

The Pursuit of True Liability

Not So Autonomous

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Autonomous cars are also known as driverless cars, self-driving cars, smart cars, connected cars, or robotic cars. U.S. and foreign auto makers have already produced prototypes and mass production will be introduced and marketed to consumers in the near future. As of the end of 2013, four U.S. states had passed laws permitting autonomous cars to be tested and operate on their roadways. Nevada was the first, followed by Florida, California, and then Michigan.

As more states prepare for these open-road futuristic technologies to dominate our daily commutes there will be increasing concerns for risks far beyond the dashboard warnings, auto braking systems, GPS devices, stereo cameras, radar detectors, ranging laser tracking devices, and sensors that detect red or green lights in hi-tech automobiles. Autonomous vehicles will inevitably open up new avenues and alleys of risks for insurers, risk managers and consumers alike across America.

Underwriters and analysts will be perplexed with possibilities that have no historical data for comparison. Donald Light, a Senior Analyst with Celent's Insurance Group, reminds insurance companies they should be asking themselves three questions: "First, how is it (the insurer) monitoring technology-driven changes in insured losses? Second, do scenario technologies provide new kinds of data and analytics-driven changes in pricing, underwriting, etc.? And third, what should it (the insurer) do differently this year and next? In the longer term, insurers with a significant amount of auto business have to grapple with some very challenging enterprise strategy issues" (Light, 2012).

The administration of President Obama intends to require auto manufactures to include a wireless vehicle to vehicle (V2V) technology that enables vehicles to communicate with each other. The Department of Transportation (DOT) hopes to have new regulations in place for V2V by the end of President Obama's term in 2016. According to an ABC World News report, aired on February 3, 2014, the "V2V wireless technology would alert drivers of 'imminent crash situations,' using a communication beacon that emits a safety message analyzing vehicle speed, direction and relative position 10 times per second" (Kerley & Mallin, 2014).

In a recent study, the Government Accountability Office (GAO) found that the V2V technology has advantages and disadvantages. On the plus side, it may provide warnings to drivers in 76 percent of potential multi-vehicle collisions. But, according to David Wise, director of the GAO's Physical Infrastructure Team, "Widespread technology depends on other cars having the same system so they can talk to each other." On the negative side, Mark Mooney, a reporter for ABC World News, stated that Wise also has concerns with privacy issues as V2V will likely rely on GPS-type data that could track a person's movements. "Who has access and how do you secure the data?" Wise asked rhetorically. Another concern for the American people that Wise mentions is "someone hacking the system and causing havoc on the road" (Mooney, 2014).

The ability to determine potential for risk and the assumption of liability will not be such an 'autonomous' task for property and casualty insurers nor for the courts of law when autonomous cars operate in all 50 states. Who will be liable if a smart-car is involved in a collision? Who will ensure security of personal data? How will insurers and governments

indemnify the cyber-hacked catastrophe victims? “No matter how you feel about this topic, the question is, what are you doing to prepare for this possibility?” said Laura J. Hay, national insurance practice leader with KPMG (McDonald, 2013).

The Obama administration, Apple, Blackberry, Google, Microsoft, automakers, various branches of state and federal government, and insurers believe that auto related deaths will significantly be reduced by the installation of smart car technologies in the years to come. “As we look to the future,” said Anthony Fox, U.S. Transportation Secretary, “we must focus our efforts to tackle persistent and emerging issues that threaten the safety of motorists, cyclists, and pedestrians across the nation” (National Highway Traffic Safety Administration, 2013).

According to the National Highway Traffic Safety Administration’s 2012 Fatality Analysis Reporting System (FARS) press release, dated November 14, 2013, there were 33,561 highway deaths in 2012. The 2012 death totals had increased by 1,082 deaths from their 2011 report. They indicated that 72 percent of the increased total involved pedestrians and motorcycles. This was the first increase in highway fatalities since 2005 and the fatalities for 2011 were the lowest since 1949 (National Highway Traffic Safety Administration, 2013).

Another key statistic included in the FARS press release was a category for ‘distracted-affected crashes.’ Texting and driving has become a serious public safety issue and is prohibited in 41 states. New laws and ways to enforce the ban on texting and driving are continuing to evolve. “New Jersey has been at the forefront of texting while driving regulations making the act punishable by up to 10 years in prison and fines up to \$150,000 for anyone who causes an

injury” (Master, 2013). There have been considerations of implicating a sender of text in personal injury law cases if the sender knowingly does so while the receiver is driving.

