Frankenstein's Footsteps: Science, Genetics and Popular Culture

Mr. Jon Turney
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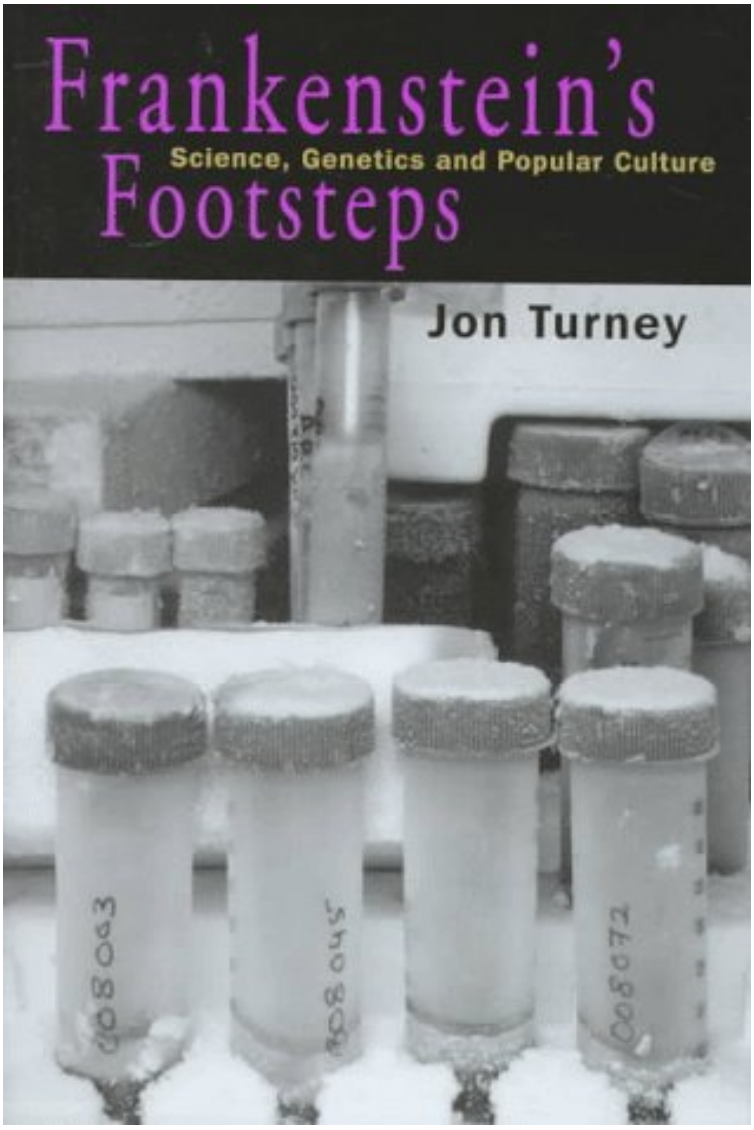

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Mr. Jon Turney : Frankenstein's Footsteps: Science, Genetics and Popular Culture before purchasing it in order to gage whether or not it would be worth my time, and all praised Frankenstein's Footsteps: Science, Genetics and Popular Culture:

0 of 0 people found the following review helpful. Thorough but not an easy or partcularly fun readBy Janet EshenroderVery detailed account looking at conflicts and concerns about advances in biological science: the stories told by the scientific community and stories told by popular media. Concerns of the public (and some scientists) are not dismissed or downplayed by the author, though it is interesting to follow the predictions of disasters surrounding

vivisection, transplants,and "test-tube babies." We live through the same intensity of arguments now with genetic engineering and cloning. Reading of past outcries by the public over new scientific procedures (which we now accept as routine) does little to remove the fears that new scientific discoveries and techniques may perhaps go too far, be used in an unethical manner, or create "monstrous, unintended results" due to lack of foresight/oversight.What I appreciated at Turney's conclusion was a call for the scientific community and the public to have discussions not in terms of black and white outcomes (the "all-out scientific quest" or the "restriction on certain research"), but in terms of "maybe" outcomes which would address where we want to head as a society, how best to get there, and how to respond to public concerns in a responsible manner. The author draws no easy conclusions but offers much food for thought.Parts of this book left me impatient, such as the first chapter which centers around what he plans to cover in the rest of the book. Some parts are dry but great as historical reference, giving detail background into research papers, scientific conferences, books, movies, and popular press. Parts dealing with events in my lifetime I found fascinating. I remember studying genetics and remember the "issues of the day" concerning the direction of genetic manipulations. I remember the evolution of test-tube babies (I have friends who are parents because of the procedure). I certainly have my own reservations over gene modification in the agrifood industry, since I've developed numerous food allergies late in life.I appreciate this book may be too dry for most readers. Am not sure if I had to do it over again if I would put the effort into reading this one. It was recommended by my husband, a science editor, and so is valuable for future discussions. On the other hand, I'm not sure it will sway either of us in our own position. It will be valuable if it helps us appreciate the other side and look for a middle ground, which I assume was the author's intent.1 of 18 people found the following review helpful. not bad; but certainly not great, either.By A CustomerThis was an interesting book. It tried to give you the entire history of frankenstein. This means how it afects you in every way since it was written. A nice idea, but not well written. It is long and a little boring. It is also repetitive. It reads more like a phone book, than a non-fiction literary work. I was not pleased at all. In fact, I would not purchase anything else by this author(Mr. Jon Turney) ever again. I thought he could have been a lot more interesting and exciting, if he had really tried.

