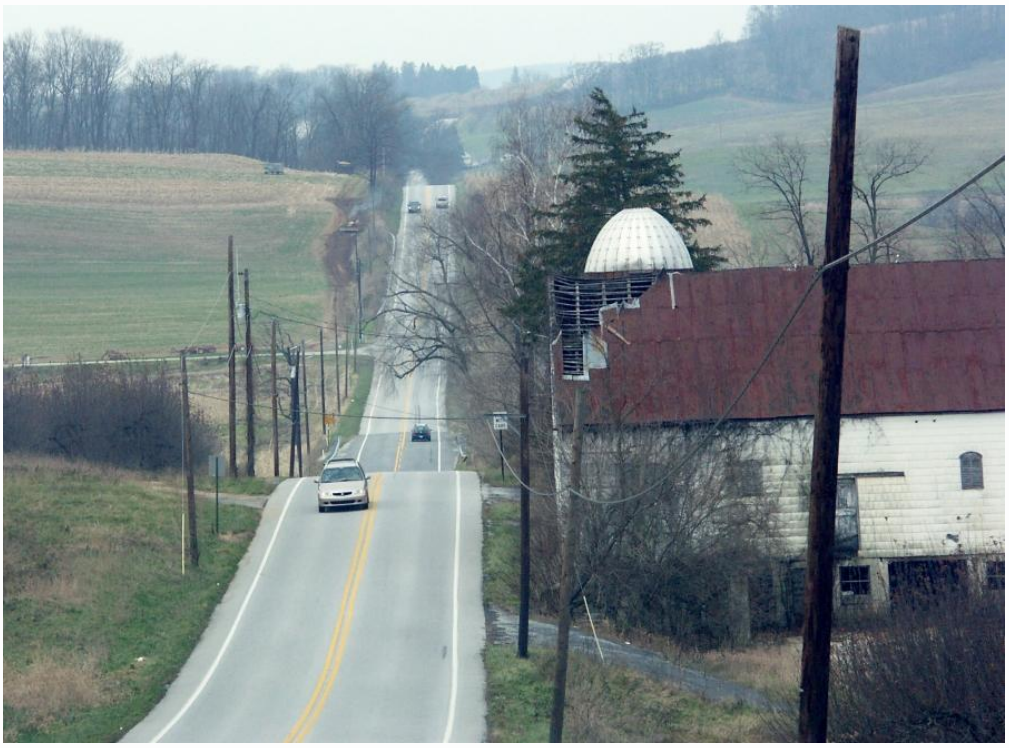
★ ★ ★ ★ Safety Culture

Temporal Trends in Indicators of Traffic Safety Culture among Drivers in the United States

2009 – 2012



August 2013

Car crashes rank among the leading causes of death in the United States.

AAA Foundation for Traffic Safety

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Title

Temporal Trends in Indicators of Traffic Safety Culture among Drivers in the United States, 2009-2012 *(August 2013)*

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About the Sponsor

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Founded in 1947, the AAA Foundation in Washington, D.C. is a not-for-profit, publicly supported charitable research and education organization dedicated to saving lives by preventing traffic crashes and reducing injuries when crashes occur. Funding for this report was provided by voluntary contributions from AAA/CAA and their affiliated motor clubs, from individual members, from AAA-affiliated insurance companies, as well as from other organizations or sources.

Abstract

Since 2008, the AAA Foundation for Traffic Safety has been conducting an annual survey of U.S. residents ages 16 and older to assess key indicators of the country's current traffic safety culture. The survey measures aspects of traffic safety culture that are not available through traditional analyses of crash data: social norms, driving behaviors, attitudes toward crash countermeasures that range from engineering to legislation; and driving behaviors and experience. Findings from this survey have been used to track culture over time and stimulated interest in traffic safety among the media and the public. This article documents that the perceived threat of multiple risky driving behaviors have decreased in recent years, changes in public acceptance of such behaviors have been mixed, and the prevalence of self-reported dangerous driving behaviors have changed little since 2009. These results illustrate how ongoing monitoring provides important insights into where future efforts could be targeted.