Since ‘distracted-affected crashes’ continue to increase in their contribution to the FARS totals we have seen more public awareness of this public safety issue. There were an estimated 421,000 people injured in 2012 and 3,328 killed from ‘distracted-affected crashes.’ The NHTSA Ad Council has been campaigning to make our roads safer by placing signs along the highways such as: *Click-it or Ticket*, *Drive Sober or Be Pulled Over*, and *Don’t Text and Drive*, to name a few. Some insurers advertise their offers of rewards to their customers for safe driving habits. There are apps available for I-phones and Android phones that can prevent them from receiving or responding to text while the vehicle is in motion -- if the vehicle is capable and compatible.

Unfortunately, not all drivers will heed those warnings nor take advantage of incentives or use available technology. The Virginia Tech Transportation Institute (VTTI) conducted texting and driving studies and shared their findings with the NHTSA. A few of their conclusions can be found on the Facts and Tips page hosted on the NHTSA website. One of their facts says that when traveling at 55mph and a driver’s eyes are distracted by texting for five seconds that is enough time to cover the length of a football field. (Ad Council, 2012)

In 2013, the VTTI took their texting and driving studies a mile further. The VTTI found that visual-manual tasks such as: searching and reaching for a mobile phone, text messaging, browsing and dialing resulted in the longest duration of drivers taking their eyes off the road. According to their tests, they determined “text messaging increased the risk of a crash or near-

crash by two times and resulted in drivers taking their eyes off the road for an average of 23 seconds total” (Fitch, et al., 2013).

Currently, the NHTSA is trying to improve the way they capture distracted-affected crash information and better quantify the data. As the smart-phone compatible autonomous cars merge onto the highways with the non-autonomous automobiles, motorcycles, cyclists, and pedestrians, whether traveling at 10mph or 55mph, we will see increases in ‘distracted-affected crashes.’

Perhaps the distractor will be found liable in future distracted-affected crashes. But who will determine what will be a liable cause of the distraction? How will insurers provide coverage for those variables? “It will take court decisions to sort through the legal morass of driverless car liability,” said Loretta Worters, vice president of communications with the Insurance Information Institute. “If driverless cars become more of a reality, insurers will need to create a new auto insurance product,” suggested Worters (McDonald, 2013).

Liability disputes could become high-profile cases. Personal injury attorneys investigating injury or fatality cases may also seek judgment against Apple, Blackberry, Google, Microsoft, car manufacturers, computer manufacturers, collectors of data, or even the sender of a text instead of the driver. As was announced on February 3, 2014, President Obama will be requiring automakers to manufacture vehicles with advanced artificial intelligence. Does this mean that federal and state entities may also be implicated in law suits?

The autonomous cars will be navigating our highways using federal mandated requirements on auto manufacturers to include specified technology and complex computer

programs. “What if systems go down and cause an accident?” noted Worter (Chordas, 2013). Light points out, “If, for example, a driverless car hits a poorly-marked roadwork barrier, the city has an obligation to inform all robot car information systems about that barrier and roadwork. If not, the city may be held liable” (Chordas, 2013).

Our nation’s infrastructure and environment will be critical factors in how safely an autonomous car can maneuver and communicate wirelessly with the devices that drive them. Caroline McDonald, senior editor of Risk Management magazine, draws attention to aging and obsolete infrastructure in the United States. McDonald’s article said that the Federal Highway Administration (FHA) estimates it needs \$20.5 billion annually to eliminate the nation’s backlog of bridge repairs by 2028 (McDonald, A Bridge Too Far: Repairing America's Aging Infrastructure, 2014).

Unfortunately for tax payers, the FHA’s bridge repair estimate did not include the costs for the needed updates and repairs to the existing roadways leading up to these bridges. It did not include calculations for cost and installation of the traffic light sensors that will signal the autonomous car to go or to stop. The railroad crossings will also have to be equipped with communication devices. All of the current highway signs will have to be modified to inform these cars of their meanings as well. So, can these autonomous cars interact safely with the current state of our infrastructure? Will the visual-manual task oriented gadgets and gizmo manufactured in these vehicles cause more distracted-affected crashes?

It is probable that the environment the autonomous vehicles will be exposed to will pose further issues to be considered by property and casualty insurers. The vice president of

Industry Relations at Mitchell International, Greg Horn, pointed out that accident avoidance technology currently in use has not reduced the number of accidents and fatalities. Horn alludes that backup cameras and blind-spot warnings are ‘far-from-foolproof’ and ‘fraught with annoying false alarms.’ He said, “The cameras often are in areas that are susceptible to road grime, which reduces clarity of the image delivered” (Horn, 2013). Horn contends that cleanliness of scanners and cameras is of utmost importance for the systems to work properly. “And, the angle of the sun shining on the sensors can cause systems to fail,” added Horn (Horn, 2013). Subsequently, if environmental conditions effect how efficiently safety devices work on autos will it not also create concerns for sensors used along the roads they will travel?

