

The Book of Nicodemus and Other Apocrypha:
The Works of Robert C. O'Brien as a Reflection of
Technological/Scientific Anxieties
in 1960s American Culture

by

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*I had been, and still am, concerned over the seeming tendency of the human race
to exterminate itself—as who is not?*

Robert C. O'Brien
Newbery-Medal Acceptance Speech, 1972

*And you tell me over and over and over again my friend,
Ah, you don't believe we're on the eve of destruction.*

P.F. Sloan
Eve of Destruction, song, 1965

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Dedication

To Robert Conly and ALL the Rats!

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*Issue Raising Questions

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Introduction

There is a sign much in evidence these days which proclaims, "If you aren't nervous, you just don't understand the situation." My impression of Robert C. O'Brien is that he has, since early childhood, "understood the situation" -- i.e., he was and is a nervous being. On the other hand, he has -- also since childhood -- had a formidable set of skills or talents for dealing with that nervousness. (90)¹

Sally Conly of her husband, Robert Conly

The Americans of 1960s had inherited decades of anxiety about scientific and technological progress. In the span of fifty-one years, from the beginning of World War I to the start of the Vietnam War, the devastating potential of weaponry seemed to exponentially increase – from nuclear weaponry to the re-emergence of chemical warfare. It was not just the sci-tech of war that worried Americans in the 1960s, however, but equally disturbing were the implications of advances in fields like genetic engineering and the worries over the increased presence of technology in everyday life. Such anxieties were heightened by revelations of unethical medical experimentation and of government cover-ups of the dangers of nuclear power and the fallout from bomb testing. Joining the voices of the 1960s counterculture movement, more and more Americans were raising their voices against the dangers of science and technology unfettered by social and ethical considerations.

¹ Lee Klingman, *Newbery and Caldecott Medal Books 1966-1975* (Boston, MA: The Horn Book, 1975).

Fiction has always served as a way for people to explore important issues in a “safe place” – and that includes for children *and* adults. Science fiction flourished in the twentieth century United States, the genre gaining a prominent place in American culture through magazines, television shows, movies, and books. Science fiction provided critical commentary on the roles of science and technology in American life in the 1960s. Indeed, said Adam Roberts in *The History of Science Fiction*, there was “a sense [in the 1960s] that human technology had finally caught up with the apocalyptic imagination of previous generations of end-of-the-world prophets.”² The books of science fiction greats like Robert A. Heinlein gained a presence on best-seller lists, while the groundbreaking television show *Star Trek* debuted in 1966 – taking viewers on fantastic journeys peppered with social and technological commentary. Even non-science fiction authors like Kurt Vonnegut had a hand in addressing sci-tech anxieties in books like *Player Piano* and *Cat’s Cradle* -- the former speaking against the idea of a completely mechanized society ruled by sci-tech elites, the latter featuring a chemical weapon that could threaten human life. Youth fiction had also begun to address such heady material: Scholars Carrie Hintz and Elaine Ostry cite the late 1960s as a time in which youth books made “serious and disturbing comment on the likely direction of human civilization,” and, in the 1970s turned even grimmer, becoming “a dark literature of emergency and despair.”³

Hintz and Ostry may as well have been thinking of the books of Robert Conly, published between the late 1960s and early 1970s, under the pseudonym Robert C. O Brien. Robert Conly, a naturally anxious man, had spent every working day of his career on staff of newspapers and magazines. Conly took his first position with *Newsweek* in 1940, and in news or information he would remain until his premature death in 1972. This placed him on the frontlines of current

² Adam Roberts, *The History of Science Fiction* (New York, NY: Palgrave Macmillan, 2006).

³ Hintz and Ostry, *Utopian and Dystopian Writing for Children and Young Adults*, 13.

events during decades in which Americans were forced to come to terms with the terrible potential of sci-tech, concerns that were much broader than the devastating destruction wreaked by atomic weaponry on the cities of Nagasaki and Hiroshima. Scholar Brian Morse described Conly's work as that of "some one who has seen the terms of life change around him." That was true for Conly *and* his many readers.

Conly spoke to many of these anxieties in his books. *The Silver Crown* (1968) addressed concerns over scientifically engineered education and mind control. Conly's, *Mrs. Frisby and the Rats of NIMH* (1971), which is usually associated with animal rights first and foremost, also included references to genetic engineering and technological materialism. Conly's sole contribution to adult fiction was a Cold War thriller: *A Report from Group 17* (1972). The book featured escaped Nazi War criminals, bioweapons research, and scientific sadism. Conly's final work, *Z for Zachariah*, which was published posthumously in 1972, was set in a post-apocalyptic world and depicted the darkest sides of human behavior (and, in this case, an unethical scientist's behavior) in such a world.

What is also remarkable about Conly is that three of his four works were meant for youth readers. These books used science fiction and fantasy not to give children tales of escapism, but rather to introduce real-world problems and give them ways to think about them. Nor did he veil his messages under metaphor or euphemism – Conly's books do not shy away from realistic language or depictions of situations. *The Silver Crown* and *Mrs. Frisby and the Rats of NIMH* may have fantastical elements, but their infusion of a sometimes frightening or cruel reality offered children the chance to develop critical thinking skills about these issues. During the process of reading a book, said Conly, a child's mind also has the opportunity to learn that "it is

not easy to separate good from bad,” and “that not all doors are simply open or shut.”⁴ Even his adult work, *A Report from Group 17*, leaves the reader with a sense of ambiguity regarding the intentions of some of the protagonist’s allies.

Ambiguity can be frightening, but that was the reality that Americans were facing – one where the sci-tech world was no longer one that could be blithely trusted to bring a “promised land,” but one which left them in continual limbo – and with a fear of possible hells to come. Conly’s placement in the news world would have left the already nervous author constantly exposed to the emerging developments in science and technology, and the news of its misuse. In-depth readings of his books reveal that Conly’s works, taken together, clearly reflect the many scientific and technological anxieties present in 1960s American culture.

⁴ “Robert C. O’Brien.” *Authors & Artists for Young Adults*, Gale, 2006.

Chapter One: *The Silver Crown*

A Modern Fairy Tale for Children

A Modern Fairy-Tale for Children? While the title of Robert Conly's first book, *The Silver Crown*, conjures up visions of a tale of queens and magic, it is not at all that kind of fairy-tale. Reviewers ardently agreed that the book was not a mere fairy story: *Horn Book's* Susan Boulanger called *The Silver Crown* "a heartening and subtle story of the possibilities for action against the daunting, even overwhelming, personal and public dilemmas of our time."⁵ For example, parents might have seen B.F. Skinner's teaching machine in the Hieronymus Machine and the dark King's training school like that of Skinner's approach toward using applied behavioral science to "program" society and education.⁶ In the ways in which the kidnapped children are trained by malignite, one might have found oneself thinking of drugs, both recreational and experimental, that seemed conducive to mind control. *The Silver Crown* most certainly echoes the concerns of the 1960s, addressing the theories of behavioral engineering, the advent of mechanized education, and science's investigations into brainwashing techniques.

⁵ "Robert C. O'Brien, 3"

⁶ B.F. Skinner was a leading twentieth-century American psychologist and behaviorist best known for his work in operant conditioning and theories in applied behaviorism.

In *The Silver Crown*, the lead character, a young girl named Ellen Carroll finds herself the sole survivor of her family. Ellen, who had been out playing with a gift from her aunt, a silver crown, returns to find her home burned to the ground. She decides to travel to the home of her aunt, however, along the way she finds herself the target of the minions of a “dark King” whose stronghold in the midst of the woods is a training site for kidnapped children. Here, the children are programmed to commit acts of violence and chaos – including murder. Ellen’s crown is the key to the “dark King’s” success. The brainwashing is done by the “Heironymus Machine,” a machine created by a centuries-old cult which is ultimately controlled by the two crowns, Ellen’s silver and the dark King’s black. The kidnapped children are given numbers instead of names and are forced to be “in-tune” with the machine via the help of an element called “malignite.” Ellen must discover the secret and free the children through her own personal power and the power of the silver crown.