Introduction

Background

Since 2006, the AAA Foundation has been sponsoring research aimed at strengthening traffic safety culture in the United States. In 2007, the AAA Foundation published a compendium of articles addressing the concept of traffic safety culture from a variety of perspectives, including public health, engineering, public policy, and social psychology.[1] The AAA Foundation defines traffic safety culture as "a social climate in which traffic safety is highly valued and rigorously pursued."[2]

The traffic safety culture of the United States is reflected by many different types of entities, including but not limited to government agencies, policy makers, the media, and individuals. Our efforts to measure indicators of traffic safety culture were informed by our concept of it being multidimensional, including elements of knowledge and awareness, beliefs and attitudes, experiences and expectations, norms, values, and behaviors that influence traffic safety from the individual level all the way up to the national level.

While measuring an abstract construct like culture is challenging, the Foundation set out to gather information from the public that could reasonably be assumed to represent indicators of traffic safety culture among individuals. In 2008, the AAA Foundation fielded the first annual Traffic Safety Culture Index (TSCI), a telephone survey of a nationally-representative sample of the U.S. population. The goal was to assess key indicators of the degree to which traffic safety is valued and is being pursued at the individual level, over time. Four additional iterations of the survey have been administered, and this report documents the first comparative analysis of the data collected in those surveys.

Objective

The objective of the research reported here is to document indicators of traffic safety culture in the United States as reflected in the AAA Foundation's annual surveys, and to present a descriptive analysis of changes over time in these indicators.

Methods

The data here are from the AAA Foundation's Traffic Safety Culture Index surveys conducted in years 2009 through 2012. Data from the AAA Foundation's first Traffic Safety Culture Index survey, conducted in 2008, are not presented here due to major changes in the design of the survey instrument.

Each year, questionnaires were administered to a representative sample of U.S. residents. In 2009 and 2010, the questionnaire was administered using random-digit dial telephone sampling methods, to a representative sample of individuals residing in households with a landline or cellular telephone. In 2011 and 2012, the questionnaire was administered via the Internet to a random sample of individuals previously recruited via random-digit dial telephone and address-based sampling methods into an Internet-based research panel. To provide coverage of people

[1] AAA Foundation for Traffic Safety. (2007). Improving Traffic Safety Culture in the United States: The Journey Forward. Washington, DC.
[2] Girasek, D.C. (2012). Towards operationalising and measuring Traffic Safety Culture construct. International Journal of Injury Control and Safety Promotion, 19, 37-46.

living in households that did not have Internet access, recruited individuals who lacked Internet access were provided with a netbook computer and Internet connection at no cost. The questionnaire was made available to respondents in both English and Spanish. Full documentation of the methods for each survey is provided in each corresponding report. Core survey items were also administered via the Internet in 2010, using the same methods used subsequently in 2011 and 2012, to assess differences in responses associated with survey mode. Those results are not presented here, but were used to control for differences associated with survey mode when investigating trends over time.

The data were weighted to account for unequal probabilities of selection among respondents and were post-stratified to align the distribution of the sample to that of the United States population with respect to demographic characteristics. All results reported here are based on the weighted data. The precision of estimates varied by year and by individual survey question; however, on average, the 95 percent confidence intervals of estimates reported here were approximately ± 2.5 – 3.0 percentage points.

The survey instrument contained a common core of items that were asked each year in years 2009 through 2012. These items assessed respondents':

- Perceptions of the severity of the threat posed by a range of traffic safety problems (e.g., "How much of a threat to your personal safety are drivers talking on cell phones? Are they a very serious threat, a somewhat serious threat, a minor threat, or not a threat to your personal safety?")

- Social norms regarding various driving behaviors (e.g., "How acceptable do you, personally, consider it to be for a driver to talk on a hands-free cell phone while driving? Do you consider that to be completely acceptable, somewhat acceptable, somewhat unacceptable, or completely unacceptable?")

- Self-reported driving behaviors (e.g., "In the past 30 days, how often have you talked on a cell phone while you were driving? Have you done so regularly, fairly often, rarely, just once, or never?)

