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Book Review - Smallpox: The Fight to Eradicate a Global Scourge (D. Koplow)

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Smallpox: The Fight to Eradicate a Global Scourge.



David Koplow. Berkeley, CA: University of California Press, 2003. 265p., \$27.00, hardcover. ISBN: [0520237323](#).

The world is free from the variola virus, more commonly known to us as the virus responsible for smallpox -- or at least it is almost free from it. Since the World Health Organization's (WHO) successful eradication campaign ended officially on December 9, 1979, smallpox no longer exists in its natural state, yet it does remain in securely isolated freezers in two locations: the Centers for Disease Control and Prevention facility in Atlanta, Georgia, and the Russian State Research Center of Virology and Biotechnology near Novosibirsk. In *Smallpox: The Fight to Eradicate a Global Scourge*, David Koplow examines the controversy surrounding the fate of these samples of smallpox. He weighs arguments by those who support the destruction of the last stockpiles of this virus against those who urge us to continue to securely preserve these stockpiles indefinitely. As a professor of law at Georgetown University and former Deputy General for International Affairs at the U.S. Department of Defense during the Clinton administration, Koplow helps readers understand this important decision based on the scientific and social history of the virus as well as the debate that surrounds this decision. He provides readers with sufficient information to formulate their own opinions about what should be the ultimate fate of the virus.

Koplow describes the variola virus as the "tiny creature" responsible for smallpox. During the 20th-century, this virus killed over 500 million people worldwide. As recent as the 1970s, it was deemed responsible for killing over two million people per year. With the virus' deadly impact in mind, Koplow carefully analyzes the controversial decision to deliberately make the virus extinct, a decision he claims is a "very delicate social choice." While the debate regarding the ultimate fate of the variola virus is not new (in fact, the original target date for eradication was December 31, 1993, a date that has been moved back several times), the recent perceived domestic and global threats of biological weapon attacks makes Koplow's investigations even more timely and relevant. His unique vantage point allows readers to understand how such biological weapons have been used in the past as well as the political role the existing stockpiles currently serve.

Because universal vaccination against smallpox was halted a few decades ago, Koplow points out that a smallpox attack today by terrorist groups would be particularly devastating. Koplow provides an historical perspective and a balanced investigation into whether or not remaining stocks of the virus in the U.S. should be destroyed. Ultimately, he concludes that the beneficial purpose of further scientific research on the virus outweighs opposing arguments maintaining that by destroying existing stockpiles, we will be able to prevent it from falling into the so-called "wrong hands." Oddly enough, Koplow's conclusion is in agreement with the Bush administration that also wishes to preserve the stockpiles. However, it is important to note that Koplow asserts that we should not destroy the virus, not because the stockpiles may prove useful in the study (and production) of biological weapons, but out of an ethical concern that it is wrong for humans to use power in this way. Comparing the variola virus to an unrepentant convicted murderer "lingering on death row," Koplow supports a decision to control the virus, but not completely, permanently, and deliberately destroy it.

Koplow's *Smallpox* is divided into nine chapters, beginning with an historical overview of the global destruction the smallpox virus has caused. In the first two chapters, Koplow traces the history of the virus through the past 3,000 years, beginning with the first signs of the virus in mummies in ancient Egypt, as well as

devastating occurrences of the virus in ancient India, China, and Greece. He explains how smallpox is believed to have arrived in the United States with early European colonizers in the 1600s. From 1617 to 1619, smallpox killed 90% of the Native American population along the Massachusetts coast. After discussing Edward Jenner's discovery of the smallpox vaccine in the 18th-century, Koplow leads readers into more recent history, recalling the horrifying nature of the disease that faced over thirty countries a little over thirty years ago. As a result of these global epidemics, many Americans were given the smallpox vaccine when they were children; however, some younger readers may not be completely aware of how much pain, suffering, and death the virus has caused in recent history.

