

The Traffic Guru

An unassuming Dutch traffic engineer showed that streets without signs can be safer than roads cluttered with arrows, painted lines, and lights. Are we ready to believe him?

BY TOM VANDERBILT

IF YOU WERE ASKED TO NAME A FAMOUS TRAFFIC engineer, in some pub quiz gone horribly wrong, chances are slight you could hazard a good guess. It is true that Mahmoud Ahmadinejad, president of Iran, was trained as a traffic engineer, but his notoriety does not derive from tinkering with the streetlights in Tehran. Bill Gates got his start developing software for a device to count car traffic, but he was a computer boffin more interested in the technology than the traffic. Your memory might flicker in recognition at the names of William Phelps Eno, the putative “father” of traffic control, or Henry Barnes, the onetime New York City traffic czar credited with inventing the “Barnes Dance,” wherein an entire intersection, for a moment, is given over to a four-way pedestrian crossing.

Traffic engineers are rather obscure characters, though their work influences our lives every day. A geographic survey of East Lansing, Michigan, for example, once found that more than 50 percent of the retail district was dedicated to “automobile space”—parking, roads, and the like. By and large, the design and management of this space is handed over to traffic engi-

TOM VANDERBILT is the author of *Traffic: Why We Drive the Way We Do (and What It Says About Us)*, published this summer by Knopf, from which portions of this essay are drawn. He lives in Brooklyn, New York.

neers, and our behavior in it is heavily influenced by their decisions.

In the last few years, however, one traffic engineer did achieve a measure of global celebrity, known, if not exactly by name, then by his ideas. His name was Hans Monderman. The idea that made Monderman, who died of cancer in January at the age of 62, most famous is that traditional traffic safety infrastructure—warning signs, traffic lights, metal railings, curbs, painted lines, speed bumps, and so on—is not only often unnecessary, but can endanger those it is meant to protect.

As I drove with Monderman through the northern Dutch province of Friesland several years ago, he repeatedly pointed out offending traffic signs. “Do you really think that no one would perceive there is a bridge over there?” he might ask, about a sign warning that a bridge was ahead. “Why explain it?” He would follow with a characteristic maxim: “When you treat people like idiots, they’ll behave like idiots.” Eventually he drove me to Makkinga, a small village at whose entrance stood a single sign. It welcomed visitors, noted a 30 kilometer-per-hour speed limit, then added: “Free of Traffic Signs.” This was Monderman humor at its finest: a traffic sign announcing the absence of traffic signs.



Dutch traffic engineer Hans Monderman, shown in 2005, sought to make roads feel dangerous so that pedestrians and drivers would navigate them with care.

Monderman wasn't an obvious candidate to become a traffic revolutionary. Born in the small Friesland village of Leeuwarden, son of a headmaster, he worked as a civil engineer, building roads, then as an accident investigator, examining how crashes happen. But he was an unusually fluid thinker. Over lunch during my visit, he excitedly told me that he had been reading about the theory that delta societies tend to foster innovation because of their necessary flexibility in dealing with potentially changing landscapes. He saw a parallel with the low-

felt human and organic.

A year after the change, the results of this "extreme makeover" were striking: Not only had congestion decreased in the intersection—buses spent less time waiting to get through, for example—but there were half as many accidents, even though total car traffic was up by a third. Students from a local engineering college who studied the intersection reported that both drivers and, unusually, cyclists were using signals—of the electronic or hand variety—more often. They also found, in surveys, that residents, despite the measurable increase in safety, perceived the place to be more dangerous. This was music to Monderman's ears. If they had *not* felt less secure, he said, he "would have changed it immediately."

TRAFFIC ENGINEERS KNOW that we think waits are longer when we don't know how long they will be.

lying Netherlands. "I think the Dutch are selected for that quality—looking for changes—by the landscape."

And Monderman certainly changed the landscape in the provincial city of Drachten, with the project that, in 2001, made his name. At the town center, in a crowded four-way intersection called the *Laweiplein*, Monderman removed not only the traffic lights but virtually every other traffic control. Instead of a space cluttered with poles, lights, "traffic islands," and restrictive arrows, Monderman installed a radical kind of roundabout (a "squareabout," in his words, because it really seemed more a town square than a traditional roundabout), marked only by a raised circle of grass in the middle, several fountains, and some very discreet indicators of the direction of traffic, which were required by law.