- Support or opposition toward several traffic safety measures (e.g., "Do you support or oppose having a law against using any type of cell phone while driving, hand-held or hands-free, for all drivers regardless of their age?")

Results

Distracted Driving

- Most drivers consistently reported that they feel it is completely unacceptable for a driver to send text messages or e-mails while driving, ranging from 81 to 83 percent during the study period (see Figure 1 in Appendix). Notably fewer drivers considered it completely unacceptable to talk on a hand-held cell phone while driving (42-46%), and even fewer respondents reported that talking on a hands-free phone is completely unacceptable (20-28%), though the latter does appear to be slowly increasing over time (Figure 2).

- Drivers' self-reported distraction while driving in the past 30 days is still common considering the lack of acceptance and perceived threats posed by distracted drivers: more than 2/3 of

drivers reported having talked on a cell phone of any kind, 1 in 3 reported reading a text message or e-mail, and 1 in 4 reported typing a text message or e-mail (Figures 1 and 2).

- Most drivers (80-87%) support having a law against reading, typing, or sending a text message or e-mail while driving, as well as a law against using a hand-held cell phone while driving for all drivers (67-71%). Closer to half of survey participants support a law against using any type of cell phone while driving (Figures 1 and 2).

Drinking and Driving

- Throughout the period under study, nearly all drivers reported that it is completely unacceptable for a driver to drive when they think they may have had too much to drink. Some respondents, however, still reported that they drive after drinking: 11-14 percent of the drivers participating in our study reported having driven when they thought their "alcohol level may have been close to or over the legal limit" in the past 12 months (Figure 3).

- The perceived threat of others driving after drinking alcohol has decreased substantially during the study period, from 90 percent in 2009 to 69 percent in 2012 (Figure 3).

- There is a consistently high level of support for a law requiring alcohol ignition interlock for drivers who have been convicted of more than one DWI (88-90%), and a slightly lower level of support for requiring interlocks for all drivers convicted of DWI, when first offenses were included (69-80%) (Figure 3).

Drowsy Driving

- Almost all participants reported that they consider it completely unacceptable to drive when they're so sleepy that they have trouble keeping their eyes open. Nevertheless, more than a quarter of drivers report having done so in the past 30 days (Figure 4).

- The perceived threat of people driving when they're too sleepy has decreased dramatically during the study period: in 2009, 71 percent of drivers reported that this was a very serious threat to their personal safety; by 2012, this had decreased to 46 percent (Figure 4).

Red Light Running

- Each year during the study period, more than 70 percent of drivers stated that they considered it completely unacceptable to drive through a light that had just turned red when they could have stopped safely. Many respondents, however, admit to having done just that in the past 30 days (Figure 5).

- During the study period, the proportion of drivers reporting having run a red light at least once in the past 30 days increased every year, from 29 percent in 2009 to 38 percent in 2012 (Figure 5). However, additional analysis suggests that some of this apparent increase may have been attributable to the change in survey mode.

Speeding

- Each year, more than three quarters of respondents considered it completely unacceptable to drive 15 mph over the speed limit on residential streets. In comparison, much fewer considered it completely unacceptable to drive 15 mph over the speed limit on freeways, and

this lack of acceptance appears to be increasing over time, from 39 percent in 2009 to 46 percent in 2012 (Figure 6).

- Speeding behavior reflects acceptability of speeding: About a quarter of drivers report driving 15 mph over the speed limit on residential streets, and roughly half do so on freeways, though the latter appears to be declining (Figure 6).

- In 2012, the survey investigated driving 10 mph over the speed limit on residential streets (as opposed to 15 mph in previous years), and 47 percent of drivers reported having driven 10+ mph over the speed limit on a residential street in the past 30 days.

Seat Belt Use

- Each year, the majority of drivers reported never having driven without wearing their seatbelt in the 30 days prior to the survey, and rated driving without wearing a seatbelt as completely unacceptable (Figure 7).

Discussion

This report illustrates the use of a survey instrument administered on an annual basis to gauge indicators of traffic safety culture in the United States, a method that has been used by other countries as well as some U.S. states. Survey data has inherent limitations, but the results of four years of the Traffic Safety Culture Index provide valuable information not previously available, and help augment existing observational data.

