

March 20, 2020

## Martin Arrowsmith in 2020 – Dealing with Plagues

*Arrowsmith* by Sinclair Lewis was published in 1925. It won the 1926 Pulitzer Prize, which Lewis declined, largely because his earlier novel *Main Street* had been denied the 1921 prize for not being sufficiently “wholesome”. Although *Arrowsmith* is ultimately a complex tale of medicine, ethics, and intellectual growth of idealistic young physician Martin Arrowsmith, this posting concentrates on the characterization and treatment of a plague. In the book, Martin believes that he has a treatment for the plague having to do with bacteriophage, or *phage* that destroys the bacteria. While his wife Leora pleads for him to give it to everyone, Martin argues that he needs a “control group” (who do not get the treatment), so that he can determine whether the treatment is effective. Shortly thereafter Leora falls fatally ill when infected by the *Bacillus Pestis* and dies.

Among our frustrations in these difficult days are the lack of a vaccine, and a cure for the COVID-19 virus. Our science seems slow, our testing seems slow, and our production seems slow. The standard for testing is the “double blind” test where neither the subject nor the tester knows who is getting the test substance or the (inactive) placebo. All of these take time, and we cannot administer vaccines or cures without knowing whether they work. We don’t currently have the *phage*, and if we did, we don’t know whether it would work.

It is tempting to look for villains in the provision of efficacious vaccines and treatments. Has the pharmaceutical industry been hamstrung by federal regulations that may have slowed the production of potentially helpful treatments? There is some evidence that this occurred in the past, although regulations have been eased in the recent decades. Americans should be reminded that the Thalidomide tragedy of the early 1960s, in which many pregnant women were given a medication to address morning sickness, led to the births of babies with malformed limbs. US drug regulators refused to approve Thalidomide for distribution, thereby preventing thousands of potential casualties. As an aside, Thalidomide is approved today to treat Hansen’s disease, once known as leprosy, and some multiple myeloma. In most places women who use it must also use birth control.

Has the structure of the US pharmaceutical industry, including high reported profits, led to underinvestment in timely responses in the forms of vaccines and cures? Possibly, although there have been no vaccines or cures forthcoming from pharmaceutical industries in other countries which regulate corporate profits more strictly than do we.

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What happens to Martin Arrowsmith? At the book's end, he and friend Terry Wickett plan to build a laboratory to do medical research without commercial pressure. *Arrowsmith* is still considered the 1926 Pulitzer Prize Novel winner, and Sinclair Lewis won the 1930 Nobel Prize for Literature "for his vigorous and graphic art of description and his ability to create, with wit and humour, new types of characters."

About the processes of creating vaccines and treatment – like making wine, or growing trees, they take time. We are impatient.

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