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## Charles Fishman, The Big Thirst

Jessica Bidgood

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## **BOOK NOTES**

Charles Fishman, The Big Thirst, Free Press, New York (2011); 388 pp; \$26.99; ISBN 978-1-4391-0207-7; hardcover.

Charles Fishman is a best-selling author and award-winning business journalist for the innovative business magazine *Fast Company*. His reporting explains how an organization or industry works that is at the same time familiar and unknown. *The Big Thirst* explores the human relationship with water in ten chapters each focusing on a different aspect of this complicated relationship. Fishman presents water issues on both a global scale and an individual scale.

In Chapter One, The Revenge of Water, Fishman introduces the main problems in the human relationship with water, which he goes on to explore in later chapters. Over the past century, developed countries have provided people with water on demand, but most people take this water for granted because the delivery and disposal systems are invisible. Many countries have neglected both water supplies and systems. The golden age of water taught people that water is naturally abundant, cheap, and safe. However, water scarcity will force a change in how people think about water and how they manage water systems; the golden age of water is ending.

Fishman presents statistics on water availability and use around the world as well as the impact of growing populations on water needs. The water cycle is used to illustrate two facts about water: (1) it can be cleaned, and (2) it cannot be used up. Many water scarcity problems occur when people manage water poorly; water problems are inherently local problems. Water from one place cannot be moved to help with a water scarcity in another place without significant investments. However, while the problems are local, the consequences and the costs can be felt around the world. For this reason, water needs to become visible, so it can be valued and managed wisely.

In Chapter Two, The Secret Life of Water, Fishman shows that, despite the fact that we are surrounded and dependent on it, the average person knows very little about water. The water on Earth today has been here since it was originally created in space; water molecules today are the same molecules from millions of years ago. From the biochemistry of human cells to the vast amount of water deep in the rock of the Earth's mantle, Fishman illustrates how crucial water is to not only human existence but to the existence of the Earth itself. The unique physical properties of water make life on Earth possible. Fishman concludes that while knowing the science of water is important, it only scratches the surface of the human relationship with water.

In Chapter Three, *Dolphins in the Desert*, Fishman focuses on the water management problems in Las Vegas and Atlanta, two cities whose main reservoirs dropped dramatically over the last decade. In the desert city of Las Vegas, Fishman walks the reader down the Strip, describing the lavish water features at the major casinos. Fishman introduces water manager Patricia Mulroy, the woman responsible for a thirty-one percent drop in per capita water use in Las Vegas over the past two decades. Mulroy challenged everyone in Las Vegas to rethink water conservation and reuse, from residents to casino moguls, from golf courses to hotel laundries.

Fishman contrasts the successful water conservation in the desert with the political struggle in Atlanta. Fishman attributes Atlanta's water problems to complacency. As the population grew, the city failed to add new water sources and when Lake Lanier started running low, Atlanta had nowhere to turn. The battle for Atlanta's water was played out in the courts and Atlanta lost. Instead of seriously addressing the water scarcity problem by finding new water sources or imposing strict conservations standards, the city of Atlanta imposed mild water conservation measures and got lucky when the drought ended.

In Chapter Four, Water Under Water, Fishman gives the reader an inside look at the water infrastructure system of Galveston, Texas as the city struggled back from Hurricane Ike's direct hit in 2008. Galveston's water system was devastated by the hurricane, and the city officials struggled to restore basis water before re-opening the evacuated city.

In Chapter Five, The Money in the Pipes, Fishman profiles companies around the world that have taken a hard look at how they use water and how changing that use can save them money. From Michell Wool in Australia to MGM Resorts International in Las Vegas to Coca-Cola and IBM, companies are realizing that the cost of business looks a lot like the cost of water. Fishman also describes the economics of bottled water and compares the costs to those of maintaining the water system in the United States. This chapter explores the changes in behavior that occurs when companies start to look at the business and economic value of water.

In Chapter Six, *The Yuck Factor*, Fishman addresses how the failure of water managers and politicians to consider the emotional connection people have with their water supply can backfire. In the midst of a massive drought, the city officials in Toowoomba, Australia made a decision to start recycling wastewater into drinking water. The technology exists to provide safe, clean drinking water from wastewater, but the pressure from outraged citizens ultimately stopped the project. Instead of being open to changing the way they thought about water, the people of Toowoomba ended up paying a lot more money for a massive water pipeline.

In Chapter Seven, Who Stopped the Rain?, Fishman explores the consequences of Australia's epic drought, the Big Dry, from the perspective of agriculture water use and municipal water use. The Murray River in Australia once provided irrigation for the most productive rice crops in the world. Now, not only are the fields sitting un-irrigated, the Murray River no longer has a current sufficient to flow into the ocean.

In the city of Perth, water manager Jim Gill started planning for drought after looking at inflow data for the city's dams and concluding that the only trend was less and less water. Gill decided building more dams was not going to solve the city's water problems if there was no rainfall, so he started looking for other sources of water. With good technology and better political maneuvering, Gill managed the construction of Australia's first city-scale, drinking water desalination plant. But even with a desalination plant, the real struggle is changing the human habits that assume abundant water.

In Chapter Eight, Where Water is Worshipped, but Gets No Respect, Fishman presents India as an example of a broken water system. Major cities in India do not provide 24/7 water to any customers; in this way, when it comes to water, the poor and the wealthy in India have a lot in common. The difference is the poor gather their water in five gallon buckets, while the wealthy use pumps to fill large storage tanks in their homes. The water is available, but the neglected infrastructure cannot deliver it reliably or safely. In rural India, women and girls can spend hours walking to get water from wells; this prevents them from working or going to school.

In Chapter Nine, *It's Water, Of Course It's Free*, Fishman explores the pricing of water. The monthly water bill is not a charge for water, but for the infrastructure to deliver that water. Without transparent pricing, water use is inefficient. However, pricing water equally becomes a problem when society does not want to price anyone out of access to safe water. Fishman introduces different ways of approaching water economics while still providing the first glass.

In Chapter Ten, *The Fate of Water*, Fishman reiterates the need for transparency in the human relationship with water. People need to start thinking about water and thinking about their attitude towards water.

In conclusion, this book is an enjoyable read directed towards a non-technical or non-legal audience. Fishman provides illustrative and memorable examples of the relationship between people and water.

Jessica Bidgood

Alex Prud'Homme, The Ripple Effect: The Fate of Freshwater in the Twenty-First Century, Scribner, New York (2011); 405 pp; \$27.00; ISBN 978-1-4165-3545-4; hardcover.

To most people, water is boring. It comes cheaply and easily from our taps and showerheads, fills our swimming pools and oceans, and flows through our rivers. Though most people interact extensively with water on a daily basis, we rarely stop think about our impact on what is essentially a static resource.

In a world of ever-increasing population and pollution, fresh water is becoming more and more scarce and the consequences of shortage are severe. In *The Ripple Effect*, Alex Prud'Homme provides a bird's-eye