



A billboard in Sarasota, Fla. (Scenic America)

Digital billboards clearly catch the eye of passing motorists. But what is also increasingly clear is that such distractions can heighten safety risks in heavy traffic and other complex driving conditions, a long-time roadway researcher says.

That conclusion by Jerry Wachtel, a traffic safety consultant and one-time Federal Highway Administration staffer, came from his [recent review of billboard distraction studies](#) conducted everywhere from Denmark to South Dakota.

The latest research, Wachtel says, provides persuasive evidence that billboards – particularly digital billboards — take drivers’ eyes off the road for dangerously long gazes. That’s a problem especially when the bright electronic displays change messages, which typically happens every six to eight seconds.

As Wachtel put it, “The more that commercial digital signs succeed in attracting the attention of motorists that render them a worthwhile investment for owners and advertisers, the more they represent a threat to safety along our busiest streets and highways.”

For his new assessment of the safety hazards raised by billboards, the Berkeley, Calif.,-based consultant evaluated nine academic, industry and government studies published in five countries since 2013. Among them was [a Massachusetts study](#) published this year that found that motorists, particularly older ones, seemed prone to glancing at digital billboards as they changed messages. All told, the study said, when people drive by digital displays, they spend “an increased percentage of time glancing off road.”

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Separate, [government-funded research](#) last year on the impact of 18 digital billboards along high-speed roadways in Alabama and Florida found crash rates 25 percent to 29 percent higher near the

signs than at control sites down the road. Many of the crashes near digital displays involved rear-end collisions or sideswipes that, according to Wachtel, are “typical of driver distraction.”

### **Spread of Digital Billboards**

Some recent studies have focused on distractions caused by the brightness or the swift, relentless cycling of the digital ads — and on how such factors may have a stronger impact on new drivers and older drivers.

The Outdoor Advertising Association of America estimates that there are 6,400 digital billboards nationwide, up from 6,100 last summer. Steady growth has occurred despite opposition from some community activists and legal efforts by cities such as Los Angeles to limit or ban them.



Jerry Wachtel

For the advertising industry, digital billboards are a compelling option. A study commissioned by the OAAA last year showed that more than half the travelers surveyed who noticed a digital sign were “highly engaged, recalling the message on the screen every time or most of the time.”

This year’s Massachusetts study, which included participation by MIT, made a similar point. “It is likely that drivers find it nearly impossible to avoid a glance to digital billboards during switches between advertisements,” the report stated. “Perhaps the fact that humans are neurophysiologically predisposed to orient to motion or sudden change in the periphery is a marketing advantage of digital billboards.”

While that might be good news for advertisers, it also suggests that motorists were focused on something other than driving safely. Asked for comment on Wachtel’s findings, the OAAA cited a federal study released in 2013 that concluded that digital billboards were not distracting. “As FHWA prepared for in-the-field research,” the OAAA stated via email, “it indicated that more research would follow if the initial research identified problems. The agency says it does not plan further research.”

The FHWA did not respond to repeated requests for a comment for this story.

But as FairWarning has reported ([here](#) and [here](#)), the federal study was controversial. It was hung up for several years due to flaws in measuring drivers’ glances at billboards. Even after the study was released, it puzzled Wachtel and other reviewers; somehow billboards that were on one side of the highway in a draft version of the report were depicted as being on the other side of the road in the final version.

### **Higher Crash Risks**

Among other things, the federal assessment said the longest recorded glance at an electronic billboard was 1.34 seconds. That contrasted with [a 2013 Danish report](#) included in Wachtel’s recent review.



The Danish study — which employed high-tech equipment, including a laser scanner and an eye-tracking system — reported glance durations of two seconds or longer in nearly 25 percent of cases. “Advertising signs do capture drivers’ attention to the extent that it impacts road safety,” the study’s authors concluded. According to Wachtel and other experts, glances of two seconds or longer make a crucial difference in safety in bad weather, heavy traffic and other circumstances.

What’s more, the Danish study included only conventional signs, and Wachtel says digital signs probably would draw even more long glances.

In the last three years, according to Wachtel’s new review, only the federal report and a Texas study prepared for the billboard industry failed to demonstrate links between digital signs and potential safety risks.

Wachtel’s concerns about digital billboards drew support from Mary Tracy, president of Scenic America, a non-profit organization that has long been critical of highway billboards on aesthetic grounds. She said the recent studies reviewed by Wachtel “prove pretty conclusively” that digital billboards distract drivers and that the federal government should take action to improve safety.

For Wachtel, president of The Veridian Group consulting firm, the new review is the third in a series of assessments he has produced since 2009. The reviews have been based on, overall, more than 60 research reports around the world on conventional and electronic billboards. Even after all of those studies, Wachtel said, “we can’t say statistically that the billboards cause accidents” unless further complicated and expensive research is carried out.

Still, he said, evidence is mounting that the risk of accidents increases in stressful driving conditions in places where digital signs “competed for the driver’s visual attention.” Factors that can have an impact, Wachtel said, include “demanding road, traffic and weather conditions, when travel speeds were higher, or when an unanticipated event or action occurred to which the driver had to respond quickly and correctly.”

