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From Road &amp; Track for



# With Self-Driving Cars, It's the Interior That Will Matter

Sit back, relax, and enjoy the ride—literally.



Illustration by Christopher Delorenzo

BY BRADLEY BERMAN SEP 22, 2016



The technical ability for a car to drive itself will have a profound impact on automotive design, literally turning car styling inside out. The exterior personality of a sleek roadster or hulking sport utility—which today stirs emotions—will fade in importance as the look and feel of the cabin becomes paramount. "Instead of designing sexy metal boxes, the challenge is creating entirely new experiences





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This new inward focus will not happen overnight. Assisted-driving technology will come in waves or levels of vehicle automation—ranging from vehicles that perform relatively minor assistive functions today, like nudging the steering wheel to keep your car in its lane today, to automobiles able to completely pilot themselves without any human intervention tomorrow.

At each step of the way, the user experience will be made easier and more intuitive. For example, the new Mercedes E-Class, which falls on the assisted-driving end of the automation spectrum, uses sensitive touch-based controls on the steering wheel. "They allow the driver to control the infotainment system using finger swipes without having to take their hands off the steering wheel," said Gorden Wagener, head of design at Daimler AG. "The foundation of our user experience within the car is the delightful interaction between human and machine."



Getty + gocrawford

## Autonomous Cars Will Be an Evolution (Not a Revolution)

With full autonomy arriving perhaps about 2025, prior to that time, maybe around 2020, there will be cars with robust changes in vehicle technology (that'll likely require the driver to be alert enough to quickly re-take control if roadway conditions get too complicated for the car's sensors and computers). With these advances in place, drivers will still likely start out their journeys by manually driving. Then, only after joining a predictable suburban or highway route will the driver pass controls over to the technology. That's when the front seats slide back, the steering recesses into the dash, and airplane-like

    become accessible. Those features showed up in Yanfeng Interior's Innovation Demonstrator



## INSTEAD OF DESIGNING SEXY METAL BOXES, THE CHALLENGE IS CREATING ENTIRELY NEW EXPERIENCES FOR GETTING FROM A TO B.

"No matter how the steering wheel is managed, it has to be back in place in a few seconds and your mental cognitive control has to happen quickly," said Muyres. "Thus the layout of the interior can't change that much." In other words, if the dashboard and interior layout has to be entirely functional and familiar for even a small fraction of the time, the cabin layout of a car will follow existing non-autonomous regimes.

### Swapping the Steering Wheel for the Laptop

Today, it's dangerous and illegal to send a text or check Facebook while driving. But when piloting responsibilities completely go away, even a solo commuter can redirect his or her attention away from the road—earning back the low-value time spent stuck in traffic or on a long monotonous stretch of highway. For commuters in 10 of America's biggest metro areas, that could give back an extra hour per day, the length of today's commutes according to a report from [Trulia](#), the online real estate marketplace.

"If a vehicle gives you an hour or two every day to do something else, that's going to be very desirable to people," Muyres said. He divides that extra time into two categories—completing work tasks like email or phone calls; and simply relaxing by looking at the window or enjoying infotainment. "People will pay money for that. That will become a new luxury premium."

Yanfeng laid out its vision for multiple modular and movable consoles, allowing a range of activities such as working and eating, in its ID16 concept SUV. "Right now, cars have cup holders, a glove box, and an armrest storage space," Muyres said. "That's going to expand to become bigger, smarter and more functional storage." It's easy to envision a giant aftermarket industry of cubbies, catch bins and cool boxes. It would help if they were removable, considering that most self-driving cars are expected to be shared on-demand vehicles rather than privately owned.





Mercedes-Benz

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A Renault Duster Oroch pickup truck is shown from the rear, parked on a dirt road with a city skyline in the background. The advertisement has a yellow background with the text "DUSTER OROCH com motor SCe 1.6." and a button that says "CONHEÇA &gt;". The Renault logo and "Passion for life" tagline are on the right.