The Silver Crown was not the first twentieth century book to use a “fairy-tale” to call attention to the possibly dangerous implications of using applied science/technology to “fix” human civilization. C.S. Lewis, of *The Chronicles of Narnia* fame, subtitled his book, *That Hideous Strength* (1945) as *A Fairy-Tale for Grown-Ups*. In *That Hideous Strength*, the battle of “good” and “evil” is represented by the forces of a mythologized Christianity arrayed against villainous institution of the N.I.C.E. The goals of the N.I.C.E. (National Institute for Co-ordinated Experiments⁷) is to use applied science to gain complete control over society. “If Science is really given a free hand,” says one of the N.I.C.E. representatives in the book, “it can

⁷ The resemblance to N.I.M.H. (National Institute of Mental Health) is not lost here, although there is no evidence that the book was any direct influence on Conly’s works. Lewis also uses the work as a venue to express his views on the usage of firearms and other weaponry to subdue opposition and to raise concerns over the suffering of animals used in vivisectional experiments

now take over the human race and re-condition it: make a man a really efficient animal."⁸ Even without the Christian moorings of the book's protagonists, Lewis's book clearly issues a clarion call for ethics in a world becoming increasingly dominated by a scientific elite. In an essay by Loren Eiseley called "Man: The Lethal Factor," Eiseley describes *That Hideous Strength* as "one of those profound morality plays which C.S. Lewis is capable of dossing off lightly in the guise of science fiction."⁹ Interestingly enough, Loren Eiseley was an influence of Conly's, as the author stated in his Newbery-award speech for *Mrs. Frisby and the Rats of NIMH*.

While Conly may or may not have been inspired by Lewis's novel, Conly's manuscripts of *The Silver Crown* contain handwritten notes expressing concern that one of the book's characters may bear too close a resemblance to another fantasy giant: Lewis colleague and author J.R.R. Tolkien. In Conly's original manuscript, Conly wonders if calling the benevolent character "Mrs. Gray" would result in too much of a resemblance to Gandalf (i.e. Gandalf the Gray in the *Lord of the Rings* novels). Ellen's crown, also, seems to bear some similarities to the One Ring, an object whose great power could be used for great good or for great evil, and is sought out by dark-clad minions of the antagonist. Not only does Mrs. Gray explain to Ellen that the history behind the crown is one of both good and evil, but one later note reads, "Object: to rule all – to destroy."¹⁰ *The Silver Crown* embodies Conly's suspicion of twentieth-century totalizing systems of thought, whether political or scientific

During the twentieth century, including the 1960s, scientists were, indeed, seeking to apply rigid, scientific principles to society as whole. "People are manipulated; I just want them to

⁸ Lewis, *That Hideous Strength: A Modern Fairy-Tale for Grown-Ups*, 40-41.

⁹ Eiseley, "Man: The Lethal Factor, 78"

¹⁰ "Robert C. O'Brien Papers, Children's Literature Research Collections, University of Minnesota Libraries, Minneapolis," n.d.

be manipulated more effectively," said American behaviorist B.F. Skinner.¹¹ Skinner, a figure of controversy in American culture, was an advocate of using the results of his behaviorist experiments with animals to improve human society.¹² Examples of Skinner's theories, and opposition to them, are littered throughout twentieth-century American history. Skinner is probably best known for his work with rats, using a device that dispensed treats as rewards for learning skills. In those experiments, the rat was kept in a small, boxlike enclosure that came to be known as the "Skinner Box." When Skinner introduced the concept of the Air Crib, an environmentally controlled enclosure he proposed improved children's well-being and learning skills, the invention made Skinner a household name. It was name not always spoken of in reverence, however. Among the many reasons that American parents were leery of the invention was no doubt the thought that the Air Crib was a kind of Skinner Box -- for humans instead of rats. Some opposition was so virulent that false rumors even began to spread, including one which said that Skinner's own daughter had ostensibly gone mad by being kept in one of the devices.

Skinner's fictional work, *Walden Two*, published in 1945, just three years after Lewis's *That Hideous Strength*, might have been an example of a world that *That Hideous Strength* had warned against. *Walden Two* depicted discussions between scientists and social theorists surrounding the creation of a utopian community created solely by experimental parameters. In it, Frasier, the creator of *Walden Two* takes the group on a tour of the community's educational facilities. One character describes the first year of the child as one in which they live in "an air-conditioned cubicle" and then describes the other children's living arrangements as follows:

¹¹ Taylor, *Brainwashing: The Science of Thought Control*, 233.

¹² Taylor, *Brainwashing: The Science of Thought Control*, 233.

“The living quarters of the older children furnished a particularly good example of behavioral engineering” and then shortly afterward, he “began to make out a comprehensive, almost Machiavellian design.”¹³ Even though the book is clearly in favor of Frasier’s proposition for scientifically-planned communities, it is in itself interesting that Skinner has one of the lead characters mention the (in)famous author of *The Prince* in the text.

Another Skinnerian-concept was attracting controversy in the 1960s: the “teaching machine.” The teaching machine used positive reinforcement to aid in children’s acquisition of facts. Although Skinner’s teaching machine deliberately avoided the use of negative reinforcement, one still sees parallels between Skinner’s proposal to make teaching machines an integral part of the educational process and Conly’s dark King’s usage of the Hieronymus Machine and malignite to teach courses in subjects such as “Elementary Destruction” to the captive children.

The Silver Crown also frequently employs language that bears resemblance to that used in Skinner’s field of study. During Ellen’s imprisonment, she meets another young girl: Genevieve. As she explains why the children are given alphanumeric names instead of proper names, Genevieve tells Ellen it is “because it’s more efficient. They’re very efficient.”¹⁴ Genevieve also explains to Ellen that the “hypnotism” is stronger when connected to the Hieronymus Machine, where they “put her for treatments.”¹⁵ When Ellen is about to meet the dark King, she hears a recording which describes the building as “an experiment” that she must learn about.¹⁶ Later in the book, when the topic of the “big screen” is raised, Ellen muses that it

¹³ Skinner, *Walden Two*, 107.

¹⁴ Here again, with the word “efficient,” one also thinks of Lewis’ N.I.C.E.

¹⁵ O’Brien, *The Silver Crown*, 236.

¹⁶ O’Brien, 251.

“must be the playpen thing” she had seen through the gate.¹⁷ Here is where Skinner comes full circle in Conly’s novel – from Air Crib to Teaching Machine and back again.

Then there is the Hieronymus Machine itself. Ellen describes the machine in One Ring-like language, as she learns more about the dark King’s plans:

For the machine was evil. She knew it was evil even though it was now, in a sense, hers. It was evil not necessarily in itself - for how could a machine known "good" from "bad"? - but because it was dangerous, and it was dangerous because it was too powerful, no matter who wore the crown, no matter who controlled it.¹⁸

The Silver Crown’s Hieronymus Machine was likely loosely based on the real-life work of a twentieth-century American inventor by the name of Hieronymous T. Galen. Patented in 1949 (the same year that *The Silver Crown*’s archaeologist finds one of two crowns that would power the ancient Hieronymus Machine), Galen announced that his machine could “analyze the ‘eloptic radiation’ of minerals, a new type of radiation.”¹⁹ The Hieronymous Machine was the butt of jokes in the scientific circles of the time and would have likely fallen into obscurity if it were not for the editor of *Astounding* magazine, William T. Campbell. In June 1956, Campbell first spoke of Hieronymous’s machine in an article called “Psionic Machine – Type One.” He would go on to feature the machine in at least one other issue of *Astounding* and so completely believed in the power of the machine that he personally presented his own version of the machine at the New York Science Fiction Convention of the same year. Like Galen’s machine, it, too, became the butt of jokes and was considered to be all so much quackery.

¹⁷ O’Brien, 267.

¹⁸ O’Brien, 300.

¹⁹ Gardner, *Fads and Fallacies in the Name of Science*, 347.

Campbell and Galen were purported to have carried on extensive conversations about the possibilities of the machines throughout the 1950s. *The Story of Eloptic Energy* includes a series of letters (some of which appear to be on Campbell's letterhead) between the two that discuss designs and uses of the machine. The letters are particularly interesting because of the scientists and organizations they mention. While the documents are highly suspect and of more than dubious reliability, in one of them Campbell claims that their projects have garnered the attention of corporate interests like Esso, scientists such as Otto Rahn of Cornell University, the Rand Corporation, and "father" of the information field, Claude Shannon. At one point, Campbell tells Galen that Shannon is interested in talking to him. When Galen does not hear back, he complains to Campbell; Campbell responds that Shannon has been called to participate in the Institute for the Advanced Study of Behavioral problems at Stanford for one year. Campbell explains the Institute as "a major Ford Foundation setup which has been inviting the top creative thinkers...of science to help attack the major problem that Man faces right now. The problems of psychology and sociology."²⁰ Information on such an institute is not readably available, so one wonders if this is another of Campbell's "inventions." However, it could also be true, and the idea would not be too far-fetched. It was well-known to Americans that leading scientists in all fields were, after all, often called upon to participate in think-tanks formed to address societal issues – both through public and private organizations (including governmental organizations) – so it would be no surprise for Conly to be even more keenly aware of such connections.