Koplow begins his third chapter, "Smallpox as a biological weapon," with a brief examination of the history of biological warfare (BW), but spends more time outlining BW programs the United States and Russia initiated during the Cold War. By 1969, the United States "had stockpiled 40,000 liters of antipersonal BW agents, 45,000 toxin-containing bullets and shrapnel bombs, and five tons of antiplant BW agents." Koplow explains that the smallpox virus was one of the foremost biological agents weaponized in the United States. While obtaining and confirming evidence to support his claim that the United States participated in developing and using these kinds of biological weapons, Koplow discovered even more disturbing evidence of extensive BW programs occurring in the Soviet Union. In the early 1970s, over 30,000 people were involved in Soviet projects to manufacture smallpox, anthrax, plague, and other BW agents. Koplow points to the weaponization of smallpox for many years in the late 20th-century, despite the fact that international treaties were designed specifically to prevent such occurrences. North Korea, Iran, Iraq, Libya, and Syria are countries that may have recently obtained smallpox BW's from the Soviet Union, while countries such as China and Pakistan are also potential suspects. Koplow concedes that this is the primary reason why some feel strongly about not exterminating the virus stockpiles currently held in the United States and Russia. Although scientists generally disagree, arguing that all the necessary research on this virus has been completed, some still argue that these stockpiles may be needed to prepare the country in case of biological warfare.

In his fourth chapter, "Environmental law and policy," Koplow shifts his focus from bioterrorism to environmental arguments for and against the preservation of the stockpiles of smallpox. In doing so, Koplow begins with two primary questions: (1) Should we prudently avoid irreversible outcomes by preserving the virus, at least for now, or (2) should we cautiously seek to minimize the social dangers by destroying the last variola stockpiles as soon as possible, in order to eliminate the specter that smallpox could somehow leak out, once again inflicting its horrors on humanity? One argument Koplow covers in depth is how the smallpox virus should not be eradicated in order to preserve biodiversity (an argument made by some environmentalists). This argument attempts to convince readers that they should be cautious in destroying a species, in this case a virus, since we never know what future uses this species may serve. Koplow explains that environmental law is designed to assess the risk associated with certain species or even materials being preserved or destroyed in the scheme of nature. Advocates of destroying the smallpox virus clearly believe that its existence in the two facilities poses an unnecessary risk to natural life, especially to the human species.

In the sixth chapter, "The morality of extinction," Koplow discusses the World Health Organization's role in the decision regarding the eradication or preservation of the smallpox virus. The WHO has acted as the primary political force in the control of the virus and can also be credited as the organization responsible for preservation of the remaining stockpiles. Koplow provides readers with information concerning the WHO's complicated political journey that has led to

the destruction of the virus in its natural form but its preservation in stockpiles in the United States and Russia. Koplow discusses the impacts of smallpox research, the terrorist attacks of September 11, and the role of the U.S. government in delaying the destruction of the virus samples. Koplow traces the series of delays and ends this chapter by pointing readers towards the WHO's next deadline for possible destruction of the virus stockpiles. He asks readers to consider the ethical aspects of the eradication campaign, as well as the precedents being established by the WHO for the next time a deliberate extinction opportunity arises.

Koplow continues his investigation into the morality of extinction in the following two chapters, which provide cases for and against extermination of the variola virus. In searching through moral and ethical dilemmas, Koplow argues the following: "Making a permanent mark on our planet -- and deciding to do so consciously and deliberately -- is the most powerful sort of statement we humans could make about our position in earth's environment, and it should be rife with ethical inhibitions." Issues addressed in these chapters include the symbolism of eradication, factors that may prevent humans from making clear moral judgments, and the precedent the smallpox issue will hold if eradication does eventually take place. With each moral argument presented, Koplow presents a fair counterargument, which allows readers to weigh each side in relation to morality and ethics. In the final two chapters, Koplow makes his final case against the extermination of the remaining smallpox stockpiles. In doing so, he focuses on his own personal conclusions and provides some recommendations for the future. He connects his arguments to the current global political climate. For example, he notes that after 9/11, the Department of Defense and the Bush administration called for 300 million doses of the smallpox vaccine to be stockpiled. Vaccines have been administered to military personnel stationed in the Middle East, and some government officials are considering doing so for the general public in the United States (although 600-1000 deaths would likely occur due to adverse reactions to the vaccine if this national campaign occurred). Koplow provides readers with strong closing arguments and encourages others to become more aware of all sides of this important and timely issue.

Smallpox: The Fight to Eradicate a Global Scourge is an interesting and timely contribution that helps readers understand an issue affecting so many of the conflicts in today's global political arena. Smallpox has proven its capability to affect millions of people for thousands of years, and this study of the history of smallpox can help readers make more informed decisions regarding the outcome of the remaining stockpiles of the virus. Koplow concludes, "In deciding whether to eradicate smallpox, the world community must address fundamental and diverse questions." These questions regard the roles and responsibilities of humans, and our rational, ethical, and moral decisions concerning the fate of a deadly virus.

Lisa Donovan and David Alan Sapp