As I watched the intricate social ballet that occurred as cars and bikes slowed to enter the circle (pedestrians were meant to cross at crosswalks placed a bit before the intersection), Monderman performed a favorite trick. He walked, backward and with eyes closed, into the *Laweiplein*. The traffic made its way around him. No one honked, he wasn't struck. Instead of a binary, mechanistic process—stop, go—the movement of traffic and pedestrians in the circle

Not surprisingly, these kinds of counterintuitive findings made news. But often, the reports reduced Monderman's theories to a simple libertarian dislike for regulation of any kind. Granted, he did occasionally hum this tune. "When government takes over the responsibility from citizens, the citizens can't develop their own values anymore," he told me. "So when you want people to develop their own values in how to cope with social interactions between people, you have to give them freedom." But his philosophy consisted of more than a simple dislike of constraints. He was questioning the entire way we think about traffic and its place in the landscape.

In several years of research for a book on traffic, I interviewed any number of engineers, but none, save Monderman, referred to Marcel Proust. In *Remembrance of Things Past* (1913–27), Proust famously waxes lyrical on the ways the automobile changed our conception of time and space. When a driver says it will take only 35 minutes to travel by car from Quetteholme to La Raspelière, the narrator is moved to reflect: "Distances are only the relation of space to time and vary with it. We express the diffi-

culty that we have in getting to a place in a system of miles or kilometers which becomes false as soon as that difficulty decreases. *Art is modified by it also*, since a village which seemed to be in a different world from some other village becomes its neighbor in a landscape whose dimensions are altered.”

Proust, unlike critics such as John Ruskin (who argued that “all traveling becomes dull in exact proportion to its rapidity”), saw much to extol in this new mobility, as did his Belgian contemporary Maurice Maeterlinck. In his 1904 essay “In an Automobile,” Maeterlinck enthused that “in one day,” the car gave us “as many sights, as much landscape and sky, as would formerly have been granted to us in a whole lifetime.” The railway had already radically altered conceptions of time and space, as standardized time united villages in which previously, as Thomas Hardy described it, “one-handed clocks sufficiently subdivided the day.” But the car liberated us still further, from fixed destinations and schedules.

Monderman was interested in this notion that the car changed time and space. He commented on Proust’s observation that a visit to a relative that once took a few days could now be completed in one. Suddenly, more trips could be made, but each trip seemed shorter. “What happened to these people?” said Monderman. “They had gone to their uncle’s, spent three days. Suddenly they’re in a hurry. . . . It’s quite simple—they bought a car. The first thing put in a car is a clock, ticking away in an objective linear time. In the past time went different. They woke with the chickens, and went to bed when it became dark. You had your own time schedule depending on what the seasons told you. Suddenly we can measure the whole day around objective time.”

The implications are clear to any modern driver. Commute times are precisely that—times—with distance obliterated, as if we were driving across the face of a clock. Cities have essentially expanded in size to the extent that new transportation means have arisen to keep commuting *times* more or less stable. Pedestrians, on the other hand, who possess a more intimate knowledge of the geography they are traversing (and must provide the actual power to do so), tend to think in terms of distance. As a New Yorker, my first instinct is to think of some destina-

tion in terms of how many blocks away it is, not how long the walk is.

Progress in traffic is measured in time, and it is striking to hear Proustian phrases such as “lost time” appear in the engineering literature. At traffic lights, for example, “start-up lost time” is the time consumed as cars in a line successively begin to accelerate from a stop. The time that drivers toward the back lose as the queue begins to creep forward is the sum of everyone else’s lost time. Commuters, too, dread “losing time” in traffic.

Time, of course, is highly subjective. Traffic experts have long known that people in traffic tend to feel they are making more progress at a slow, continuous clip than if, over the same distance, they wait at a long traffic light, then drive quickly to the next light. Traffic plays into what is known as “queue psychology”: We think waits are longer when we don’t know how long they will be, or when we are alone, for example. David Levinson, a researcher at the University of Minnesota, has found that drivers view waiting on the highway as less onerous than waiting for a “ramp meter” light to allow them to merge onto the highway.