Mary Shelley's "Frankenstein", a tale crafted two centuries ago "to awaken thrilling horror", is a story that speaks to deep fears and desires that lie at the heart of our responses to biological science. Tracing the history of the development of biological science and how it has been received and understood by the public over two centuries, Turney's book argues that the Frankenstein story governs much of today's debate about the onrushing new age of biotechnology. Popular images of biological science have been influenced by Mary Shelley and such literary descendants as H.G. Wells, Jack London, Karel Capek and Aldous Huxley, as well as pulp writers, journalists, essayists, filmmakers and other commentators. This book examines how these images have developed as the growth of experimental methods has created a biology with real power to control and manipulate life. Frankenstein's shadow is long, Turney finds. It has affected the debates over vivisection in Victorian Britain, early 20th-century responses to the widely advertised possibility of laboratory creation of life and controversies about test-tube babies, genetic engineering and cloning. While Frankenstein remains a vehicle for expressing our collective ambivalence about some of the defining technologies of our age, the story may have outlived its usefulness as a frame for interpreting the significance of real, as opposed to fictional, science. Recognizing the need to understand the old stories, Turney calls also for new stories - stories to help with the task of shaping and regulating the unprecedented set of possibilities biological science now offers for fashioning life to suit our own ends.

From Library JournalThis book is a combination of history, biology, and genetics, literary and film criticism, and bioethics debate. A senior lecturer in science communication in the department of science and technology studies at University College London, Turney has many interesting things to say about how biological science is communicated to the public, how the story of Frankenstein has conjured up in popular culture certain images of science and scientists, and how those images have changed over time. That we can learn something from how sf and film influence public perceptions of science is a very good notion and an important one to consider, especially in light of recent experiments on monkey head transplants and sheep cloning. Unfortunately, Turney's academic prose style makes his book difficult to read, but it would still be a useful addition to a history or science communication collection.?Margaret Henderson, Cold Spring Harbor Laboratory Libs., NYCopyright 1998 Reed Business Information, Inc.From The New England Journal of MedicineOn June 1998, after a seesaw battle on television and in the press, Swiss voters rejected a referendum that would have severely limited research in genetic engineering. The debate featured arguments about man-made monstrosities and the ethical propriety of creating new forms of life. These objections to manipulating the stuff of life are not new: they go back to Prometheus, who made men from clay, and the medieval golem, a clay giant that was magically endowed with life. Nevertheless, the Swiss referendum is notable because it showed that at the end of the 20th century, ancient myths about science continue to pervade public opinion. In Frankenstein's Footsteps, Jon Turney examines how Mary Shelley's Frankenstein influenced popular ideas about the biomedical sciences. He shows that the debates on in vitro fertilization, recombinant DNA, cloning, and even tissue culture evoked fantasies of Frankenstein's creature. One of Turney's main themes is that Shelley's story influenced not only literature, drama, and