Some concepts and theories in the letters resemble elements of *The Silver Crown*. For example, Campbell often used his young daughter in the demonstration of his machine. Although

²⁰ Sarah Williams Hieronymus, *The Story of Eloptic Energy* (Lakemont, GA: The Institute of Advanced Sciences, 1988, 198).

it may have been said tongue-in-cheek, when Campbell and Galen discuss broader applications of the machine, Campbell says that they cannot use children with “child laws being what they are.”²¹ In a letter discussing uses of the machine in criminal justice matters, Campbell underlines his assertion that criminals are afraid of punishment, and such a fear of punishment by the “screen” is expressed by Arthur Gates in *The Silver Crown*. Even if the letters and biographical information are fraudulent, it is possible that the resourceful and connected Conly may have somehow become familiar with the information contained therein. As in all of his books, Conly never has just one influence or concern that leads him to write – he assimilates a wide assortment of research and knowledge to produce complex fictional commentary on his contemporary world.

Another likely real-life source for some aspects of the dark King’s “punishments,” however, is Stanley Milgram’s famous “obedience to authority” experiments.²² At one point during Ellen’s visit with the dark King, the King berates Brother Michael for “draining the circuits.” Brother Michael explains that the patient he is training shows no response, even at “Force twenty.” This discussion of scale, and the surprised reactions to the usage of the upper levels of the scale, are reminiscent of the dials used to administer increasingly harmful “shocks”

²¹ Hieronymus. 162.

²² Stanley Milgram was an American social psychologist who conducted his most famous “Obedience to Authority” experiments in the 1960s. Milgram named the German population’s complicit acknowledgement of and role in the Holocaust as inspiration. In the experiments, a group of volunteers offered to become “teachers” in an experiment that was supposed to be about the improvement of learning. These “teachers” were told that their “learners” were to be given questions to answer, and, in the case of incorrect answers, administered a “shock.” The “teachers” were instructed to increase the shock level via a dial – a dial which indicated that the increased levels would become more increasingly painful. The “teachers” were told by the researcher that they were to continue the shocks, despite any protest. What the “teachers” did not know was that both researcher and subjects were playing a role – the researcher to give the false premises of the study and the “learners” were actors and did not receive shocks. The results showed that people were willing to continue to the highest shock levels, even when the actor/“learner” begged the “teacher” to stop. The results shook the research community and the American public, and, interestingly enough, in the end, caused stricter rules around informed consent in human research.

to the “learner” in the Milgram experiments.²³ Despite the fact that the higher end of the dial scale was labeled as dangerous, the “teachers” continued to increase the shocks through the full range.

The concept of “brainwashing” first became popularly discussed as a result of reports of mind-control experiments conducted on American soldiers during the Korean War. In the 1960s, the subject remained an American topic of discussion, with Robert J. Lifton’s book, *Thought Reform and the Psychology of Totalism: A Study of "Brainwashing" in China*, bringing the topic directly to the purview of the American public in hardcover in 1961, and in mass market paperback in 1963. In between those years, the movie *The Manchurian Candidate* hit theatres, no doubt imprinting visions of such manipulations (and tortures) permanently in the minds of the viewers.²⁴

Americans of the 1960s were also thinking about LSD, and on it. Leading figures of 1960s counterculture became enthusiastic advocates of the drug.²⁵ However, despite its reputation as a recreational drug, rumors had long been circulating that LSD was one of many drugs and other methods used in a CIA mind-control program called MKULTRA. The government allowed the rumors to swirl until a 1975 congressional report revealed the project to the public. Until then, however, those who spoke of the government attempts to “brainwash” people were largely treated as conspiracy theorists and fringe elements.

²³ O’Brien, *The Silver Crown*, 233.

²⁴ Packer, *Cinema’s Sinister Psychiatrists*, 25.

²⁵ Conly himself wasn’t fond of LSD in its own right, after all, he cites it as one of the many tools of destruction used by the minions of the Hieronymus Machine.

MKULTRA was started in the 1950s and officially declared ended in 1973. The project allied the CIA's Office of Scientific Intelligence and U.S. Army Biological Warfare Laboratories at Fort Detrick. It also involved leading, and sometimes unscrupulous, scientists from across the United States. It was a time of no-holds-barred research spurred on by the "communist threat." Stanley Lovell, according to John D. Marks in *The Search for the "Manchurian Candidate": The CIA and Mind Control* (1979), openly boasted that he enjoyed the opportunity to encourage scientists to ignore any ethical or legal red-tape. He said it was his job "to stimulate the Peck's Bad Boy²⁶ beneath the surface of every American scientist," and asserted that "[o]nce at war, reason is treason."²⁷ Harold Wolff, a Cornell sociologist who was invited to take part in the project, enthusiastically joined, requesting information on topics including "brainwashing" and "black psychiatry."²⁸ Wolff even offered up his own patients (without their consent) as guinea pigs for experimentation. When experimental avenues *were* ended, said Kathleen Taylor, author of *Brainwashing: The Science of Thought Control* (2004), "these tortures were abandoned" not out of moral consideration, but rather because they "failed to prove reliable."²⁹

Some of these experiments conducted in the late 1950s/early 1960s may have planted the seeds for future violent behavior in its subjects. In 1998, Ted Kaczynski, popularly known as the Unabomber, went on trial for his attempted and successful attempts on the lives of the technological elite. Kaczynski's lawyers cited a study done on twenty-five Harvard students as a reason for Kaczynski's psychological problems. "The study, done before such research projects were subject to ethical oversight," said Edwin Black, "exposed the students to sustained and

²⁶ "Peck's Bad Boy" was the nickname for a rather notorious character of American novel and screen whose pranks often turned cruel or violent.

²⁷ Marks, *The Search for the "Manchurian Candidate": The CIA and Mind Control*, 13-14.

²⁸ Marks, *The Search for the "Manchurian Candidate": The CIA and Mind Control*, 149.

²⁹ Taylor, *Brainwashing: The Science of Thought Control*, 234.

intense criticism” in order to give the researchers insight on how to mold human behavior. The research was, according to Black, tied to the CIA and possibly also connected to MKULTRA.³⁰

The Silver Crown has, of course, a happy ending – but it is a happy and thoughtful ending. Like C.S. Lewis, Conly was a master at combining fiction with real world concerns and ethical considerations. The antagonist of *The Silver Crown*, in the end, turns out to be the machinery itself, and not the dark King who had become a slave to it. However, even here, Conly is careful to indicate that the machine is the product of unethical minds and supported by either complicit or compelled minions. During the 1960s, Conly, certainly no Luddite, did have concerns about plans to create technology that would directly address important societal concerns, including the education of the young. To think of combining such mechanical technology with the technology of mind-control was the kind of ending Conly couldn’t compose for his fairy-tale, or, so he hoped, the kind of ending that could occur to human civilization.

³⁰ Black, *War Against the Weak: Eugenics and America’s Campaign to Create a Master Race*, 188.

Chapter Two: *Mrs. Frisby and the Rats of NIMH*

The story was part of a book of essays, and the reason I had read it so eagerly was that it was called "The Rat Race" - which, I learned, means a race where no matter how fast you run, you don't get anywhere. But there was nothing in the book about rats, and I felt bad about the title because, I thought, it wasn't a rat race at all, it was a People Race, and no sensible rats would ever do anything so foolish.

Nicodemus in *Mrs. Frisby and the Rats of NIMH*³¹

Called “[i]ngenious, credible, and sometimes moving” in *Children’s Books of International Interest*, *Mrs. Frisby and the Rats of NIMH* has been, ever since its release, praised highly by scholars and reviewers of children’s literature.³² In 1985, Alethea K Helbig called *Mrs. Frisby* “a combination of science fiction and animal fantasy” that described “fantastic situations with scientific accuracy.”³³ Scholar Paula T. Connolly noted the book for Conly’s “gradations of moral understanding and culpability” while dealing with “such problematic issues as the roles of science and technology, identity, idealism, family life, forms of community and means of survival.”³⁴ The positive reviews for Conly’s pivotal work seem endless, as do the number of issues the ambitious Conly set out to address in the novel.

