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## Beautiful Progress (Book review, ‘Smaller Faster Lighter Denser Cheaper’)

by Josiah Neeley  
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A few years back a YouTube video of the comedian Louis CK went viral on the internet. Speaking on the Conan O’Brien show, CK called on people to reawaken their sense of wonder at the unprecedented technological marvels of the modern world:

We live in an amazing amazing world... Everybody on every plane should constantly be going “oh my God! Wow!” You’re sitting in a chair in the sky. People say there’s delays on flights. Delays, really? New York to California in five hours. It used to take 30 years.

Robert Bryce’s [Smaller Faster Lighter Denser Cheaper: How Innovation Keeps Proving the Catastrophists Wrong](#), published this month by Public Affairs, does not feature Louis CK’s comic rant, which is too bad, as the book is in many ways an extended reflection on the same theme.

As the book details, the last few hundred years have seen a relentless trend towards getting more from less through increased efficiency. As Bryce describes the trends:

Our desire to do more work and exchange more information is making our computers Smaller Faster. From food packaging to running shoes, nearly everything we use is getting Lighter. More precise machinery is making our engines and farms Denser. And always – always – innovators are driving down costs and making goods and services Cheaper.

### A Little Better All the Time

Part of the fun of Bryce’s book comes from the sheer range of his examples. In one chapter, we learn how the weight of the Tour de France winner’s bicycle fell by more than half between 1903 and 2003, before the Tour stepped in and imposed minimum weight requirements for competing bicycles).

In another, Bryce shows how using cell phones to transfer money in the developing world instantly raised salaries of Afghan policemen by 30 percent (due to the fact that corrupt officials could no longer skim from their paychecks before they were delivered).

From the Haber-Bosch (which helps synthesize the fertilizer needs to grow crops to feed billions) to MOOCs (which have the potential to revolutionize higher education), nearly every aspect of modern life has been and is being and improved by the trend towards greater efficiency.

Even where Bryce’s examples are well known, he has a way of bringing them to life. Moore’s Law, which says that computing power (measured by the number of transistors on an integrated circuit) is almost a common place. Yet the implication of this trend over the course of half a century, to quote Bryce quoting Ray Kurzweil, is that a “kid in Africa with a smartphone is walking around with a trillion dollars of computation circa 1970.”

Bryce is careful to acknowledge that innovation is not an unalloyed good. One of his examples of innovation in action is the AK-47. And he notes that many times innovation helps to solve one problem, only to create others (which in turn are solved by further innovations). But the overall picture that emerges is of a world made much brighter by human ingenuity.

## The Cult of Bigness

One interesting feature of the curve of modern innovation is that while increased efficiency has trended toward smaller and lighter production, it hasn't always been conceived that way. Sixty years ago, the conventional wisdom was nearly the opposite.

Economies of scale meant that bigger was better, and giant projects such as the electrification program of the Tennessee Valley Authority were seen as being the paradigm of efficiency. Not coincidentally, this era saw a move toward more government control in the west as well as fears that the Soviet economy would outpace free economies through more efficient planning.

Inevitably, this cult of bigness provoked a reaction, typified by E. F. Schumacher's *Small is Beautiful* and many modern environmentalists. Yet many of the same people ended up rebelling against bigness only to embrace the wrong kind of smallness. They argued for smallness in production (fewer people, consuming less), rather than the smallness in the effort needed to produce.

Today, the environmental movement often expresses itself in what Bryce rightly describes as "an anti-human outlook." One plan put forward in 2010 by Bill McKibben, calls for reductions in consumption so severe that "the average Bangladeshi would be required to cut his/her energy use by about half." By demonstrating how growth has (counter-intuitively to some) helped to lessen humanity's impact on the environment, Bryce's book brings into focus the kind of smallness that we should be aiming for.

## Powering Innovation

One issue that is never fully addressed in Bryce's book is the source and conditions for the Smaller Faster trend. It's easy to forget, living in a world of iPhones and air conditioning, MRIs and jet engines, just how atypical life in modern industrialized countries really is. The ordinary existence for most of humanity throughout history, however, was, in the words of Thomas Hobbes, "poor, nasty, brutish, and short."

Given the amazing creative abilities of human beings, why is it that the steady stream of innovations and improvements have, in effect, been limited to the last few hundred years, and just to certain parts of the globe?

Bryce never directly addresses this question, although he does offer hints. A large portion of the book, for example, is devoted to the key role that energy plays in enabling innovation and prosperity. As in his previous books *Power Hungry* and *Gusher of Lies*, Bryce persuasively punctures promoters of wind power and bio fuels, and argues for increased use of natural gas and nuclear power. But he could have gone further in showing how central energy is to enabling the trend towards increased efficiency that has driven all of Bryce's many examples.