Undoubtedly, there are pros and cons for driverless vehicles and with the technologies that “drive” them. The NHTSA established an official classification system to identify vehicles by their level of autonomy, as shown in Figure 1 below.

Figure 1

<b>Level</b>	<b>Description</b>
<b>0</b>	The driver completely controls the vehicle at all times.
<b>1</b>	Individual vehicle controls are automated, such as electronic stability control or automatic braking
<b>2</b>	At least two controls can be automated in unison, such as adaptive cruise control in combination with lane keeping.
<b>3</b>	The driver can fully cede control of all safety-critical functions in certain conditions. The car senses when conditions require the driver to retake control and provides a sufficiently comfortable transition time for the driver to do so.
<b>4</b>	The vehicle performs all safety-critical functions for the entire trip, with the driver not expected to control the vehicle at any time. This can include unoccupied cars.



In addition to the pros and cons of how well the autonomous car will function within our infrastructure, there are security and personal data risks. In light of the 2013 holiday season's security breaches at some of the nation's largest retailers, consumers were once again warned of the vulnerability of their personal and financial data. "According to the DOT, the V2V technology wouldn't compromise personal privacy because the data-gathering process doesn't involve the exchanging or recording of personal information" (Kerley & Mallin, 2014).

However, Wise pointed out that V2V connections are wireless. They will rely on GPS-type data and that tracks a person's location (Mooney, 2014). Public Wi-Fi is not a secure connection and those who use it make their information available to anyone interested in it. Facebook, Google, LinkedIn, Twitter, Blogs, etc... already provide useful information for criminals to use; including dates and times when a potential victim will be away from their home or office. The smart car paired with smart phone technology will give a criminal an added advantage. They will be able to receive their intended victim's exact location and received updates every 10 seconds of their status. This will open the doors, so to speak, for more home and commercial property invasions and a greater risk of loss for property and casualty insurers. Especially if the smart phone in the smart car can provide them with their security codes as well.

"Connected (a.k.a. autonomous) cars can dramatically improve the driving experience, but companies must be responsible in their use of consumer information," said Bob Darbelnet, President and CEO of AAA (Green, 2014). AAA supported NHTSA's proposal in 2012 to mandate Event Data Recorders (EDR), aka Black Box, on all new light vehicles manufactured on or after

September 1, 2014 --as long as the motorist's privacy will be protected. Darbelnet stated, "AAA looks forward to working with NHTSA and Congress to ensure strong privacy protections for motorists" (Green, AAA Urges Privacy Protections For Automobile "Black Boxes", 2012).

Currently, about 91 percent of the latest models of vehicles on the road have an EDR and their only mention is a notation in the owner's manual. "All auto manufacturers should be required to prominently disclose the existence of EDR devices on new vehicles, not just with a sentence in the owner's manual." declared Darbelnet (Green, AAA Urges Privacy Protections For Automobile "Black Boxes", 2012).

Darbelnet is a public advocate for motorists and protecting their rights. He said, "Congress needs to ensure motorist rights are protected by passing legislation that prohibits access to data without permission from the owner or from a court order, unless the data is used for research purposes and cannot be tracked to a single vehicle" (Green, AAA Urges Privacy Protections For Automobile "Black Boxes", 2012). Some of the data that has been harvested from various automobiles equipped with an EDRs has been useful to insurers and law enforcement to investigate injury and fatality crashes.

In spite of useful statistical data, there are greater concerns with the protection of private information that is also collected by an EDR and other collective devices. On February 3, 2014 Darbelnet applauded President Obama's public announcement of V2V communication technologies that aired on ABC News. However, he warns, "We look forward to continuing to work with the U.S. DOT, NHTSA and other stakeholders to ensure that the safety benefits of this technology are fully realized and that consumers remain top-of-mind as cars become

increasingly connected” (Green, AAA Applauds U.S. Dot Vehicle-To-Vehicle Announcement, 2014).

AAA recently introduced its “Consumer Rights for Car Data” it covers three broad topics of transparency, choice, and security. The AAA Consumer Rights for Car Data states that:

- Consumers have a right to clearly understand what information is being collected from their vehicle and how it is being used.
- Consumers have a right to decide with whom to share their data and for what purpose. This includes ongoing monitoring systems, repair and any data of the vehicle owner’s choice. Customers should not be forced to relinquish control as a condition of purchasing or leasing a vehicle or of receiving a connected-vehicle service.
- Consumers have a right to expect that connected-vehicle manufacturers and service providers will use reasonable measures to protect vehicle data systems and services against unauthorized access and misuse.

