Set alongside a spate of new works on the emergence of political economy and capitalist modernity, it is a timely reminder that countless contemporaries were not eager to change the governing structures of their economic lives.

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Vaclav Smil. *Prime Movers of Globalization: The History and Impact of Diesel Engines and Gas Turbines*. Cambridge, MA: MIT Press, 2010. 261 pp. ISBN 978-0-262014434, $29.95 (cloth), ISBN 978-0262518765, $15.95 (paper).

When I got dressed this morning in my home in eastern Alabama, I took note of my garments' labels: pants from Pakistan, belt from India, shirt from Indonesia, and shoes from China. Then I passed a bank of photos taken over the years in far-flung places—Los Angeles, Manhattan, Edinburgh, and Frankfurt am Main—before grabbing my Mexican-made cell phone and heading for the door. Today I chose neither of my classics from the old West Germany nor my Japanese brand truck from Tennessee. Instead I took my German brand coupe from Mexico, a vehicle equipped with an engine made in Poland.

None of this is remarkable. We tend to take for granted that we live in a world flush with goods produced wherever multinational corporations perceive an advantage and a world in which even a lowly academic is able to travel vast distances by jet for conferences, research, and the occasional vacation. When the *New York Times* or the BBC do manage to call our attention to the dynamics of this global economy, the discussion tends to center on international organizations, free-trade treaties, or the exploitation of the working poor. Apart from black-boxed nods toward the role of "technology"—by which they usually mean "computers" or "the internet"—seldom have pundits sought to steer our notice toward those basic technologies that actually make this global economy possible: containerized shipping, airliners, two- and four-stroke diesels, and gas turbines. Historians have done a slightly better job. Several books released in 2006 shed light on containerized shipping (Brian J. Cudahy's *Box Boats*, Arthur Donovan and Joseph Bonney's *The Box That Changed the World*, and Marc Levinson's *The Box*), while a handful of others have examined the history of commercial aviation (notably, albeit largely from an

American perspective, T. A. Heppenheimer's *Turbulent Skies* [1995] and Tom Crouch's *Wings* [2003]). But what of the prime movers which actually power our container ships and airliners? Apart from Edward Constant's classic, *The Origins of the Turbojet Revolution* (1980), the literature on gas turbines and diesels is surprisingly thin.

Enter Vaclav Smil's recent contribution, *Prime Movers of Globalization*. Smil is genuinely offended that treaties and microchips grab most of the headlines related to globalization, while diesels and turbines are normally overlooked. Consequently, this book is above all else a work of recovery through which Smil attempts "to remedy this appreciation deficit" (45). He seeks, that is, to provide an overview of the history of these two prime movers, highlighting their leading and indispensable contributions to the maturation of the global economy. His opening chapter offers a sweeping survey of global shipping, including a "first wave" (1500s–1800s) powered by sail, a second (1800s–World War I) powered by steam, and a third (post–World War II) powered by diesels and turbines. Following second chapter in which he provides a detailed analysis of internal-combustion technologies, the balance of Smil's narrative zooms in on the prime movers of the post–World War II era. After examining the development of diesel and turbine technology, he delves into their application in global commerce, their relative costs and benefits, and their future potential. Tellingly, Smil concludes that *whatever* the future holds in terms of the size and scope of the global economy, *any* movement of goods by sea and people by air in the years to come cannot but be powered by diesels and gas turbines, respectively. They are simply too efficient—and too dominant—to be replaced.

This perspective is responsible for the book's chief weaknesses, as well as its key strengths. Because Smil *begins* by observing that marine diesels and turbofans are vital to our global economy, his analysis is largely teleological. Smil asks not how the political, economic, and technological fabric of global commerce developed, that is, but rather how these two specific types of engines emerged triumphant. This results in an analysis that is quick to dismiss alternatives and which spends a lot of time celebrating litanies of "firsts" and "largests"—the first marine diesel over 100,000 brake horsepower, the highest-thrust turbofans ever built, and so forth. Unabashed engine technology enthusiasts (myself included) will appreciate these facts and figures, but they come at a steep price: *Prime Movers of Globalization* glosses over a number of important episodes in the history of diesel and turbine technology. The development of diesel injection systems, e.g., which are critical to the atomization of heavy-oil fuels, is given but a single-paragraph sketch (p. 76); the advent of electronic engine-management controls is handled similarly (p. 123). In short, this book is

more of a synthetic overview than an in-depth history of technology and innovation.

On the other hand, precisely because of Smil's fascination with diesel and turbine engines, *Prime Movers of Globalization* does deliver the clearest and most concise descriptions of the operation of these forms of propulsion I have ever encountered. This is especially true of his coverage of turbofans in Chapter four and of two-stroke marine diesels in Chapter five. He also provides an invaluable taxonomy of internal combustion engine types in Chapter two that should be required reading for anyone who studies the history of personal and commercial transportation. In addition, in spite of the dreaded "impact" in its subtitle, this book is not deterministic. Smil is very careful to explain that diesels and turbines are *enabling*, but not *determining*, technologies. He also deftly juxtaposes Rudolf Diesel's early expectations for his engine—that it would be used in small-scale, hyper-local industry—with its actual deployment in the long run as a prime mover of large-scale global commerce.

Above all, Smil accomplishes his chief goal: no one who encounters this book will ever again be inclined to gloss over the enabling technologies of the global economy. Primarily for this reason, but also for its invaluable technical discussions, *Prime Movers of Globalization* is a welcome addition not only to my office shelf but also to my students' reading lists in the history, technology, and business of transportation.

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Bernhard Rieger. *The People's Car: A Global History of the Volkswagen Beetle*. Cambridge, MA: Harvard University Press, 2013. 416 pp. ISBN 9780674050914, $28.95 (cloth).

In the vastness of the automobile's impact upon modern society, a few vehicles stand above all others. These cars have become, over time, something more than commodities, taking on a larger-than-life stature as national and global icons of production, consumption, and identity. The Ford Motor Company famously produced fifteen million Model-T's between 1908 and 1927, making the "Tin Lizzie" the first cultural touchstone of mass mobility and automotive affection.