It is concerning that risk perceptions generally are trending downward, and downward dramatically with regard to drinking and driving and fatigued driving. It is unclear if this is a reflection of a change in perception of the number of drivers under these conditions on the road over time, change in perceptions of the danger posed by each behavior, or both. There is both theoretical[3] and empirical[4,5] evidence linking risk perceptions and risk behaviors.

Aside from changes in perceived threats, most of the characteristics measured by the survey remained steady over the study period. For issues that are not being actively addressed, this is not surprising. However, some issues that have received significant attention during the study period were not paralleled in our results. For example, since 2009 the U.S. Department of Transportation has devoted resources to raise awareness about distracted driving.[6] The survey indicates, however, that the frequency of drivers texting and talking on cell phones while driving is not changing, and drivers are becoming less concerned about drivers text messaging and e-mailing. It is unclear if the latter reflects a change in perception of the danger inherent in texting while driving, a perception that fewer drivers are doing so, or a combination of the two. This applies to all of the perceived threats examined.

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[3] Rimer B.K. (2002). Perspectives on Intrapersonal Theories of Health Behavior. In: Glanz K., Rimer B.K., Lewis F.M.. (Eds.) Health Behavior and Health Education: Theory, Research and Practice (3rd edition), Jossey Bass, San Francisco, CA.

[4] Davey J., Wallace A., Stenson N., Freeman J. (2008). Young drivers at railway crossings: an exploration of risk perceptions and target behaviours of interventions. International Journal of Injury Control and Safety Promotion, 15, 57-64.

[5] Rakauskas M.E., Ward N.J., Gerberich S.G. (2009). Identification of differences between rural and urban safety cultures. Accident Analysis and Prevention, 41, 931-937.

[6] NHTSA, U.S. DOT. Public Awareness Campaigns. Retrieved April 1, 2013 from http://www.distraction.gov/content/dot-action/awareness.html

Our results also illustrate that significant proportions of survey respondents readily admit to carrying out behaviors they characterize as "unacceptable." It may be that "descriptive social norms" (which describe how most people act) are more closely linked with driver behavior than "injunctive social norms" (which indicate what most people approve of).[7]

As interest in Traffic Safety Culture grows, increasing attention is being devoted to its measurement. As one would expect in a newly emerging field of study, different approaches are being applied to this task.[8,9] Of note is the fact that independent investigators, using different methods, have nevertheless found some common trends in their preliminary assessments of traffic safety culture. For example, females and older survey respondents appear to exhibit stronger support for traffic safety.[10, 11] This confirms the Foundation's earlier observations.[12] It may suggest previously untapped allies with whom the traffic safety community might want to collaborate.

It is important to acknowledge that a society's driving safety culture can be assessed in ways other than public surveys. Expenditures, media portrayals, and public policies for example are other types of indicators that reflect how much traffic safety is valued and whether it is being rigorously pursued.

Conclusions

The biggest changes observed over the four-year study period were among perceived threats to personal safety. With the exception of drivers talking on cell phones, survey results indicate that concerns about aggressive, drowsy, and alcohol-impaired driving are decreasing fairly rapidly. This may mean that resources should be devoted to increasing perceived susceptibility to harm from these behavioral indictors of traffic safety culture that appear to be moving in the wrong direction. Since risk perceptions are linked to a number of psychological defense mechanisms that may be difficult to overcome, increased safety legislation and enforcement should also be considered. Such measures have the effect of associating negative consequences with risk behaviors,[13] in the minds of drivers who are not motivated by health warnings.

Future research will be necessary to refine our understanding of how survey assessments of traffic safety culture are linked to factors in the driving environment, crash incidence, and health outcomes.

Dr. Girasek's contribution to this work should not be construed as representing the views of her employer or the U.S. government generally.

[7] Lewis M.A., DeVellis B.M., Sleath B. (2002). Social influence and interpersonal communication in health behavior. In Glanz K., Rimer B.K., Lewis F.M. (Eds) Health Behavior and Health Education: Theory, Research and Practice (3rd ed). Jossey Bass, San Francisco, CA.