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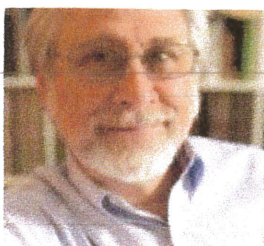


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# Driven to Distraction: The Absurdity of Roadside Digital Billboards

07/07/2014 06:38 pm ET | Updated Dec 06, 2017



Photo: Stephen G. Webster

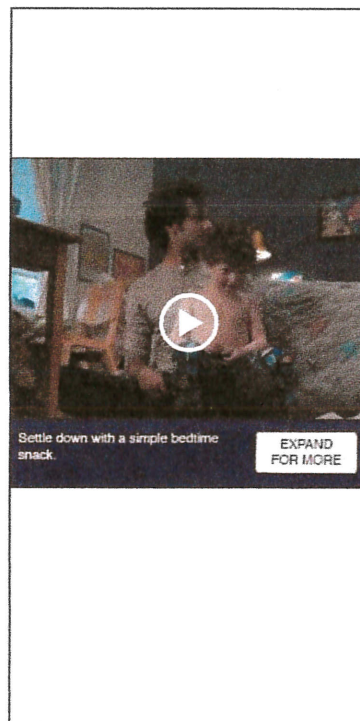
Lung Cancer and automobile accidents are two of the leading causes of avoidable deaths in North America. In response, all levels of governments have introduced legislation, fines and public education programs designed to minimize risk and save lives.

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Anyone over the age of 30 remembers a time when restaurants and airplanes were filled with cigarette smoke. But starting in the 1980s, regulations to reduce second-hand smoke exposure were slowly introduced eventually banning smoking in bars, hospitals, airports, workplaces, etc.

To increase road safety we have speed traps, photo radar, traffic calming measures, breathalyzers, stronger penalties for street racing, etc. More recently, the focus has shifted to reducing driver distraction. After all, most accidents are not caused by alcohol or speeding, but by distracted drivers. The US National Highway Traffic Safety Administration states that even a two second distraction "significantly increases individual crash risk." Every year, governments across North America are bringing in new legislation and increased fines related to driver distractions.

There is no way to measure the precise impact of these initiatives, but there is little doubt that they have collectively saved thousands of lives. Public acceptance and support of these measures is nearly universal. At this point, it would be laughable to suggest that we re-introduce smoking in restaurants, or that we should allow people to text while they drive.

But there is one exception, one glaring anomaly that contradicts all other measures and efforts that have been made to save lives on our roads. That anomaly is roadside billboards. And in particular, digital billboards.

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The outdoor advertising industry has one singular goal: to get your attention. For a hundred years we've had billboards scattered across our cities shouting out their messages about new cars, jeans, fast food and the latest television shows. But billboards only work if you notice them. So, increasingly, they are getting bigger and brighter in an effort to distract a larger audience. The newest innovation is digital billboards which display a new advertisement every ten seconds — flashing thousands of times each day.

The human eye is hard-wired to look at bright, moving or flashing objects. It's an evolutionary feature that protects all animals from potential threats. When something moves quickly, your eyes automatically look towards it.

There are two sets of data related to digital signage and road safety. One is driver distraction and the other is collisions. The first category gives us very clear conclusions. Almost every study that's been done shows a direct causal relationship between digital signage and driver distraction. This is no surprise, since the purpose of these signs is to distract drivers! When it comes to collision data, however, we get inconsistent results. Some studies show a significant increase in collisions while others show little or no change at all. Experts blame this inconsistency on the fact that the collision data itself is often inaccurate or incomplete due to lack of proper reporting, and because so many other external variables are involved.

Lobbyists for the billboard industry have taken advantage of this inconclusive data, for collisions, and twisted it into an argument that digital signage is therefore safe for drivers. This is a terrible distortion of the truth, and a distortion that puts human lives at risk.

If we know that flashing digital billboards are guaranteed to increase distraction, and we know that driver distraction is the number one cause of traffic fatalities... then why would we even consider placing commercial digital billboards on highways?

The precautionary principle argues that we have a social responsibility to protect the public from exposure to harm when scientific evidence has found a plausible risk. This alone should lead every jurisdiction to implement an immediate ban on outdoor digital advertising.

Let's not make the same mistakes we did about smoking. The first suggestion that cancer was related to smoking was in 1912, followed seventeen years later by the first statistical evidence of a lung cancer-tobacco link. The first Surgeon General report stating the health risks of second-hand smoke appeared in 1972, but due to industry lobbying it took more than twenty years before smoking was fully banned in bars, airplanes and workplaces.

These days, we laugh at how absurd it was to allow smoking in restaurants, decades after we knew about the risks. And I have no doubt that one day, twenty years from now, we'll look back at this time and laugh at the absurdity of allowing bright digital billboards to be installed along highways and near urban traffic flow, designed explicitly with the sole purpose of intentionally distracting drivers.

New proposals are being submitted by the billboard industry every month, for increased digital signage on North American highways. And community groups are fighting back.

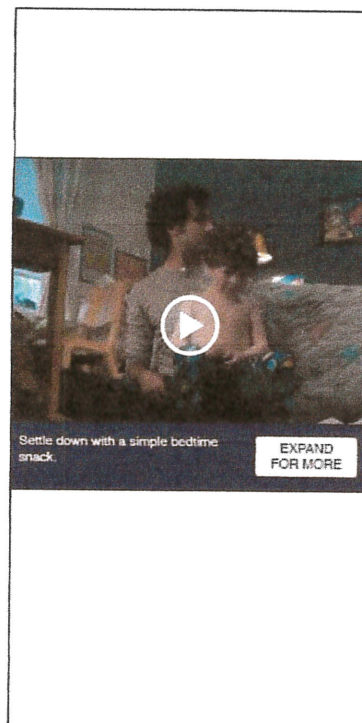
Today's politicians need to decide what side of history they want to be on. Do they want to help enable the growing corporate denialism of the outdoor advertising industry? Or do they want to be remembered as the ones who stood up to protect public spaces and save lives?

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