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# Drilling Down: The Gulf Oil Debacle And Our Energy Dilemma



## Synopsis

For more than a century, oil has been the engine of growth for a society that delivers an unprecedented standard of living to many. We now take for granted that economic growth is good, necessary, and even inevitable, but also feel a sense of unease about the simultaneous growth of complexity in the processes and institutions that generate and manage that growth. As societies grow more complex through the bounty of cheap energy, they also confront problems that seem to increase in number and severity. In this era of fossil fuels, cheap energy and increasing complexity have been in a mutually-reinforcing spiral. The more energy we have and the more problems our societies confront, the more we grow complex and require still more energy. How did our demand for energy, our technological prowess, the resulting need for complex problem solving, and the end of easy oil conspire to make the Deepwater Horizon oil spill increasingly likely, if not inevitable? This book explains the real causal factors leading up to the worst environmental catastrophe in U.S. history, a disaster from which it will take decades to recover.

## Book Information

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## Customer Reviews

Simply put, this is a book of deep significance. I came across it shortly after it came out, as I was doing research for my own book, "Just a Little Bit More" (Blue Ocotillo/ACTA, 2014), that deals with excess and over-consumption. Scholars Joseph Tainter (anthropologist, Utah State University) and Tad Patzek (engineer, University of Texas-Austin) detail the Deepwater Horizon tragedy by way of backdrop for the rest of their story: whether or not "we can plan on a future that requires still more oil" (p. 5). Before shucking this book aside as the fracking boom would seem to nullify concerns about the future of oil in America, know that the authors approach this important subject with scholarship, experience, and a (politically) non-partisan demeanor. I was introduced to two crucial concepts by reading this book: EROEI (energy returned on energy invested) and the energy-complexity spiral. The first concept is self-explanatory; the authors tell how back in the early days of oil discovery the EROEI quotient was around 100:1. Today - as evidenced by the doomed Deepwater Horizon platform which cost more than \$1 billion to produce - EROEI for oil worldwide is about 18:1. Tainter and Patzek claim a complex modern society (such as ours) needs at least a 5:1 net energy ratio to succeed. Tellingly, some of the politically charged tar sands from Canada will be processed with an EROEI as low as 3:2 . . . The energy-complexity spiral concept is, once grasped, fascinating and obvious. Remember the hand crank window on your older model car a few years ago? It got to be balky as the car aged, but getting it fixed when it eventually broke didn't cost you an arm and a leg. And, you could fix it yourself if you were so inclined.

This is a very important book that ought to be read by everyone who is concerned with the future of industrial civilization. The links between energy and consumption, and energy and environment, are widely appreciated, but are only part of the story. A more general picture emerges when environment is broadened to ecology, as done by William Catton, Jr. in his under-appreciated book, *Overshoot: The Ecological Basis of Revolutionary Change* (University of Illinois Press, 1982). An even more general picture emerges when one incorporates the link between energy and complexity, as done by Joseph Tainter in his classic book, *The Collapse of Complex Societies*, Cambridge University Press, 1988. *Drilling Down*, by Joseph Tainter and Tadeusz Patzek, is in part a reiteration of ideas contained in Tainter's earlier book. However, the ideas are expressed more compactly and benefit from more than two decades of additional refinement. This aspect of the book can be thought of as 'Tainter Lite'. The book also provides a detailed description of the Deepwater Horizon environmental disaster, with much technical detail provided. This illuminates the complexity of modern energy extraction systems. It also provides a real-world context and case study for the presentation of Tainter's framework of an energy-complexity spiral that governs, and probably

dooms, industrial civilization. The overall approach certainly got my attention. I consider this book to be a must-read (along with Catton's book) for anyone who is ready to venture beyond the happy talk of 'sustainable development'. The execution of the book is less polished than it could be. The very obvious grafting of two authors' separate contributions may be inevitable.

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