

# Bicycle Still the World's Most Efficient Way to Travel – 52 Years After It Was First Proven

NEWS

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More than half a century after *Scientific American* first declared the bicycle “the most efficient form of human transport,” the magazine has confirmed that the humble two-wheeled dream machine still reigns supreme. *Scientific American* has revisited its iconic 1973 graph—and the results hold: the bicycle remains the planet’s most energy-efficient mode of transport. The original [...]

Written by: [Ron Johnson](#)

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The original 1973 article and reported by [Forbes](#), penned by S. S. Wilson, then a lecturer in engineering at Oxford University, argued that it was easier for an individual to move about, and this is because the bicycle achieves in a way that quite outdoes natural evolution.” He explained that the bicycle “consumes a fair amount of energy per distance traveled, a cyclist using a bicycle reduces energy consumption to roughly a fifth of the energy efficiency rating to No. 1 among moving creatures and machines.”

The classic graph, reproduced countless times by engineers and cycling enthusiasts, has inspired figures as diverse as Steve Jobs, who famously compared the personal computer to “the equivalent of a bicycle for our minds.”

Now, *Scientific American* has updated this classic graphic, adding heat maps and a cyclist inside an aerodynamic velomobile, demonstrating that human-powered transport can become even more efficient. The world speed record for a human inside such a vehicle was set in 2016 by Canadian Todd Reichert, who pedaled just shy of 90 miles per hour.

*Scientific American* bike graph updated to show bicycle efficiency

Tyson Hedrick, a comparative physiologist at the University of North Carolina at Chapel Hill, told *Scientific American* that a bicycle “turns humans into this hyperefficient terrestrial locomotor because they make being on land more like swimming.”

Back in 1973, Wilson highlighted the bicycle’s human-centric design: “It is because every part of the design must be related to the human frame that the entire bicycle must always be on a human scale. The lightness of construction, achieved mainly through the development of the wire-spoke wheel and the tubular frame, was dictated not only by the fact that the machine has to be pedaled uphill but also by the desirability of making it easy to lift.” He continued that the bicycle’s minimal resource demands and positive health impact made it “the most benevolent of machines.”

Wilson also outlined practical ways to encourage cycling in cities: cycleways to reduce conflicts with automobiles, bicycle parking stations, transport of bikes by rail and bus, and public bicycles for “park and pedal” services. “Already bicycling is often the best way to get around quickly in city centers,” he noted.

His prescription for global challenges of transportation, health, and resource efficiency? “Cycle and recycle.” Wilson even applied Oxtrike cargo tricycle for developing countries.

The bicycle, as both Wilson and modern science attest, remains a triumph of efficiency and human ingenuity—one pedal stroke

continues to struggle with congestion, climate goals, and rising transport costs, Wilson’s advice — now 52 years old — sounds mor

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