Although, Apple, Blackberry, Google, Microsoft, domestic and foreign auto manufacturers, insurers, and federal and state legislators foresee a future of “hands-free” and “driverless” cars taking over our nation’s highways, there will be many who do not. The various NHTSA classifications of vehicles, as shown in Figure 1, will have to share the open road with the Level 0 class (those who prefer their hands gripping handlebars or perched at 10 and 2 on a steering wheel.) The drivers at Level 0 want sole control over their vehicles and their personal data as they cruise along the United States Highways.

Level 0 includes the motorcycle riders, classic car owners, non-autonomous vehicle operators, cyclists, and their passengers who ride and drive for the enjoyment of two, three, four, or more wheels that cruise and tour across the United States. For this classification level, it's about the hi-tech-free experience and no "hands-free" or "driverless" vehicle will be their preferred choice.

Personal navigation and safety, and especially safety from others sharing routes, are concerns for those who straddle the seat or belly up to a steering wheel. A Harley-Davidson motorcycle passenger, Ann Blair Uhde said, "The passenger is an extension of the driver. When she rides along with a group, she becomes the spare set of eyes, ears, hands, and an extra brain to help with navigation. In these high-tech times, a passenger on a long trip can access a Blackberry, program a GPS, and manage reservations in transit; everything that can be done to make life easier for the driver, on whom your life depends" (Uhde, 2013).

Motorcycles, classic and non-autonomous cars, cyclists, and pedestrians have been reshaping and paving the trails and pathways that our ancestors first trotted over after the introduction of the Spanish horse in the 1500's. An improvement to the old wagon trails were deemed necessary in the 1800's to open up the pathway for the bicycle. When the popularity of the bicycle spread, the bicyclists and the bicycle manufacturers foresaw a need for better roads. They formed the League of American Wheelman and published a magazine titled "Good Roads" to promote a system of good roads (Varner, 2006). The popularity of American motorcycles and automobiles manufactured in the late 1800's created more traffic to share the old trails and roads with the horse and bicycle. Those yester-year technological advances

created a need for infrastructure to connect states and insurance policies to cover their liabilities. Today, the autonomous car is creating a need to connect the cars with the infrastructure and new insurance policies to cover their liabilities.

A Level 0 driver, Gilbert J. Loomis, was credited in 1897, as the first person to purchase an auto insurance policy. Dayton, Ohio has been created as the first state to sell such a policy. The policy covered Mr. Loomis if his auto were to damage property or injured or killed an individual (Who Invented Car Insurance). It is not clear whether the first insurer had any statistical data to base their premium upon or how the loss payee(s) would have been indemnified. Since then, auto insuring companies have been able to reasonably anticipate risks, plan, price, and provide coverage for their insured – the Level 0 ones.

Evolving artificial intelligence and advanced technologies of autos classed Level 1 and higher will restructure how the insurance industry evaluates the coverage they will provide. James Whittle, assistant general counsel and chief claims counsel for the American Insurance Association, said, “Everything in our industry is about experience, so insurers will be looking very closely at experience with these kinds of vehicles and whether it will prove to be a positive or negative. Only time will tell” (Chordas, 2013).

We have been forewarned that there is a gale of technology blowing in quick and encompassing. This driving technology, figuratively and literally, has the potential to leave behind overwhelming effects. Even if those effects are not as threatening as a terroristic attack they can potentially be as devastating to our country. Our information has been collected,

compiled, organized and it is permanently out there on the internet. It is accessible. Our data can be accessed for the greater good, but it can also be accessed for the bad – the really bad.

“You are being watched. The government has a secret system: a machine that spies on you every hour of every day. I know because I built it. I designed the machine to detect acts of terror, but it sees everything... We work in secret. You’ll never find us, but victim or perpetrator, if your number’s up, we’ll find you.” This is part of the voice over for the character Harold Finch, played by Michael Emerson, for CBS television series “Persons of Interest.” It is an American Crime Drama created by Jonathan Nolan, (2011- ). The secret system is known throughout the series as ‘the machine.’ It collects and uses enormous amounts of data and uses extremely advanced surveillance technology.

The voice over that opens the series “Person of Interest” has been included to remind ourselves that we are more than a number. Our personal information and our activities are ours. We need to feel secure and safe and actually be secure and safe. Property and casualty insurers and the courts of law can indemnify for most material items and monetary losses. Unfortunately, we cannot be indemnified for our exposed or stolen information specific to our persons. ‘The machine’ must be protected at all times. If the machine gets into the wrong hands the country and world would never be the same.

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