[8] Girasek D.C. (2012) Behavioral Determinants. In: Li G, Baker SP (Eds) Injury Research: Theories, Methods and Approaches, Springer, New York, NY.

[9] Rakauskas M.E., Ward N.J., Gerberich S.G. (2009). Identification of differences between rural and urban safety cultures. Accident Analysis and Prevention, 41, 931-937.

[10] Rakauskas M.E. Ward N.J., Gerberich S.G., Alexander B.H. (2007). Rural and Urban Safety Culture: Human-Centered Interventions Toward Zero Deaths in Rural Minnesota. Minnesota Department of Transportation Report #2007-41.

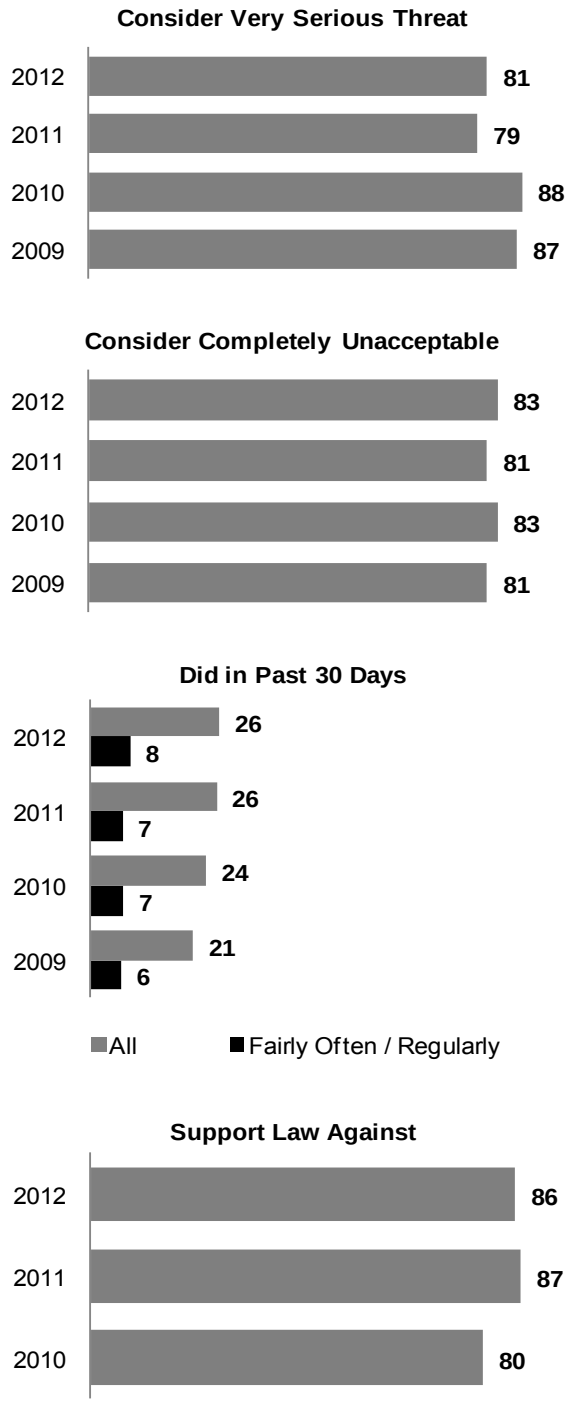
[11] Girasek D.C. (2013) Gauging popular support for traffic safety in the United States. Accident Analysis and Prevention, 50, 1112-7.

[12] AAA Foundation for Traffic Safety. (2013). 2012 Traffic Safety Culture Index. Washington, DC.

[13] Gielen, A.C., Girasek, D.C. (2001). Integrating perspectives on the prevention of unintentional injuries. In: Schneiderman J., Gentry J.M., deSilva M., Speers M., Fomes H. (Eds.) Integrating behavioral and social sciences with public health. APA Books, Washington, DC.

