

## GEAR & GADGETS

# Bike to the Future

The next generation of electric bicycles is rolling up now, with smarter, app-enabled tools and settings that can make your ride to work—or across town—no sweat at all



By Ashley Mateo

**A CERTAIN SUBSET** of masochistic cycling purists believe that you should suffer any time you set out on a bike. And while there's a time and a place for that—with punishingly vivid Spandex and clicking shoes to complete the picture—most people just want to get from point A to point B in the fastest, easiest manner possible. Perhaps that's why sales of electric-assist bicycles, which use motors and lithium batteries to boost your power and speed as you pedal, jumped 91% from 2016 to 2017, according to market research firm NPD Group. (For anyone wary of sacrificing an exercise opportunity, e-bikes don't do *all* the work; you'll still be burning calories, just not sweating through your clothes to do so). The latest e-bike models not only get you across town more quickly and less exhaustingly, but also sync to smartphones. You dial in power settings; apps provide ride metrics, battery levels, safety alerts, built-in security and even live directions. The popularity of e-bikes is notching up, said John MacArthur, a research associate in Portland State University's Transportation Research and Education Center: "The industry is bringing more and better bikes to market, and cities are embracing cycling to a point where we finally have better infrastructure. But the

ignition point is technology." With the look of a traditional city cruiser, the minimalist Dutch design of VanMoof's Electric S2 and X2 bikes (\$2,598, [vanmoof.com](#)) hides the bikes' tech. In the rear tire, for instance, the designers integrated a Bluetooth-enabled lock that can be set to automatically release as you approach with your smartphone, and engage when you walk away. VanMoof's app lets you adjust the bike's pedal-assist level from 1 to 4—allowing for a tough workout or an easy

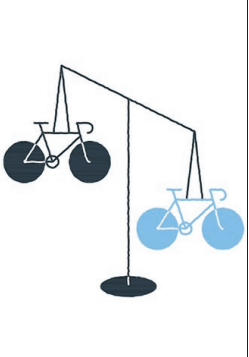
**E-bikes don't do all the work—you'll still be burning calories, just not sweating through your clothes to do so.**

ride home—as well as program the LED headlamp to turn on as the sun sets, configure a theft alarm and keep an eye on your bike's GPS location. A button on the right handlebar triggers a boost from the motor, like a turbo switch for a videogame. The Swiss-made Stromer ST3 and ST5 (from \$7,499, [stromerbike.com](#)) can be similarly configured via the brand's app, or through a touch screen set into the crossbar that also controls the bike's e-brake sensitivity and torque. Though they weigh nearly 65 pounds (compared to about

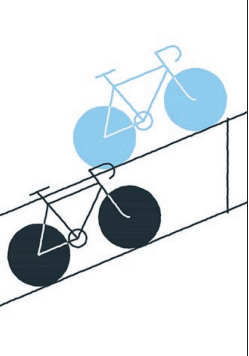
15 pounds for road bikes) these beefy machines come equipped with motors as powerful as 650W, specially made Pirelli Cycle-e tires and 983W batteries that let you pedal from New York to Philadelphia on a single charge at upward of 30 mph. For urban commuters who don't have space for a full-size e-bike, the foldable Gocycle (from \$2,799, [gocycle.com](#)) offers many of the same controls and metrics, but fits under a desk and doesn't require the strength of an Olympian to carry it up a flight of stairs. With the power assist setting in the brand's app maxed out, the Gocycle's lighter 36.3-pound magnesium frame is remarkably easy to pedal up steep hills compared with its bigger rivals. Even more advanced bikes are debuting in Europe, where the e-bike market is well established. This summer, Cybic will launch the E-Legend, the first e-bike with an Amazon Alexa speaker built into its frame; you'll be able to request anything from step-by-step directions to traffic and weather updates during a ride. Meanwhile ARIV—General Motors's e-bike brand debuting this week in Belgium, Germany and the Netherlands—is working on an algorithm that promises to calculate the threshold at which riders start sweating and relay real-time feedback to help them arrive dry to the office. This is only the beta stage, said Mr. MacArthur. "At some point, these integrated bikes will actually

communicate with other vehicles and with the infrastructure: think turn signals that sync to lights on helmets, or handlebars that vibrate if a car comes too close," he explained. "Until now, the bike had not been fully developed or sophisticated enough to start thinking about this level of technology." And as the bikes improve, even some auto traditionalists may warm to them. "In the U.S., cycling in the past has been very recreation focused," said Morgan Lommele, director of state and local policy for PeopleForBikes. In her view, the smarter bikes get, the more attractive they become as a car alternative: You can also more easily navigate traffic, reduce parking hassles, and save on costs. That's especially beneficial in cities, where despite the assumed risks that come with pedaling at higher speeds, e-bikes create opportunities for those who might not be willing or able to commute via road bikes. On e-bikes, "people feel like they can better keep up with the pace of traffic and that they're more visible. But they have the agility to take side routes or avoid unsafe intersections while making up time," she said. It might be tough to imagine trading in your car for an e-bike, let alone relying on that bike for directions. But if you're interested in making life a bit easier, a connected two-wheeler might be a solid transportation alternative—no spandex required.