³¹ O’Brien, *Mrs. Frisby and the Rats of NIMH*, 169-170.

³² Virginia Haviland, ed., *Children’s Books of International Interest* (Chicago: Americal Library Association, 1972).

³³ Helbig, “Robert C. O’Brien’s *Mrs. Frisby and the Rats of NIMH*: Through the Eyes of Small Animals,” 206.

³⁴ Paula T. Connolly, “Frisby-Turned-Brisby: The Resolution of Ambiguity in *The Secret of NIMH*,” in *The Antic Art* (Fort Atkinson, WI: Highsmith Press, 1993).

Of Conly's four books, *Mrs. Frisby and the Rats of NIMH* is not only the most well-known, but it is also the book which addresses the broadest range of social issues. It also almost didn't come to pass. Conly began writing his most famous book in November 1967, while working on *The Silver Crown*, and had almost abandoned the book in March 1968 – after only two chapters.³⁵ Then, in 1969, Conly's work with National Geographic took him to the laboratories of John B. Calhoun, a behaviorist researcher who worked for the National Institutes for Mental Health. Calhoun, who was then doing research on the improvement of intellectual capacities in rats, had been well-known in the 1960s for his work on overcrowding and his development of the concept of societal breakdown which he called the "Behavioral Sink."³⁶ The visit would "set him thinking."³⁷ That fateful meeting may have been the spark that would lead to the creation of a tale that would address American concerns about genetic engineering and technological materialism.

The Biological Time Bomb, written by Gordon Rattray Taylor and released in 1968, is notable for its intent to bring the ethical concerns of biological engineering to the public at large. Geneticist and philosopher C.H. Waddington, author of books such as *The Ethical Animal* (1960) and *Biology, Purpose and Ethics* (1971) included the following passage in the review of Taylor's book in *The New York Review of Books*:

His book is in fact the first major exposition, addressed to the general public, of questions which are going to be very much with us in the next few decades. The main question his book raises is simple to state, and very difficult to deal with. It is that the pursuit of

³⁵ Klingman, *Newbery and Caldecott Medal Books 1966-1975*.

³⁶ For more information on John B. Calhoun and his rat/mouse studies, see the Appendix.

³⁷ Conly O'Brien, "Intelligence and Utopia in Mrs. Frisby and the Rats of NIMH," 205

knowledge eventually brings the power to control the subjects the knowledge is about; and power can be used for many purposes, including undesirable or evil ones as well as good. Taylor's aim is to show that biological knowledge is on the point of presenting us with powers that might be as double-edged as the control of atomic energy proved to be.³⁸

In *The Biological Time Bomb*, Taylor warns that the privileged reputation of the scientist as a "miracle worker" could eventually become one of a "mad engineer, applying his arcane knowledge regardless of the human consequences, causing disasters, manufacturing monsters, prepared even to move the earth from its course or extinguish the sun to test his theories."³⁹ Books such as Taylor's often used the words of scientists to support their assertions. For example, Taylor quoted famed geneticist Francis Crick, who suggested that "the development of biology is going to destroy to some extent our traditional grounds for ethical beliefs."⁴⁰ James T. Patterson, in his non-fiction book about the 1960s *The Eve of Destruction*, quoted the words of scientist Rollin Hotchkiss who ominously predicted that research into the manipulation of DNA could not be stopped. "It will surely be done or attempted," Hotchkiss said, adding that "[t]he pathway will be built from a combination of altruism, private profit, and ignorance."⁴¹

It is important to note here that Dr. Schultz and his graduate students in Conly's book are *not* the mad, sadistic scientists portrayed by the 1982 Bluth film, *The Secret of NIMH*. Conflation of the two movies often gives Conly an unfair reputation for being virulently anti-scientist and

³⁸ C. H Waddington, "'The Biological Time Bomb' by Gordon Rattray Taylor (Book Review)," *The New York Review of Books* 12, no. 11 (1969): 29.

³⁹ Taylor, *The Biological Time Bomb*, 219.

⁴⁰ Taylor, 10.

⁴¹ Patterson, *The Eve of Destruction: How 1965 Transformed America*, 143.

anti-science. This point is reiterated by reviewers of the text who deride the movie for muddling the subtle commentary that Conly provided in *Mrs. Frisby and the Rats of NIMH*. Part of the effectiveness of the book lies in its portrayal of real-life issues in shades of grey, not in black and white. Paula R. Connolly supported this view when she said that “[d]espite O'Brien's obvious criticisms of the overambitious goals of science and the dangers of experimentation, he is careful not to provide facile characterizations of scientists.”⁴² Nevertheless, the book was not well-received in scientific circles. Catherine L. Elick cites a *Science* magazine article in which authors Deborah Runkle and Ellen Granger attacked “juvenile magazine articles and novels like *Mrs. Frisby and the Rats of NIMH*” for “propagandizing” children and accused “teachers of subjects other than science” of “promoting the animal rights agenda during a discussion of civil rights.”⁴³ The Smithsonian Institution, which included the book in a teaching list about animal research issues, also gained the ire of the American Association for the Advancement of Science whose members felt the book was an unbalanced attack on scientific research.

Conly’s book, indeed, does not condone Dr. Schultz and experimentation he conducts on the rats. It is his subtlety, which, in fact, makes the message more effective: Alethea K. Helbig describes Dr. Schultz as having a “cold, dispassionate manner [which] increases the horror of what may happen.”⁴⁴ Conly’s daughter, in her essay “Intelligence and Utopia in *Mrs. Frisby and the Rats of NIMH*,” notes the willingness of the scientists to “attack with cyanide gas a group of rats they believe to be as intelligent as themselves.”⁴⁵ Catherine L. Elick, in *Talking Animals in Children’s Fiction*, said that *Mrs. Frisby and the Rats of NIMH* presented “not only a harsher

⁴² Connolly, “Frisby-Turned-Brisby: The Resolution of Ambiguity in *The Secret of NIMH*,” 78.

⁴³ Elick, *Talking Animals in Children’s Fiction*, 217.

⁴⁴ Helbig, “Robert C. O’Brien’s *Mrs. Frisby and the Rats of NIMH*: Through the Eyes of Small Animals,” 208.

⁴⁵ Conly O’Brien, “Intelligence and Utopia in *Mrs. Frisby and the Rats of NIMH*,” 214

view of humanity but also a stronger call to see animals as intelligent, rights-bearing individuals.”⁴⁶ She also alludes to Shelley’s *Frankenstein*, proposing that “Dr. Frankenstein’s inexorable hunt for his creature through frozen wastes” parallels the attempt to exterminate the rats of NIMH.”⁴⁷ The literate rats of NIMH are well-aware of their differences to regular rats, noticing the changes in their size and intelligence, as well as the ways in which their former brethren seem to be intimidated by them. This is clear in a discussion between Nicodemus and Jenner in which Nicodemus says:

The real point is this: We don’t know where to go because we don’t know what we are....
But the fact is, we aren’t rats any more. We’re something Dr. Schultz has made... Where does a group of civilized rats fit in?⁴⁸

There is another possible reason, however, that Conly’s scientist chooses to be willing to attempt to exterminate the possibly re-discovered rats of NIMH rather than capture the rats under the Fitzgibbon rosebush at the conclusion of the book. Many animal experiments, including those in the fields of genetic engineering, end in the purposeful deaths of the animals in order that the scientists can then dissect the corpses in order to learn the effects of the experiments upon the physiology of the animal. This practice, which still occurs today, is done not only in the name of scientific analysis, but simply because any additional upkeep of laboratory animals post-experiment is viewed as too costly.

Materialism – and the thing about “things” - is another of *Mrs. Frisby’s* major foci.

Alexis de Tocqueville, in now famous observations of mid-nineteenth American culture,

⁴⁶ Elick, *Talking Animals in Children’s Fiction*, 210.

⁴⁷ Elick, 219.

⁴⁸ O’Brien, *Mrs. Frisby and the Rats of NIMH.*, 137

declared that materialism was a “dangerous disease of the human mind,”⁴⁹ a phrase which closely resembles Nicodemus’s own talk of “a feeling of discontent [which] settled upon us like some creeping disease.”⁵⁰ Nicodemus was here describing the feeling of the rats after they had given themselves every gadget and luxury in their home beneath the Fitzgibbon rosebush. America, too, was feeling some of this malaise, as evident in the anti-materialist sentiment that rose to the forefront in 1960s counterculture.