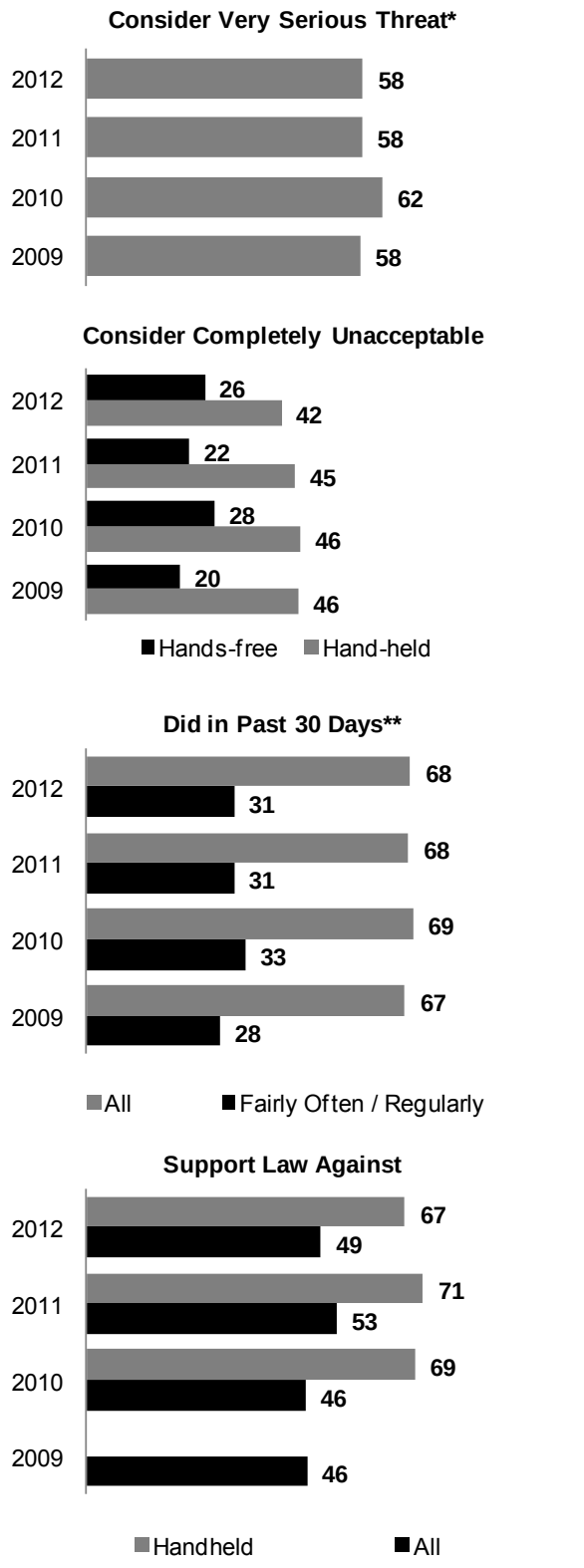
Appendix

Figure 1. Text/Email while Driving



*Drivers text messaging or emailing
**Prior to 2011, the question referred to "sending" text messages or emails while driving. Beginning in 2011, "sending" was replaced with "typing."
***Prior to 2011, the question referred to "reading or sending" a text message or email while driving. Beginning in 2011, "reading or sending" was replaced with "typing or sending."
****Reading, typing, or sending a text message or email while driving.