"Once we eliminate the need to sit at least one of the occupants in a conventional driving position, we can explore different architectures and seating layouts," said Geoff Wardle, executive director of graduate transportation systems and design at ArtCenter College of Design in Pasadena, Calif. But Wardle cautions against fantasizing about turning a car interior into a living room with chairs facing each other, due to safety concerns. Those more radical visions will have to wait perhaps until 2035 or so—the timeframe that Daimler used when conceiving its striking spaceship-like autonomous limousine called the Mercedes-Benz F 015, which was unveiled last year.

## Introducing Über Smart Dashboards

Automotive designers are already anticipating the expanded role of digital dashboards to communicate what's going on outside the vehicle. "If you're disconnected from the driving task, you're in a different role, more like a passenger," said Alexander Hilliger, principal user experience software engineer at the







production car to use car-to-x technology to warn drivers about dangerous road conditions beyond the reach of the car's sensors. "This information is reported to and from the cloud between other Mercedes-Benz drivers," said Wagener, Daimler's chief designer. "Communication between cars can be compared to intelligent swarm systems."

For futuristic self-driving concept cars like the Mercedes-Benz F 015, screens surround all the passengers to provide a full detailed control room picture of all the cars, pedestrians and objects around the car.

"The priority is on trust," said Hilliger. "In essence, we want to bring what's happening outside the vehicle to the inside." In other words, when we're not in control we still need to be put at ease that hazards are being detected and that we are moving at the required speed to reach our destination on time.



Getty + Weiyi Zhu

## Prepare to Share





believes that shared self-driving cars can be compared to hotel room, which are made to be clean and fresh for every new customer, regardless of how many people have used it before. Yanfeng has already explored using antimicrobial materials in high-touch surfaces.

"The hotel industry creates a really cool experience that you spend hundreds of dollars a night on, and it feels like it's a new thing for you every time," said Muyres. He believes shared autonomous cars will provide the same type of satisfying experience as well, just while moving down the road.

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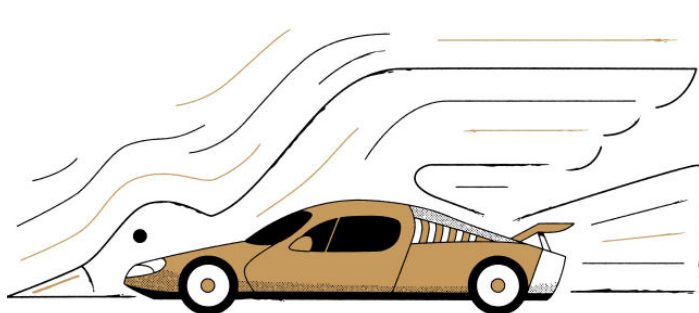
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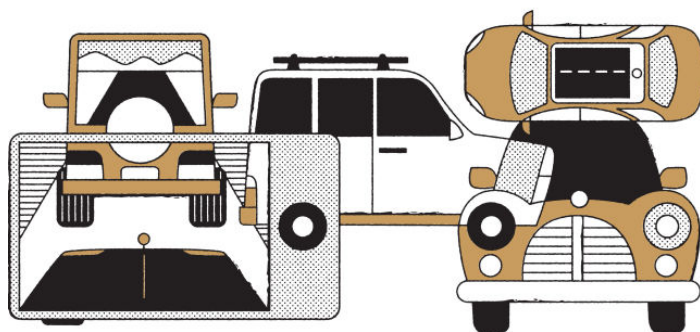
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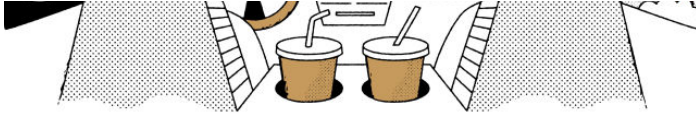
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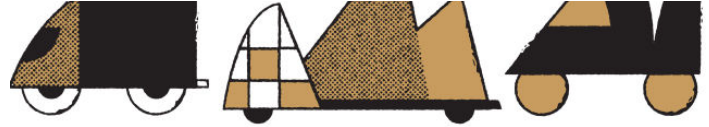






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