By the 1960s, the proliferation of technology led to a whole new facet to such materialism. Elaine Taylor, in *The Commodity Gap: Consumerism and the Modern Home*, stated that Richard Nixon linked “consumer aspirations to scientific expertise” in 1959.⁵¹ An exchange between President Nixon and Soviet Premier Nikita Khrushchev, now immortalized as the “Kitchen Debate,” featured a Nixon who trumpeted the capabilities of American technology against a Khrushchev who jokingly asked the President if the United States had “a machine that puts food in the mouth and pushes it down?”⁵² Ruth Schwartz Cohen’s *More Work for Mother* noted that American affluence wasn’t just indicated by the typical signs of wealth such as home size and automobile make, but also by “toilets, refrigerators, and washing machines.”⁵³ Popular culture, too, expressed a sense of malaise with materialism, such as in the Monkees’ 1967 hit, “Another Pleasant Valley Sunday,” in which the singer laments that “[c]reature comfort goals, they only numb my soul” and “make it hard for me to see.” Anti-materialism was a prominent

⁴⁹ Tocqueville, Reeve, and Spencer, *Democracy in America / by Alexis de Tocqueville ; Translated by Henry Reeve ; with an Original Preface and Notes by John C. Spencer*, 154.

⁵⁰ O’Brien, *Mrs. Frisby and the Rats of NIMH*, 169.

⁵¹ May, “The Commodity Gap: Consumerism and the Modern Home,” 299.

⁵² May.

⁵³ Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave*, 195.

theme in 1960s counterculture, with many members eschewing such consumerism and advocating a return to a simpler life, including those which advocated a return to the land.

Anthropologist Loren Eiseley's *The Immense Journey* (1962) opens with a chapter in which the author describes himself observing a community: "[L]istening to the talk ringing out from neighbor to neighbor" and "seeing the inhabitants drowsing in their doorways." It is not a human city, Eiseley reveals, but "prairie dog town."⁵⁴ Eiseley then relates a tale of human evolution in which the roles of rodents and the early primates play pivotal roles. Eiseley describes the rodent predecessor as a "shabby little Paleocene rat, eternal tramp and world wanderer" and the "father of all mankind."⁵⁵ Using detailed scientific language, Eiseley suggests that without these rodents, the early primates would have remained tree-dwelling mammals.

Compare Eiseley's theories in *The Immense Journey* to the following passage from *Mrs. Frisby*:

But there was one book, written by a famous scientist, that had a chapter about rats. Millions of years ago, he said, rats seemed to be ahead of all the other animals, seemed to be making a civilization of their own. They were well-organized and built quite complicated villages in the fields. The descendants today are the rats known as prairie dogs. But somehow it didn't work out. The scientist thought maybe it was because the rats' lives were too easy; while the other animals (especially the monkeys) were living in the woods and getting tougher and smarter, the prairie dogs grew soft and lazy and made no more progress. Eventually the monkeys came out of the woods, walking on their hind

⁵⁴ Eiseley, *The Immense Journey*, 4. It seems likely that Eiseley, if not Conly, may have also been familiar with the work of renowned mammologist John A. King whose 1955 dissertation on prairie dogs was called "Social behavior, social organization, and population dynamics in a black-tailed prairie dog town in the Black Hills of South Dakota."

⁵⁵ Eiseley, *The Immense Journey*, 5.

legs, and took over the prairies and almost everything else. It was then that the rats were driven to become scavengers and thieves, living on the fringes of a world run by men.⁵⁶

Rats taken out of the wild and kept in captivity had also been observed to undergo profound changes. In *Mankind Evolving* (1962), Theodosius Dobzhansky concluded that the laboratory rats of the mid-twentieth century had undergone significant evolutionary changes since being sequestered from their wild cousins in the mid nineteenth-century. Because the lab rats' "struggle for survival no longer exist[ed]" they exhibited "smaller adrenal glands and less resistance to stress, fatigue, and disease than wild rats."⁵⁷ Such observations could have influenced Conly's work. This can be seen in Dr. Schultz's dialogue with the men who have trapped Nicodemus and the other city rats. When one of the men reports to Dr. Schultz that the wild rats seemed "almost tame," Schultz replies, "I hope not. I already have enough tame ones."⁵⁸

There had been other twentieth-century books that had included rats and mice in discussions of science and technology and its effect on human civilization, including *Doctor Doolittle's Zoo* (1925) and *Flowers for Algernon* (1966). It seems likely that the character of Nicodemus may have been inspired in part by a rat in *Doctor Doolittle's Zoo*. In a story called "The Volcano Rat," the leader of the rat and mice complain of how he fears "rat and mouse civilization" may regress due to its proximity to humans and their technology. He calls the rats and mice who want to continue to live in this way "parasites," a description that resembles Nicodemus's assertion that to stay on the Fitzgibbon farm would make the rats like fleas on a

⁵⁶ O'Brien, *Mrs. Frisby and the Rats of NIMH*, 160.

⁵⁷ Dobzhansky, *Mankind Evolving*, 326.

⁵⁸ O'Brien, *Mrs. Frisby and the Rats of NIMH*.

drowning dog.⁵⁹ The story also includes a white mouse – a possible inspiration for Mr. Ages, the white mouse who, along with Mr. Frisby, escapes from the lab with the rats of NIMH. However, Conly’s book takes the story much farther, making a far more comprehensive commentary on the rodents’ situation, and, rather than leaving the story in dystopia, creates a path toward utopia in Thorn Valley.

Technological materialism was not only dangerous to a species’ evolutionary progress, according to Nicodemus, but it also had dangerous implications for the environment. Nicodemus’s allegory of “Keeping up with the Joneses” reveals that the damage caused by materialism is far greater than that of the dent in the pocketbook, but environmental degradation:

I was reminded of a story I had read at the Boniface Estate when I was looking for things written about rats. It was about a woman in a small town who bought a vacuum cleaner. Her name was Mrs. Jones, and up until then she, like all of her neighbors, had kept her house spotlessly clean by using a broom and a mop. But the vacuum cleaner did it faster and better, and soon Mrs. Jones was the envy of all the other housewives in town - so they all bought vacuum cleaners, too. The vacuum cleaner business was so brisk, in fact, that the company that made them opened a branch factory in town. The factory used a lot of electricity, of course, and so did the women with their vacuum cleaners, so the local electric power company had to put up a big new plant to keep them all running. In its furnaces the power plant burned coal, and out of its chimneys black smoke poured day and night, blanketing the town with soot and making all the floors dirtier than ever. Still, by working twice as hard and twice as long, the women of the town were able to keep

⁵⁹ Lofting, *Doctor Dolittle’s Zoo*, 139.

their floors almost as clean as they had been before Mrs. Jones ever bought a vacuum cleaner in the first place.⁶⁰

Compare this to a passage from French technology-critic Jacques Ellul's description of the problems of household technology from his book, *The Technological Society*:

For example, to make housework easier, garbage-disposal units have been put into use which allow the garbage to run off through the kitchen sinks. The result is enormous pollution of the rivers. It is then necessary to find some new means of purifying the rivers so that water can be used for drinking. A great quantity of oxygen is required for the bacteria to destroy these organic materials. And how shall we oxygenate the rivers? This is an example of the way technology engenders itself.⁶¹

Americans, including American President John F. Kennedy, were also thinking about the effects of science and technology on the environment – in no small part because of Rachel Carson's *Silent Spring*. The work which was first serialized in *The New Yorker* and eventually published in 1962, immediately gained wide readership and bestseller status. Her whistleblowing on the pesticide industry may have gained her friends, but it also gave her dire enemies. The book is considered the spark for the environmental movement which would fully emerge with vigor in the 1970s.

Overall, *Mrs. Frisby and the Rats of NIMH*, served to provide children with a fully-fleshed out story, replete with messages of friendships and the importance of community, with a sub-story of far deeper implications. As in his other books, Conly's sense of concern for

⁶⁰ O'Brien, *Mrs. Frisby and the Rats of NIMH*, 169-170.

⁶¹ Ellul, *The Technological Society*, 92.

humanity's future in the face of rapidly expanding science and technology rings clear, giving both children, and, in some cases, their parents, much to think about and discuss.