Monderman believed that the best way to change the conception of time—and thereby to change people’s behavior—was to change the context. This simple insight was one of the foundations of his traffic revolution, which took root a decade before he remade Drachten. In the mid-1980s, Monderman, then a regional safety inspector for Friesland, was dispatched to the small village of Oudehaske to check the speed of car traffic through the town’s center (two children had been fatally struck). Previously, Monderman, like any good Dutch traffic engineer, would have deployed, if not an actual traffic light, the tools of what is known as “traffic calming”: speed bumps, warning signs, bollards, or any number of highly visible interventions.

But those solutions were falling out of favor with his superiors, because they were either ineffective or too expensive. At a loss, Monderman suggested to the villagers, who as it happens had hired a consultant to help improve the town’s aesthetics, that Oudehaske simply be made to seem more “villagelike.” The inter-



How to get from Point A to Point B? In Jeffrey Smart's *Cahill Expressway* (1962), that's a head-scratcher for a man marooned in a motorists' landscape.

ventions were subtle. Signs were removed, curbs torn out, and the asphalt replaced with red paving brick, with two gray “gutters” on either side that were slightly curved but usable by cars. As Monderman noted, the road looked only five meters wide, “but had all the possibilities of six.”

The results were striking. Without bumps or flashing warning signs, drivers slowed, so much so that Monderman's radar gun couldn't even register their speeds. Rather than clarity and segregation, he had created confusion and ambiguity. Unsure of what space belonged to them, drivers became more accommodating. Rather than give drivers a simple behavioral mandate—say, a speed limit sign or a speed bump—he had, through the new road design, subtly suggested the proper course of action. And he did something else. He used context to change behavior. He had made the main road look like a narrow lane

in a village, not simply a traffic-way through some anonymous town.

What Proust, in his early modernist enthusiasm for the mobility afforded by the automobile, did not seem to foresee was that the ability to conquer distance would lead to the denigration of landscapes between the points of origin and destination, and that once the mass of society had acquired cars, those distances would feel more arduous to cross, thus increasing the pressure of time. As Wolfgang Sachs writes in *For Love of the Automobile* (1992), “The masters of space and time awaken to find themselves slaves of distance and haste.”

And so places such as Oudehaske begin to be read less as villages than as something to be blown through on the way to some great elsewhere. Traffic engineers, in Monderman's view, helped to rewrite these places with their signs and other devices. “In the past

in our villages,” Monderman said, “you could read the street in the village as a good book.” Signs advertising a school crossing were unnecessary, because the presence of a school and children was obvious. “When you removed all the things that made people know where they were, what they were a part of, and when you changed it into a uniform world,” he argued, “then you have to explain things.”

Traffic signs speak to our increased mobility, but also our loss of local knowledge. They are standardized fast food instead of local cuisine. For the past few decades, the geographer Denis Wood has intensively mapped his neighborhood, the Boylan Heights section of Raleigh, North Carolina, to show everything from the distribution of Halloween jack-o'-lanterns on people's porches to the light cast by streetlights. He noticed that the streets with the most signage were those that carried the most people *through* the neighborhood. “The signs were, by and large, not for locals,” he said. Another map showed that the most emergency police calls came from those same streets, typically for crashes: The signs were not necessarily improving safety (though of course it could be argued that without signs there would have been even more accidents).

Monderman envisioned a dual universe. There was the “traffic world” of the highway, standardized, homogenous, made legible by simple instructions to be read at high speed. And there was the “social world,” where people lived and interacted using human signals, at human speeds. The reason he didn't want traffic infrastructure in the center of Drachten or any number of other places was simple: “I don't want traffic behavior, I want social behavior.” The social world had its limits; at some intersections in Drachten, Monderman said, he “wouldn't trust this solution.” The removal of signs and other visual markings could only be done after careful study of conditions such as traffic volume, the geometry of the intersection, and the mix of cyclists and cars. It is precisely this delicate attention to context that Monder-

man felt many of his colleagues lacked in installing traffic controls in the first place: “I call them copy machines. They always do things by the book.”

Monderman's work has inspired or been echoed by a growing number of projects that, in essence, try to replace the traffic world with the social world. His ideas, often under the guise of what is known as the “shared space” movement, have found their way in one form or another into a number of other towns across Europe, from Bohmte, Germany,

MONDERMAN SLOWED TRAFFIC by making a main road look like a narrow village lane, not simply a traffic-way through some anonymous town.

where the town's leaders (after visiting Drachten) decided to scrap the lights and signs at its center, an increasingly busy artery for through traffic, to the “gossip square” in the Swedish town of Norrköping, where cars, bicycles, and pedestrians cross streams of traffic in a central plaza largely devoid of markings.