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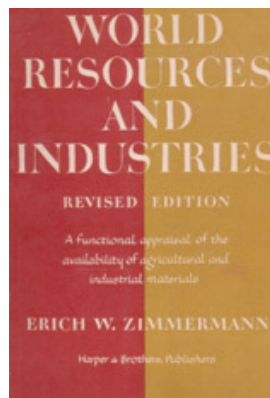
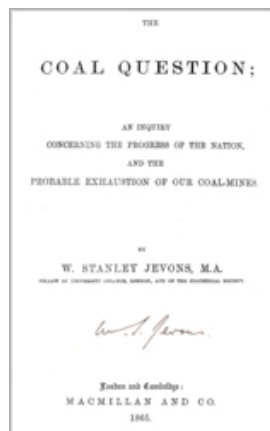
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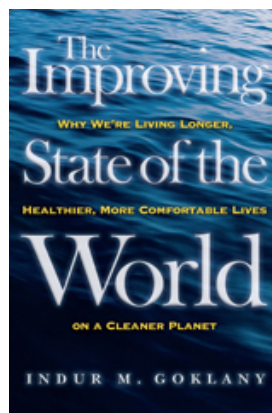
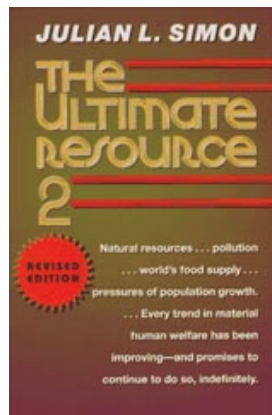
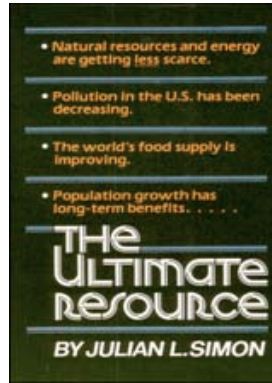
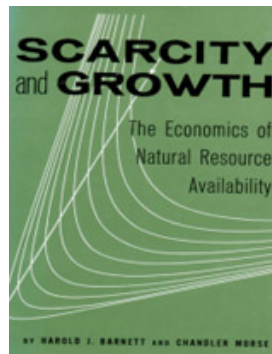
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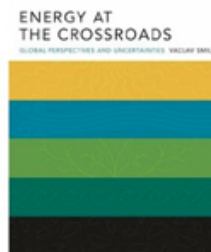
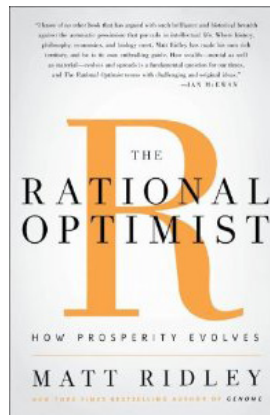
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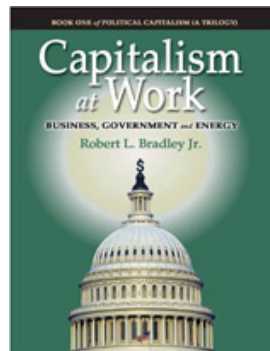
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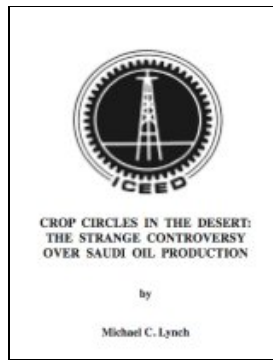




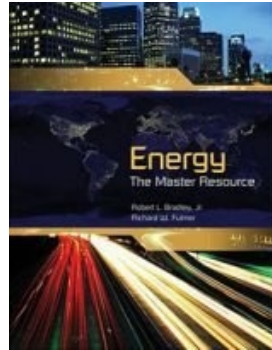
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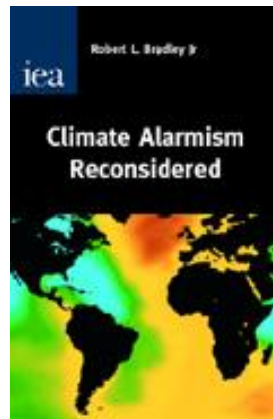
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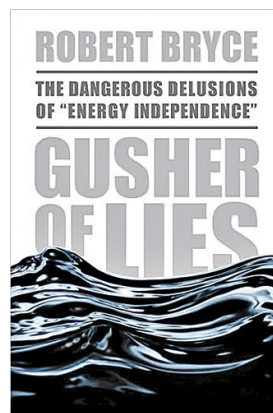
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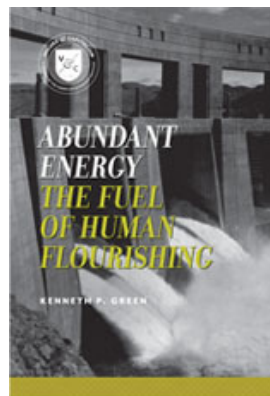
[\*Gusher of Lies\*](#), by Robert Bryce



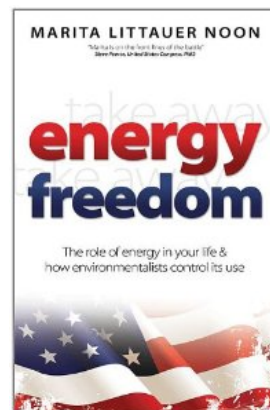
[\*Power Hungry\*](#), by Robert Bryce



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