A strategy that would cut roadway casualty rates in half at specific sites may be a planner's dream, especially since conventional measures reduce the number killed and injured by a reported five percent.

According to the National Highway Traffic Safety Administration, in 2009:
- Traffic accidents killed 34,000 people.
- About 2.2 million people were injured in 5.9 million collisions.
- Four million collisions involved property damage alone.
- The gross economic loss per death or injury averages $1 million.

As an architect and professional planner, I have long recognized the power of "hidden persuaders"—that is, using subliminal cues to change behavior. In his best-selling 1957 book of that name, Vance Packard, the late author and social critic, explained how corporate America uses hidden persuaders to sell products that people didn't know they needed. But hidden persuaders can also stop vandalism, revitalize commercial areas, and reduce collisions. I know that to be the case because I have used subliminal cues to do all these things in various settings.

To decrease the number of collisions, planners need to minimize instances of camouflage, optical illusions, misleading cues, and illegible and ill-placed signs. Many of these are cues commonly used by magicians—they don't belong on the roadway. In short, more research needs to be done on ways to combine engineering with graphic arts and psychology to improve what we perceive and how we react—both as planners and as drivers, pedestrians, and cyclists.

I first tested the notion of preventing car crashes by analyzing an actual intersection in a New Jersey suburb where three collisions had occurred within 30 days. First I looked at what drivers saw from different approaches to the site; then I identified the drivers' visual misces and recommended appropriate changes to city officials. The mayor, police, and city engineers examined the site and agreed with my recommendations. Eight years after the adjustments were made, traffic accidents at that site have been reduced to an average of two per year.

The analysis was relatively straightforward. In approaching the intersection, I saw that the principal crossroad was virtually invisible. Drivers' attention was drawn across the intersection by distant roadway features, with bright curving and shadows. Stop sign visibility was lost in the multicolored background of a children's play structure, and vegetation obscured peripheral views.

To remedy the situation, I suggested three changes: Making the crossroad more prominent by reinforcing the white horizontal crosswalks with thick, raised marking material; relocating the playground structure; and making the stop signs more visible by painting the posts the same red as the signs. The red post introduced a clear vertical element into an otherwise amorphous background.

In this case, the corrective eye cues took two weeks and $10,500 to put in place. Traffic signals would have taken about three years to erect and cost $1.25 million plus several more lives and much neighborhood angst. By using this simpler system, the city also gained both economic and political relief.

Going naked

Something similar happened in 1982 in Leeuwarden, the capital of the Dutch province of Friesland. Sudden budget cuts led to the scrapping of planned traffic calming measures in the village of Oudehaske, where two children had been killed in road accidents. Lacking money for speed humps and such, Hans Monderman, the town engineer, decided instead to strip out all the remaining street signs and furniture in the village. To his surprise, he found that drivers cut their speeds by an average of 40 percent when driving through.

Monderman later put in place more than 100 such distraction-limiting schemes in Friesland and in the provinces of Groningen and Drenthe. He reported that there had been no fatal crashes at those redesigned intersections.

In 1992 he completed the first big urban application of naked space in the town of Maikings, where every trace of road signs, markings, and signals was removed. Only one sign remains at the approach to the town. It says, "Free of Traffic Signs."

In Drachten, Monderman's radical step of removing all traffic lights and road signs while integrating bicyclists and pedestrians led to a dramatic drop in traffic accidents. People were obliged to look and think for themselves. The average accident rate declined from more than eight per year to less than two, and Monderman's idea spread. After a European Union research project into shared space was launched in 2003, naked streets began...
to appear in Austria, Belgium, Germany, Sweden, Denmark, and Switzerland.

Mondern’s totally naked approach would also work in many U.S. locales. He
removed the comfort of speed certainty and introduced the need for caution. His
tools were merely bare streets and people who perceived some risk.

Consider what happens in the U.S. when a traffic signal malfunctions and gets cov-
ered with a hood. With no yellow caution light, drivers slow down at the intersection
instead of speeding up to avoid an imminent red light. Yet traffic keeps moving.

Principles and challenges
Several principles support the idea that visual cues can enhance traffic safety: The eye
is the principal security device of the human body. It allowed our primitive brains
to recognize patterns that may signal danger centuries before our frontal lobes recorded
written speech. Therefore, we react to visual stimuli faster than we can interpret modern
signs and signals.

There’s more: Drivers bring their own problems to the roadway: anxiety, alcohol,
drugs, overconfidence, competition, road rage, color blindness, and rubbernecking, to
time a few. Even our cars are distracting: New cars have an average of three dozen
LEDs and control buttons, competing with the roadway for drivers’ attention. The auto-
makers’ solution to that problem—on-board, hands-off robotic controls that may actually
encourage inattention—are certainly more costly.

When it comes to safety, the message is plain: We are relying on signs, road paint,
and the wrong part of the brain for traffic management instead of pattern cognition
for vehicle guidance. We should be learning from neurologists and cognitive psycholo-
gists, who say that subconscious cues can automatically take road safety up a notch.

Planners and academic departments need to link neurology, cognitive psychology, and
graphic design—particularly as it’s used in advertising—with driver guidance studies.
Maybe we could recover some of the many billions of dollars incurred in annual gross
economic losses due to vehicle collisions and channel the savings toward research.

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