Chapter Three: *A Report From Group 17*

The only novel written for an adult audience, *A Report from Group 17* (1972), is a tale of Cold War intrigue, pitting the scientists of a secret Russian biological weapons research lab against an American team of former biological weapons researchers. Along with the classic Cold War clash, Conly sprinkles in remnants of World War II in the form of Dr. Schutz, a former Nazi scientist who has escaped prosecution. In *A Report from Group 17*, a human subject joins the animal subjects as objects of experiments in biological and genetic engineering. Biological warfare, while not unheard of prior to the 1960s was becoming more science-reality than science fiction, and, hence, was becoming the subject of non-fiction discussed in American culture. *A Report from Group 17* was a tale that extended beyond a Cold War fear and it became a fictional representation of such books and reports, combined with news that some of the most repugnant Nazi war criminals, including scientists, had not only not been caught, but were alive and well and living in various countries across the globe.

Dr. Schutz, whose name is only one letter off from *Mrs. Frisby's* Dr. Schultz, is a former Nazi scientist who now works for the Russians at Villa Petrograd. Dr. Schutz is working on a biological weapon intended to be diffused into the waterways, mentally stultifying the Americans who drink the tainted water. The reader is introduced to the character via Schutz's

thoughts on the progress of his testing and his frustration that he is not allowed a human subject (or, interestingly, even rats) upon which to test his results. In an inner dialogue Schutz lambastes one of the Russian administrators of the projects as “stupid” and insists that “[h]umans MUST be used in the experiments to produce reliable results: after all, he had “proved it - in Silesia in 1943.”⁶² It goes almost without saying that this is certainly a reference to the horrific human experimentation done by the Nazis in the 1930s and 1940s.

Conly includes a frontispiece in *A Report from Group 17* which is composed of a series of three passages written by a “Marshal Dubrev Vasilovsky.” The first statement discusses “the ultimate chess game” in which causing the other opponent to age is the only way to win. In the second, Vasilovsky states that since all overt methods of attack are excluded by agreements between the superpowers, “[o]nly biological attack remains, which need never be overt.” In the final passage, Vasilovsky discusses a theory supported by historians and archaeological evidence, that the “fall of Rome was not attributable to the Huns and Goths with their primitive military techniques, but to a subtle alteration in the chemistry of the Tiber, from which the city drew its drinking water.”⁶³ While no sources appear in relation to a “Marshal Dubrev Vasilovsky,” Russian Marshal Aleksandr Mikhaylovich Vasilevsky was featured on the cover of *Time* magazine on July 5, 1943 and a *New York Times* article on December 7, 1977. The article attributed the victory at Stalingrad to Vasilevsky’s military prowess and included a reference to his love for the game of chess. The “Dubrev Vasilovsky” and the notebooks, listed in the frontispiece as published in Leningrad in 1951, may have simply been Conly’s deliberate twist on the name of the leading Russian military leader who would eventually work with Stalin. In *A*

⁶² O’Brien, *A Report from Group 17*, 7.

⁶³ O’Brien, *A Report from Group 17*, frontispiece.

Report from Group 17, Vasilovsky is “nominally” in charge of biological warfare for the Soviet Union.⁶⁴

In 1968, investigative journalist Seymour Hersh’s book *Chemical and Biological Warfare: America’s Hidden Arsenal* alerted the public that there was much more to America’s chemical and biological weapons than the defoliant being used in Vietnam. The book relates the history of chemical and biological weapons (CBWs), including the post-war whereabouts of a German scientist by the name of Walter Schreiber. According to a Russian war tribunal, the Germans had been investigating germ warfare and had “a sworn affidavit” from Schreiber; however, such charges never appeared in U.S. records. In fact, when Schreiber was released by the Russians in 1951, he spent time in the service of the U.S. government. Like so many other German war criminals, however, Schreiber left for Argentina when the heat was on. While, according to Hersh, “[i]t is not known if Schreiber did any research into CBW while in the United States,” it certainly leaves much to the imagination.⁶⁵

CBW research was not kept entirely quiet, however. The public learned of some of these efforts in 1964 when the *New York Times*’ cover story featured U.S. research into the weapons. According to Seymour Hersh, dissent was reported within the government, with nuclear scientists being amongst those who spoke up:

Critics of the CBW program - most of them nuclear scientists - question why the United States would want to introduce another weapons system when, as one top planner said,

⁶⁴ As for the poisoned water of Rome, it has been suggested that Roman citizens probably did suffer from lead poisoning, although, in this case, not delivered by the hand of an enemy, but by the lead pipes that were used in the Roman water delivery systems.

⁶⁵ Hersh, *Chemical and Biological Warfare: America’s Hidden Arsenal*, 13.

"Hopefully we can have some restraints on it [CBW]...It's a weapon that's not to the U.S. advantage to have." Another scientist explained that "CBW places enormous emphasis on surprise, covert use and attacks against populations. What we're doing [with research] is making this stuff a gift to other countries. We have no need to standardize [approve for combat use] CBW," the official added. "We just may end up being a target for sneak attacks against our cities."⁶⁶

In 1969, a Senate report also raised alarms. The report was called *Chemical and Biological Weapons; Some Possible Approaches for Lessening the Threat and Danger*, and was prepared for the Special Subcommittee on the National Science Foundation of the Committee on Labor and Public Welfare - United States Senate. The report discussed the history of the protocols surrounding such weapons and called for strict observations of those protocols. Alarmingly, it asked if "A Doomsday Bug" was in the works and quoted an American scientist who, when asked what they were working on, chillingly replied "'A cure for metabolism.'"⁶⁷ Other countries also accused American scientists of unethical research in CBWs. In *We All Fall Down: The Prospect of Biological and Chemical Warfare* (1968), Robin Clarke cited the American use of chemical warfare in Vietnam as a concern. He then went on to provide substantiation for his claims that Americans were duplicitous in their claims that they no longer investigated CBWs for offensive purposes. Clarke brings up two 1967 articles in *Science* magazine that drew connections between universities and CBW research, and detailed actual locations where such weapons were being produced. He also devotes ample time to "the United

⁶⁶ Hersh, 36-37.

⁶⁷ Library of Congress. Science Policy Research Division and United States. Congress. Senate. Committee on Labor and Public Welfare. Special Subcommittee on the National Science Foundation, *Chemical and Biological Weapons; Some Possible Approaches for Lessening the Threat and Danger*, 58.

States centre for research into biological warfare...known as Fort Detrick.” He says that “[s]ome fifteen percent of the work [Fort Detrick] does find its way into the published literature; the rest is classified by the Department of Defense” and, interestingly in terms of *A Report from Group 17*, “[i]t has an animal farm to provide the subject-matter of experimental tests and the standard equipment of any microbiological laboratory.”⁶⁸ The coincidence seems hardly accidental.

Conly does seem to leave some mystery in the book as to whether or not the Americans themselves are also still working on biological weapons. In an early chapter, when the U.S. government contacts Fergus, the following conversation occurs between Fergus and a secretary:

""He's a colonel. He's from Washington. He wants to offer you a job. He's one of them."

She put the word "them" in italics with quotations marks around it.

"Miss Penfield, you forget. There is no more 'them' Germ warfare has been abolished."

"That's what they say. They didn't abolish the generals who ran it."⁶⁹

A Report from Group 17 also invokes the images of the Nazi doctors put on trial in Nuremberg. In the 1960s, the horrors of Nazi experimentation were once again haunting Americans. Valerie Hartouni, Professor of History of Consciousness at the University of California, Santa Cruz called the Adolf Eichmann trial a “reinvigoration” of “the ethos of Nuremberg,” and the entrance of the Holocaust into “popular culture and consciousness.”⁷⁰ The trials also came to life in a 1961 film, *Judgment at Nuremberg*. When Schutz complains that he is prohibited human subjects, some readers might find themselves thinking of Hitler’s personal

⁶⁸ Clarke, *We All Fall Down: The Prospect of Biological and Chemical Warfare*, 6.

⁶⁹ O’Brien, *A Report from Group 17*, 12.

⁷⁰ Valerie Hartouni, *War Crimes Trials in Popular Culture: The Afterlife of Nuremberg* (Oxford University Press, 2017), <http://oxfordre.com/criminology/view/10.1093/acrefore/9780190264079.001.0001/acrefore-9780190264079-e-199>.

physician Karl Brandt who said of human experimentation, "Do you think that one can obtain any worthwhile fundamental results without a definite toll of lives?"⁷¹ Of course, Dr. Josef Mengele, too, had garnered the attention, or revulsion, of the American public in the 1960s, his story and whereabouts covered in many books and articles that appeared to the American public.