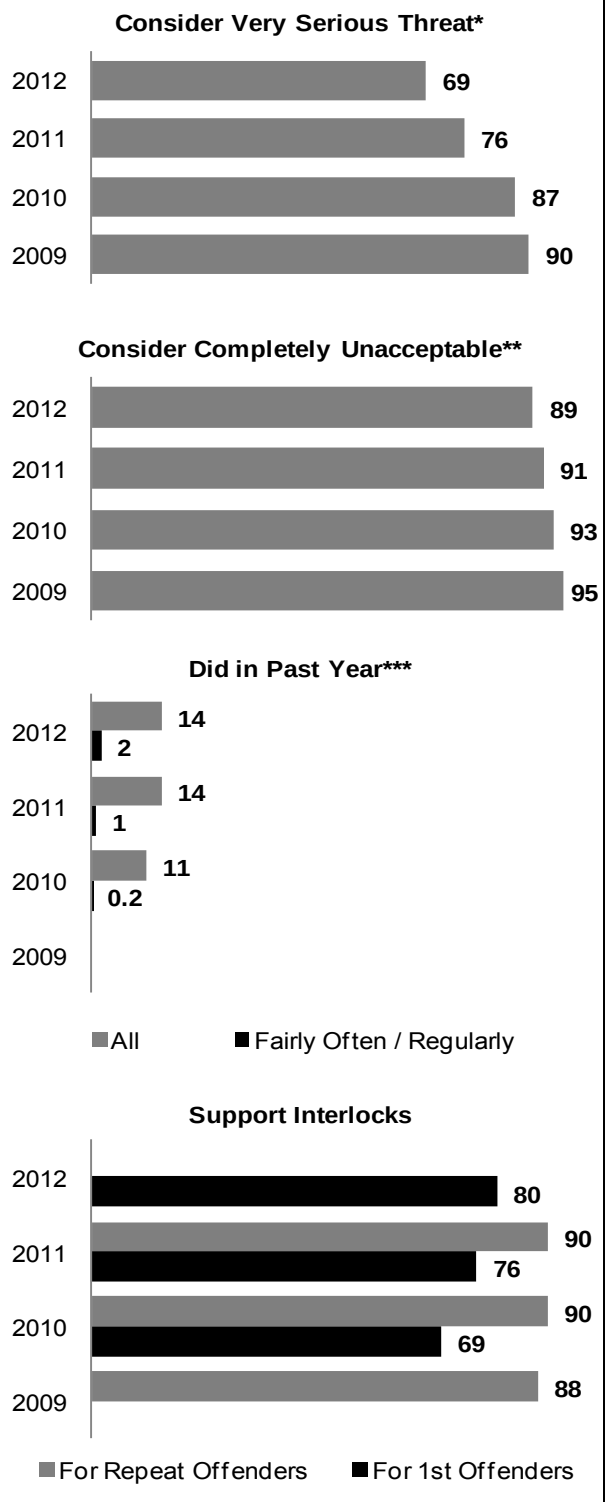
Figure 2. Cell Phone Use while Driving



*Drivers talking on cell phones
**Talked on a cell phone (handheld, hands-free, etc.)

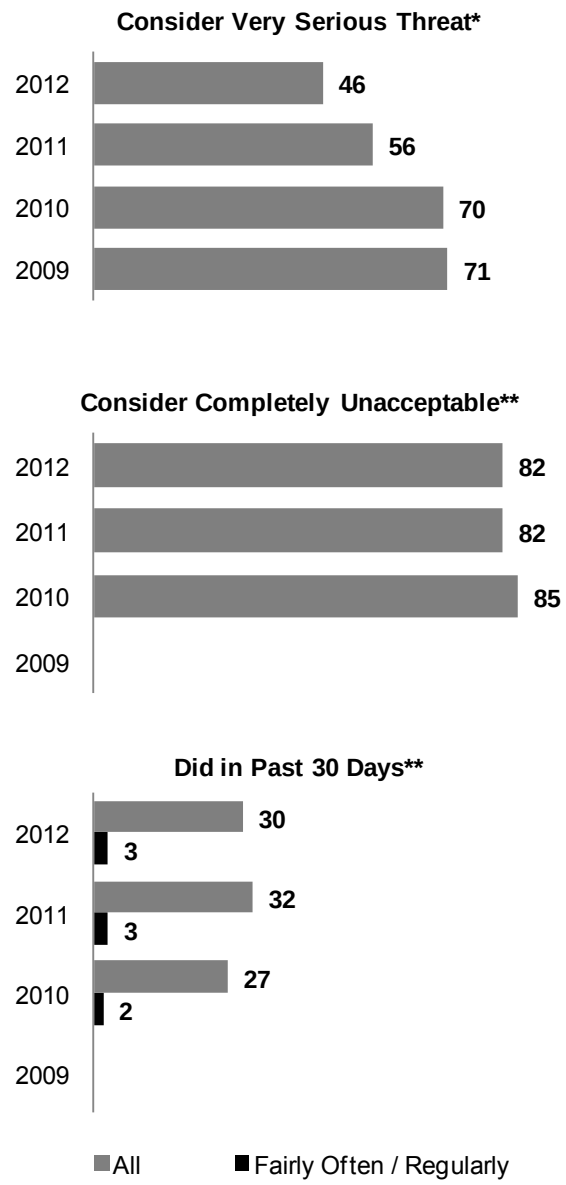
Appendix

Figure 3. Driving after Drinking



* People driving after drinking alcohol
** Driving when one thinks one may have had too much to drink.
*** Driven when one thought one's alcohol level might have been close to or possibly over the legal limit.