Despite Monderman's successes in places such as Makkinga and Drachten, skeptics have objected that while these arrangements are fine for small villages, they could never work in cities with heavy traffic. A project in London, undertaken a few years ago independently of Monderman, suggests otherwise. On Kensington High Street, a busy thoroughfare for pedestrians, bikes, and cars, local planners decided to spruce up the street and make it more attractive to shoppers by removing the metal railings that had been erected between the street and the sidewalk, as well as “street clutter,” everything from signs to hatched marks on the roadway. None of these measures complied with Department for Transport standards. And yet, since the makeover there have been *fewer* accidents than before. Though more pedestri-

ans now cross outside crosswalks, car speeds (the fundamental cause of traffic danger) have been reduced, precisely because the area now feels like it must be navigated carefully.

While Monderman addressed conferences and municipal governments in the United States on several occasions during his lifetime, his ideas have not been adopted here in any meaningful way. One reason is that the United States has yet to fully embrace even traditional traffic calming methods. Collectively, Americans are still trying to wrap their heads around the fact that roundabouts are safer (and generally move traffic more efficiently) than conventional signalized intersections.

If Monderman's ideas seem heretical to many in the United States, it's worth considering exactly who created the American system in the first place, and why. In *Fighting Traffic*, a fascinating history published earlier this year, Peter D. Norton documents how the automobile industry, in concert with self-proclaimed traffic experts, helped shift the debate on urban traffic safety during the 1920s. As motorization levels soared, measures such as "speed governors" on engines, a once popular idea, fell out of favor, and the urban street was redefined from a place with various uses to a channel for moving the most vehicular traffic as quickly as possible.

And this is what we got: an entire infrastructure of inner-city expressways and elevated pedestrian crossings, whose ethos of separation was adopted under the banner of safety but was meant to move cars through cities faster (and even that strategy backfired, as the available space quickly filled with new drivers). The traffic infrastructure was intended to make cities safer for pedestrians by removing them from the street; but in any vital city this was, of course, never possible. The illusion of safety—roads built so that, as one engineer put it, "accidents will be impossible"—simply brought new dangers, and degraded the very qualities that made cities attractive: spontaneity, locality, interactions at human scales.

Perhaps unsurprisingly, given how long we have lived with this built ideology, Monderman's ideas encounter two common criticisms. The first is that measures that appeal to the

better angels of our nature could never work in a country such as the United States, where drivers seem stubbornly reluctant to "share the road" even with other cars, much less pedestrians and cyclists, and the threat of a lawsuit hovers over the smallest traffic intervention. It is true that if a local government is to remove the signs from a busy intersection, and orchestrate the smooth movement of bicycles and cars through it, strong social norms must be in place. But norms can be influenced by context. Picture, for example, the improvised grass parking lots at county fairs: no stop signs, no speed limits, no markings of any kind—maybe just some kids with flags telling you where to go. But people, by and large, drive and walk in a cautious manner. There is no great epidemic of traffic fatalities at county fairs.

The other objection Monderman's ideas often meet is that people do act like idiots, and that, if anything, we need more separation, more safeguards, more rules. Standing with me near the roundabout in Drachten, Monderman noticed a driver speeding past. "There's a little part of society who don't accept rules, who don't accept social structures," he said. "It's not up to a traffic engineer to change it." A few weeks earlier, he said, a local 21-year-old who had just gotten his driver's license had died in a crash. "He used drugs, alcohol. There's not a street that can cope with that problem."

Traffic signs, for Monderman, were an invitation to stop thinking, to stop acting on one's own volition. In streets designed to safely handle the actions of the riskiest participants, everyone slips into riskier behavior. As he put it to me, "There are so many things that can be forbidden. The stranger thing is that we believe everything that isn't forbidden is allowed."

Monderman loved cars. "I like to drive really fast on the Autobahn," he admitted. But he did not love the accommodations that had been made to cars everywhere outside the Autobahn—the garish, oversized warning signs, the pens for pedestrians, the anonymous asphalt roads. For decades, traffic engineers have pursued, with the best of intentions, an impossible goal: the elimination of accidents. Monderman questioned how safe this kind of safety was. More fundamentally, he asked if mature automobile societies could, in essence, act like adults. ■