Humans often find comfort in categorizing information in extremes of black and white. This proclivity, combined with the ways in which the Nuremberg trials were presented, resulted in a view of the criminals that presented them as wholly insane, or even alien. This was dangerous because the Nazi doctors came to be viewed as archetypal representations of evil, rather than as regular humans who had willingly and knowingly chosen to pursue unethical research. In *Dark Medicine: Rationalizing Unethical Medical Research*, the authors warned that the cultural perception of Nazi scientists as "mad" created the belief that unethical scientific practices could not have been performed by "[c]ompetent and internationally renowned physicians and scientists."⁷² Experiments by scientists like Stanley Milgram and Philip Zimbardo, while not malignant in themselves, however, proved that even the ordinary person could commit "evil" acts with little to no prompting. Ironically, Milgram's "obedience to authority" experiments (conducted in the early 1960s) and Philip Zimbardo's "Stanford Prison Experiment"⁷³ (conducted in the early 1970s) had themselves prompted some scientists to call

⁷¹ Marks, *The Search for the "Manchurian Candidate": The CIA and Mind Control*.

⁷² LaFleur, Bohme, and Shimazono, *Dark Medicine: Rationalizing Unethical Medical Research*, 64.

⁷³ Zimbardo's The Stanford Prison experiment, like Milgram's "Obedience to Authority," showed how quickly or willingly people were willing to commit acts of cruelty or harm under either the command of or with the possession of authority. In 1971, American social psychologist Philip Zimbardo, ran what became known as The Stanford Prison experiment. Zimbardo had carefully selected students/research subjects who had no automatic inclination toward either dominant or submissive behavior and re-created a "prison system" with guards and inmates. The study, which was to last two weeks, lasted only six days, due to the quickly developing sadism in the "guards" and stress endured by the "inmates." Like Milgram's experiment, research subjects in Zimbardo's study reported emotional stress as the result of the experiments. While neither scientist intended harm in their studies, research ethics protocols surrounding human subjects were put into place or strengthened as a result.

for tighter restrictions surrounding any experiment that involved human subjects, including those conducted by social scientists.

Sadly, however, not even the Nuremberg Code had not prevented continued unethical human experimentation. Some scientists had continued relations with former Nazi scientists, such as American Paul Popenoe, an avid eugenicist who believed in the sterilization of the mentally ill and other “undesirables.” Popenoe maintained a relationship with a former Nazi scientist, Otmar Freiherr von Verschuer, who had used Auschwitz-sourced research in the 1940s, including exchanging information with Josef Mengele. Testifying to the willingness of some medical and genetic scientists to side with science over ethics, Verschuer would go on to achieve great success in his field, eventually becoming Dean of the University of Muenster’s institute of Human Genetics.⁷⁴ Popenoe himself is considered a notorious figure in the history of American eugenics. Popenoe admonished those who supported charities as perpetuating “the survival of the unfit,” a statement that indicated just what Popenoe was capable of thinking, as well as doing.⁷⁵ Popenoe was most famous for putting forth sterilization as a method of improving human society and he and his fellow believers were responsible for sterilizations performed on both willing and unknowing Americans – including Mexican immigrants, the mentally ill, and criminals.⁷⁶

Not all Western scientists were willing to leave their ethical beliefs at the laboratory door, however, and their voices began to be heard in the 1960s and the years leading up to that decade. English mathematician J. Bronowski’s *Science and Human Values*, published in 1956, offered

⁷⁴ Black, *War Against the Weak : Eugenics and America’s Campaign to Create a Master Race*, 379.

⁷⁵ Stern, *Eugenic Nation*, 105.

⁷⁶ Stern, *Eugenic Nation*, 110.

both praise of science's accomplishments and reprimands against a scientific community given free-rein to pursue any and every inquiry without ethical considerations. He urged scientists to "not silo themselves within their studies, but serve as consult and guidance to governance."⁷⁷ For Bronowski, scientists should not myopically pursue their scientific interests without also thinking about the social implication of the research and to offer their expertise to those outside of their own disciplines, and even outside of academia, in respect to public administration. Four years later, however, Bronowski's compatriot A.V. Hill suggested that ethical considerations were complex and largely hampered scientific progress. In his book *Ethical Dilemmas of Science and other Writings*, published by America's Rockefeller Institute, he railed against "religion, anti-vivisection, conservatism and even natural stupidity."^{78 79}

French sociologist Jacques Ellul, who published a substantive tome of scientific/technological criticism, *The Technological Society* (1964), offered up views of American scientists along with biting commentary on what he perceived as the increasing domination of "technique" in all aspects of Western society. He suggested that the low pay offered to American scientists in academia caused many of the best scientists to select jobs with the government or in industry, thereby compromising American independent research. He also accused American scientists of being less aware or less concerned about the possibility that their scientific and technical research might have adverse effects on society. "Technolaters such as

⁷⁷ Bronowski, *Science and Human Values*, 27.

⁷⁸ Hill, A.V., *Ethical Dilemma of Science and Other Writings*, 107.

⁷⁹ The Rockefeller organization had taken in the notorious Alexis Carrel after he had been ridiculed out of Vichy France. Carrel firmly believed in fascist Eugenics and openly expressed his belief that "[t]hose who have murdered, robbed while armed with automatic pistol or machine gun, kidnapped children, despoiled the poor of their savings [and] misled the public on important matters, should be humanely and economically disposed of in small euthanasia institutions supplied with proper gases. A similar treatment could be advantageously applied to the insane guilty of criminal acts. Modern society should not hesitate to organize itself with reference to the normal individual. Philosophical systems and sentimental prejudices must give way before such necessity. (70)"[Reggiani, *God's Eugenicist : Alexis Carrel and the Sociobiology of Decline*, 70.]

Professor B.F. Skinner of Harvard and most other American professors,” Ellul posited, “represent the familiar type of American intellectual caught in an ecstatic technical vertigo and seldom proceeding beyond certain vague meditations on isolated problem areas such as ‘population explosion,’ if indeed he considers the real problems posed by technology at all.”⁸⁰

In 1965, American geneticist Bentley Glass published *Science and Ethical Values*. His opinions on science and ethics combined a bit of Bronowski and Hill. In terms of the need for ethical considerations in science, Glass accused scientists of being “too blithely confident that more and more scientific knowledge will be good for man irrespective of its applications” and of being “too hopefully confident that others can cope with the ethical problems he creates.”⁸¹ He, on the other hand, didn’t believe in imposing ethical standards in scientific research. The “authority of tradition, of religion, or of the state” was an enemy to science, according to Glass, and he insisted that “[n]o doors must be barred to its inquiries, except by reason of its own limitations.”⁸² One year later historians David D. Van Tassel and Michael G. Hall published their views on the subject: *Science and Society in the U.S.* In an essay by Charles E. Rosenberg, the author attributes the schism between science and ethics to the moment “when American investigators began to care more for the approval and esteem of their disciplinary colleagues than they did for the general standards of success in the society.”⁸³ Again and again, the unholy alliance between science and (the abuse of) power was of central import to the discussion.

⁸⁰ Ellul, xi.

⁸¹ Glass, *Science and Ethical Values*, ix.

⁸² Glass, 90.

⁸³ Van Tassel and Hall, *Science and Society in the U.S.*, 154-155.

In 1969 American architect and social critic Lewis Mumford said that science without “‘a sense of values’ works toward a complete dehumanization of the social order.”⁸⁴ Another philosopher, international lecturer and existentialist Paul Roubiczek contributed to the conversation in the same year. In his book, *Ethical Values in the Age of Science*, Roubiczek objected to the fact “that scientific research is practically the only human activity which is not judged morally” and warned ominously that “the pursuit of pure research has obviously got out of hand.”⁸⁵

In 1966 Harvard anesthesiologist Henry K. Beecher shook the medical community with his article “Ethics and Clinical Research.” Published in the *New England Journal of Medicine*, Beecher’s report warned that “[e]thical errors” were “increasing not only in numbers but in variety.”⁸⁶ It cited over seventy experiments in which patients had neither been informed of possible health risks nor had been asked for consent. The report, which made its way into the eyes of the American public, resulted in a lack of trust in the medical community and an increased number of complaints filed.⁸⁷ And very few things were more frightening than a doctor whose loyalty to the Hippocratic Oath could be questioned. Even worse, however, was a doctor like Dr. Josef Mengele.