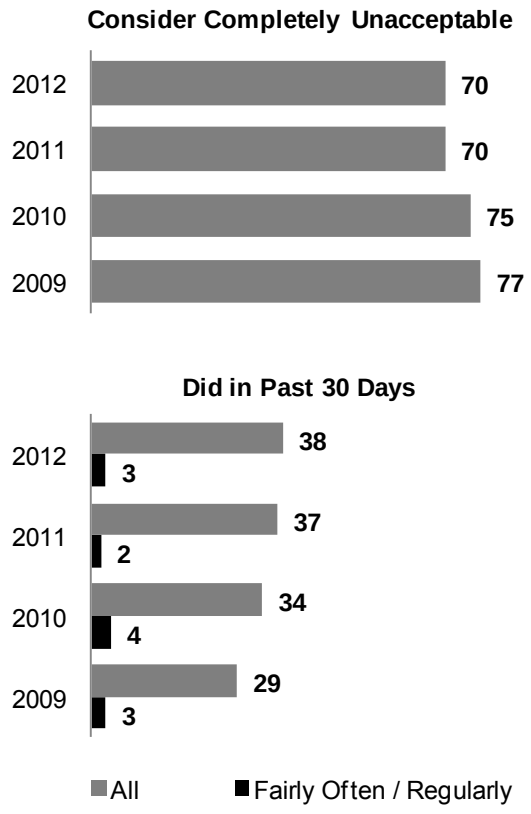
Figure 4. Drowsy Driving



*Sleepy drivers
**Drive when so sleepy that one has trouble keeping their eyes open

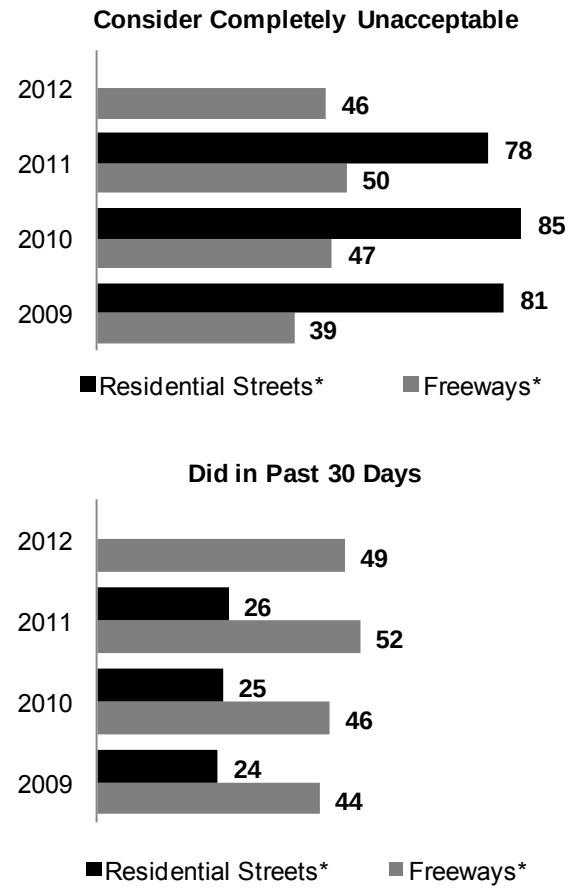
Appendix

Figure 5. Red Light Running*



*Driving through a red light when one could have stopped safely

Figure 6. Speeding



*15 mph hour or more over the speed limit

Appendix

Figure 7. Driving without Wearing a Seat Belt