film but also the public's perception of science. Turney argues that the popularity of Frankenstein was a response to the Industrial Revolution, which flourished during the Victorian era. The new technology, it was believed, would culminate in the creation of life -- after all, didn't Frankenstein use a dramatic bolt of electricity to give his creature life? Turney begins his innovative book by exploring how science began to take "increasing control over the living world" soon after the publication of Frankenstein and ends with Dolly, the sheep created by a cloning procedure that, like Frankenstein's method, depended on a jolt of electricity to give her life. In 1899, Jacques Loeb announced that he could initiate embryogenesis in frog eggs by artificial parthenogenesis. Later, The New York Times headlined a story about artificial parthenogenesis with "Chemical Creation of Life." Alexis Carrel, Loeb's associate at the Rockefeller Institute, then showed that cells from a chick's heart could be kept in tissue culture, beating rhythmically for months. These experiments created a sensation; Carrel became a national hero and won the Nobel prize in 1912. The press responded with stories about head transplants and the reanimation of cadavers. After World War I, Karel Capek's play R.U.R., which introduced the word "robot," created another sensation. Capek imagined the manufacture of humans on a production line, a metaphor that was not lost on the public. R.U.R. and similar works influenced Aldous Huxley's Brave New World, published in 1932. It told of the mass production of genetically identical humans, some of whom would be slaves (robots) and others of whom would be the intelligentsia. The uproar that followed was fueled by the announcement in 1934 that Gregory Pincus of Harvard University had accomplished in vitro fertilization in rabbits. For this work, Pincus was denied tenure; he left academia, and later became a strong advocate of birth control. Almost simultaneously, Warren Weaver coined the term "molecular biology" to sum up the Rockefeller Foundation's program of fundamental research on living matter. In 1936, Boris Karloff, the original cinematic monster of Frankenstein, starred in The Invisible Ray, a movie about a radium projector that could annihilate entire cities. Nine years later, the invisible ray that destroyed Hiroshima brought a new element, radiation, into the public discourse about biology. Hermann Muller had already shown that x-rays are mutagenic, capable of producing monstrous fruit flies. A proselytizing eugenicist, he wrote articles for the lay press as wild as one entitled "Race poisoning by radiation." This emphasis on the gene and the discovery of the structure of DNA intensified public interest in artificially created life. Indeed, in 1965, Charles Price, then president of the American Chemical Society, proposed a massive national effort to create life in vitro. There were, however, dissenters. In 1971, for example, the federal government ordered a moratorium on in vitro fertilization. But the opposition was swept away in 1978 by the birth in Britain of the "baby of the century," Louise Brown, the first child produced by in vitro fertilization -- a collaboration among John and Lesley Brown, Patrick Steptoe, a gynecologist, and Robert Edwards, a reproductive physiologist. The joyous headline in France-Soir read, "Victoire de la Science, victoire de l'Amour." But there were also misgivings. Edwards lost his Medical Research Council funding because of his work, and in the Journal Leon Kass called for a moratorium on in vitro fertilization. Willard Gaylin, then president of the Hastings Institute, wrote an article for The New York Times entitled, "Frankenstein myth becomes a reality." He even described the cloning of carrot cells as Frankensteinian science. In 1975, 140 molecular biologists met in Asilomar, California, and agreed to restrict experiments with recombinant DNA, out of fear of creating harmful new organisms. In Turney's view, this conference signaled that "biology was attaining the powers akin to those envisaged by Mary Shelley." The press joined the debate with such comments as "[I]n biological laboratories, modern Dr. Frankensteins have found a way to create brand-new forms of life." Alfred Velluci, the mayor of Cambridge, Massachusetts, home of Harvard and the Massachusetts Institute of Technology (MIT), declared that his responsibility was "to protect his constituents from `Frankenstein monsters crawling out of the sewers.'" The Washington Star asked, "Is Harvard the proper place for Frankenstein tinkering?" and the Boston Globe ran a cartoon showing a mad MIT scientist rushing to create Frankensteinian monsters after the Cambridge Experimentation Board approved recombinant-DNA research. But Asilomar was only a prelude to the fierce debate triggered by the birth of Dolly, a sheep produced by cloning techniques. In discussing embryo research and cloning, Turney makes the point that Frankenstein "offered a rhetorical resource to both sides in the debate, [but] the overall effect was to weaken the opponents' case and strengthen the hand of the embryo researchers." He ends the Dolly story with wise advice: biomedical scientists should not dismiss claims of possible dangers of their work, but should instead explain what these dangers might really be. This strategy, he suggests, can relieve our preoccupation with Frankenstein, because scientists can tell stories even better than Shelley's. In my view, Frankenstein's creature is emblematic of superstition and ignorance about biomedical science. Almost every substantial advance in the field, from tissue culture to transplantation, and now cloning, has been misunderstood by ethicists and policy makers with little understanding of science, by a public ignorant of the fundamentals of biology, and by science writers seeking sensational stories. Frankenstein's Footsteps is original, provocative, instructive, and consistently interesting. Its appeal to historians is self-evident, but molecular biologists, geneticists, and physicians with literary inclinations will surely find this book worthwhile. ed by Robert S. Schwartz, M.D. In Frankenstein's Footsteps, Jon Turney tries to extract lessons from some great examples of popular culture, a task he undertakes with insight, scholarship and courage.... Turney has to pick and choose his examples from the flood of recent biological developments, but his narrative maintains continuity and makes for a gripping, if terse and disturbing, read. -- New Scientist, Brian Goodwin