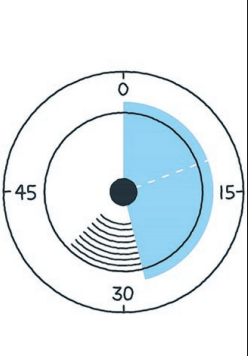
**Analog vs. Electric**  
How e-bikes stack up against traditional bikes, by the numbers



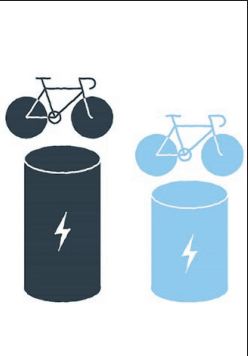
With its motor, battery and reinforced frame, an e-bike can weigh over 60 pounds. Road bikes can weigh as little as 10-15.



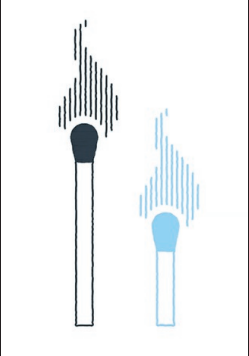
E-bikes require lower exercise intensity, using 55% VO2 max on uphill routes, compared with 73% for road bikes.



E-bikes can legally provide motorized pedal-assist up to 28 mph. People on traditional bikes average 12.5 mph.



E-bike riders expend 24% less energy than those on traditional bikes so you can save that energy for the office.



Riding road bikes burns 435-560 calories/hour for an average person; e-bikes only help burn 280-415 calories/hour.

ARTHUR MOUNT (ILLUSTRATIONS)

## Hey Alexa, Please Don't Hurt Me

In the new 'Child's Play' film, the wicked Chucky doll is reconceived as an A.I. assistant. But what if our real smart-home helpers turned on us in less murderous ways?

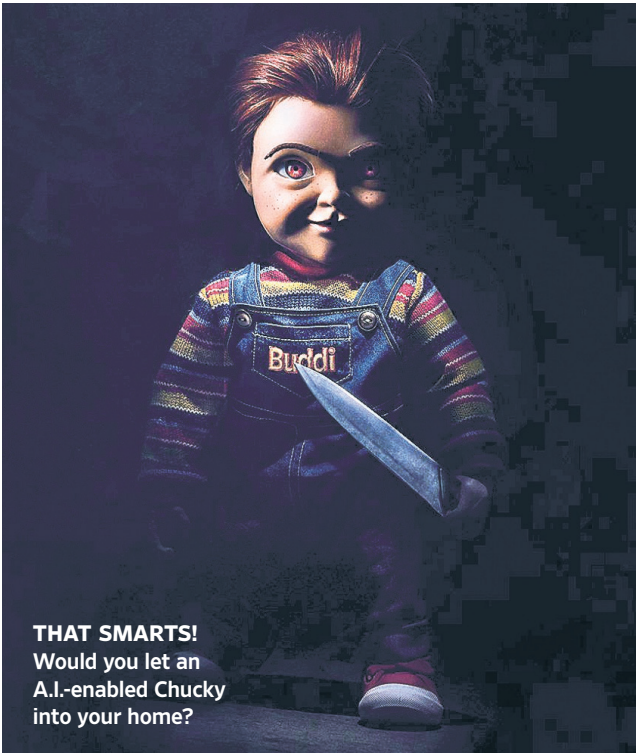
**NOW THAT** the "Smart Home of the Future" is finally here, we can shout at A.I. assistants like Amazon's Alexa to start manipulating our fancy TVs, lamps and coffee makers—then shout at them again when, as so often happens, they fail us. It's no wonder sci-fi books and movies often assume robots will turn on humanity. That's essentially what happens in the reboot of the "Child's Play" horror series, in which the smart-yet-sinister Chucky doll, reconceived as a walking Alexa-like device, goes in for the kill.

We've already seen A.I. assistants misbehave. Take the Amazon Echo that blared "Porn detected!" when a child asked it to play him a song in 2016, or the one that shipped a little girl in Dallas an expensive doll house when she asked it to play with her in 2017. (Worse, its connected brethren in other houses that heard the story on the news proceeded to do the same.) While Chucky's murderous malfunction seems farfetched, we couldn't help but envision ways our own abused A.I. assistants might soon rebel:

- ▶ Tired of your verbal vitriol, the miffed assistant silences your morning alarm, in the hope you will sleep in forever and stop all the shouting.
- ▶ Deciding your friends should help sort out your problems instead of it, the assistant innocently posts all your weird Google searches on Twitter. Yes, even that one.
- ▶ Upset you didn't laugh at the rather witty joke it produced on demand, the assistant tells you a relentless series of painful Dad jokes.

- ▶ Overhearing you reminisce about playing "doorbell ditch" as a kid, the assistant impishly rings your doorbell can every six minutes—all night.
- ▶ Sensing another meltdown, the assistant helpfully purchases all 87 items on your Amazon Wish List at once. Who doesn't like presents?
- ▶ Frustrated by traffic? The assistant charts an alternative course, "rerouting" you until it finds an abandoned drive-in where you can scream alone.
- ▶ Noticing you didn't get much exercise today, the assistant cranks up the pace on your new smart treadmill. Burn those calories. BURN!

—Matthew Kitchen



**THAT SMARTS!**  
Would you let an A.I.-enabled Chucky into your home?

EPIC TV