



BOOKS *et al.*

LITERATURE AND SCIENCE

Revisit a cautionary classic

Lessons for scientists fill a newly annotated *Frankenstein*

By **Dov Greenbaum**

The tale of Victor Frankenstein and his monstrous creation has become a universal touchstone that encapsulates our visceral fears regarding the promises, perils, and pitfalls of countless diverse areas of science and technology. This annotated volume of Mary Shelley's original work is an effort to reintroduce the story to new generations of researchers who, like many before them, ought to take its lessons to heart.

Frankenstein—a paradigmatic story of science done poorly and technology rashly applied—can provide an easily accessible foundation for an education into the broader social and ethical implications of one's research. This foundation is especially necessary for young scientists faced with increasingly complicated and often novel concerns relating to their research and its applications.

This new edition is divided into four principal parts: An introductory essay, an annotated version of the original *Frankenstein*, seven short essays prepared by various scholars, and follow-up discussion questions. Although many of the more than 100 anno-

tations that accompany Shelley's text—each authored by one of a stable of impressive commentators—are literary in nature, there are a number that afford a broader commentary on science, both as practiced at the time of the text's writing and as practiced today.

The introductory essay, written by emeritus English professor Charles E. Robinson, aims to find a space for the humanities to guide the natural sciences. Increasing interest by outsiders who wish to engage in the scientific process likely reflects a mounting unease about the rapid and seemingly unchecked advancements in scientific innovation, particularly in the areas of genetic modification, human enhancement, and artificial intelligence (AI).

Coincidentally, it is principally innovation in these areas that often earns the pejorative prefix “Franken-” in the popular press. Although conventional wisdom holds that that this usage is a misnomer—that pop culture has conflated the monster with the scientist—perhaps, as many of the essays that appear in this volume emphasize, the real fiend in the book is the scientist. These essays explore timely lessons culled from the story itself, each providing its own take on the continued applicability of *Frankenstein* as a cautionary tale in areas such as genetic engineering and atomic energy.

Instructive to the budding-scientist audience, several of the essays set out to dem-



**Frankenstein
Annotated for
Scientists, Engineers,
and Creators of
All Kinds**

Mary Shelley, author;
David H. Guston,
Ed Finn, and Jason
Scott Robert, Eds.
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The reviewer is at the Zvi Meitar Institute for Legal Implications of Emerging Technologies, Herzliya, Israel, and the Department of Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, USA. Email: dov.greenbaum@idc.ac.il

Many “reanimations” of the *Frankenstein* story, such as the 1931 film adaptation, are themselves iconic.

onstrate what particular research-related characteristics make Victor Frankenstein so loathsome. These essays focus on the inventor's impatience in following through on the appropriate process of development, his poor application of scientific methodology, his lack of empathy, and his inability to foresee the consequences of his experiments.

Validating the editors' efforts to use science fiction as a learning tool, journalist Cory Doctorow's essay describes how science fiction not only predicts the future but often actually influences it. Although Doctorow argues that these anticipated technologies only come to fruition when the right set of circumstances arises, the existence of many technologies that have uncanny resemblances to *Star Trek* devices suggests that science fiction often plays a very direct role in the actuation of unprecedented and innovative technologies.

Whereas most of the essays focus on the ethical, social, and responsibility components of research, Jane Maienschein and Kate McCord delve into legal concerns, questioning whether an unartfully created monster can achieve personhood. The authors parley that discussion into the politically charged area of abortion, specifically discussing whether the incomplete development of an embryo withholds its legal rights of personhood. A similarly informative discussion could have focused on the nearly equally controversial area of AI and personhood, an issue now under consideration by many governments (1).

In the final section of the book, the editors have provided thoughtful questions inspired by each chapter of *Frankenstein* and every essay, taking pains to elucidate the relevance of each to the science student. This relevance is suggested both broadly (e.g., “How did the young Victor approach reading, learning, and science?”) and more specifically (e.g., “Are today's scientists and engineers who are involved in synthetic biology and other similar endeavors engaged in motherless creation?”).

While overall a very beneficial project, the book might have also considered the relevance of the many derivative works that have been inspired by the original *Frankenstein*. This is especially important because much of what popular culture attributes to the original (and what can be relevant to science students) is not in the book itself, but rather in its subsequent reanimations. ■

REFERENCE

1. M. Delvaux, Committee on Legal Affairs, Draft Report with Recommendations to the Commission on Civil Law Rules on Robotics 2015/2103 (INL), 31 May 2016.

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