While Conly’s Dr. Schutz seems horrifying enough, *A Report from Group 17*’s Georg Wolter is an archetype of something more terrifying: scientist as sadist. Early in the book, when Schutz is thinking about Wolter, the reader learns that Schutz is rather unfamiliar with the past of

⁸⁴ Li, *Lewis Mumford: Critic of Culture and Civilization*, 50-51.

⁸⁵ Roubiczek, *Ethical Values in the Age of Science*, 255.

⁸⁶ Henry K. Beecher, “Ethics and Clinical Research,” *The New England Journal of Medicine* 274, no. 24 (June 16, 1966): 1355–60.

⁸⁷ Beecher, “Ethics and Clinical Research, 1354.”

the man with whom he shares his lab. “Georg [was] a refugee from West Germany,” thinks Schutz, “where, if deported home, he would face trial for some offense unknown to” him.⁸⁸

Wolter, who is responsible for taking care of Schutz’s “zoo,” clearly gains sexual gratification from inflicting pain on the animals involved in the research studies. When a young girl is added to the laboratory collection, the terrible scope of Wolter’s fetish is revealed. Even when Alice is in a drugged state, she senses that something is “wrong with the young animal keeper.” While she is too young to recognize his behavior as indicative of sexual arousal, however, his behavior clearly makes her uncomfortable. In Wolter’s earliest attempts to touch Alice with the cattle prod, the curare-like effect of Schutz’s treatments prevents her from feeling or reacting to the pain. Alice sees the anger and frustration on Wolter’s face and responds with a sense of trepidation: “The young keeper's smile disappeared. He said something in the language she could not understand; still it sounded ugly, and though he spoke in a low voice it was angry, like an animal growling.”⁸⁹

Wolter’s reaction in the scene fully delineates the depth and breadth of the character’s sexual sadism. The following passage is most certainly not the stuff of children’s fiction:

As Georg Walter left the laboratory and locked the door behind him the red haze that had clouded his mind and his eyes was dispersing....Yet the girl's response had not been satisfactory. He knew that the electric shock emitted by the cattle prod was extremely painful, but her reaction had been merely reflexive. It was obvious that she was not feeling anything at all; she had made no outcry - not even a whimper - and there were

⁸⁸ O’Brien, *A Report from Group 17*, 55.

⁸⁹ O’Brien, 145.

none of the facial contortions that it was his particular pleasure to watch. What had they called it at the hospital in Frankfurt? "Visual masochistic transference." Psychiatrists were clever at using long words to describe simple joys, but not clever enough to keep him locked up after he had been caught.⁹⁰

When Wolter does figure out how to combat the "undesirable" effects of Schutz's injections, the reactions are loaded with the trademark language of sadism. When the prod is applied to her leg, Alice evinces "a muted scream, true, almost whispered, but a sound of pure agony, a lovely, high, thrilling cry of pain."⁹¹

It seems likely that Dr. Josef Mengele was one of the prime inspirations for Wolter. Widely acknowledged as a sadist (although never declared a sexual sadist), Mengele's experiments on humans – his favorites were twins, Gypsies, and "midgets" (his words) – at the Auschwitz concentration camp were the subject of any number of books and articles since the truth about Mengele's work began to be revealed. In 1960, Dr. Miklos Nyiszli published his account of working with Mengele in the book, *Auschwitz: A Doctor's Eyewitness Account*, which became a bestseller. Nyiszli notes that Mengele uses the word "love" only one time, when he is angered over the way his files are treated: "How can you be so careless with these files, which I have compiled with so much love!"⁹² In *Auschwitz: True Tales from a Grotesque Land*, prisoner Sarah Nomberg-Przytyk related the ways in which Mengele delighted in alternately charming and then harming prisoners. The following passage details the scope of Mengele's sadism:

⁹⁰ O'Brien, *A Report from Group 17*, 148.

⁹¹ O'Brien, 178.

⁹² Miklos Nyiszli, *Auschwitz: A Doctor's Eyewitness Account* (New York, NY: Arcade Publishing, 2001), 133

Then one of them stepped out of the row and fell at his boots. She was just about to kiss it. "You are so kind, so gorgeous. God should reward you," she whispered, enraptured. He did not move for a minute, then he simply shook her off his boot. She fell. She lay there, tiny, spread out on the floor. "Now tell me how you lived with your midget." The old woman blushed so that the blood almost came pouring out of her.

"Speak!" screamed Mengele. "Later you will tell your story," he said to the young one.

"You will tell me if the little one is the midget's son, or did you have him with someone else?"

And then, shortly after, Nomberg-Przytyk adds this:

"Don't tell me about that, only about how you slept with him." Mengele was salivating. The sweat poured down her face in big drops and fell on her clothes. She spoke, and he asked questions. I cannot repeat the conversation. It was grotesque, inhuman torture."⁹³

In Gerald Astor's *The Last Nazi*, another survivor detailed Mengele's personal "zoo:"

Layman Berkowitz echoes her appraisal: "Mengele had a zoo, a private zoo. Fifty percent of it was for real study, physical properties of humans, genetics, the effects of chemicals, pharmaceuticals, surgical procedures, ways to deal with people under certain situations. But the other fifty percent was to supply victims for murder."⁹⁴

And, of course, there were the terrible accounts from the twin children that Mengele sought out for his research projects. In an interesting parallel to the Schutz treatments, survivor

⁹³ Nomberg-Przytyk, *Auschwitz: True Tales from a Grotesque Land*, 90-91.

⁹⁴ Astor, *The "Last" Nazi: The Life and Times of Dr. Joseph Mengele*, 102.

Eva Mozes Kor suggested that bromide in the bread “made us forget memories of home, a sedative of some kind.”⁹⁵ Part of Mengele’s interest in twins lay in the fact that a disease or other experimental treatment could be administered to one of the twins, while the other twin would serve as a “control.” If a twin died from a disease, the other twin was often sought out and killed so that dissections could be conducted. In this sense, Mengele could be both Schutz, Wolter, and Mrs. Frisby’s Schultz, who tells the Fitzgibbons, who think the rats are being exterminated because of potential rabies, that the deceased rats look “perfectly healthy.” “Perfectly healthy,” thinks Mrs. Frisby, sadly, after hearing the doctor’s assessment, “except for being dead.”⁹⁶

But would an American real-life scientist really be found using a cattle-prod on human research subjects? As disturbing as Georg Wolter’s use of the cattle prod in *A Report from Group 17* is, there is at least one example of such implements being used by real life scientists on unwilling subjects. In *Against Their Will*, a history of unethical human experimentation, Hornblum et al. cite a research study conducted at the University of California at Los Angeles with the intention to reduce aggressive or disruptive behavior in mentally disabled children. The study, published in 1969 in the *Journal of Applied Behavior Analysis*, investigated methods of “[p]unishment by the use of aversive stimuli or extinction through withdrawal of effective reinforcers” in order to prevent certain unwanted behaviors in the children. The researchers state in the report that while they knew that “purposefully exposing the child to pain...raise[d] ethical problems,” they felt justified to proceed because the children that were sent to be part of the research study “came from, and were to be returned to, state hospitals where maintaining

⁹⁵ Kor, *Surviving the Angel of Death: The Story of a Mengele Twin in Auschwitz*, 48.

⁹⁶ O’Brien, *Mrs. Frisby and the Rats of NIMH*, 244.

incompatible behaviors was judged unfeasible.”⁹⁷ What Hornblum and his colleagues found most objectionable was that although the researchers could have chosen to use less harmful procedures, the researchers “found it more convenient to use an electrified cattle prod.”⁹⁸ While there is no evidence that any of the researchers in this particular study gained any sexual gratification from the administration of pain upon their subjects, it is important to remember that fiction is often used to raise conjecture of the possibilities of “worst case scenarios” that could arise in any given situation. Even without the sexual implications, there should always be questions surrounding the usage of such methods as part of the experimental process.

In *A Report from Group 17*, Robert Conly creates not only a fictional thriller, but, more terrifyingly, creates a sense of unease as to any real-life moorings of the work. Although Conly’s pen name, Robert C. O’Brien, was said to have been chosen because of his legal agreements with National Geographic, the relative anonymity of his pen name could have also allowed him to feel he had more leeway in including elements of his real-life research and writings in his work. In the end, *A Report from Group 17* is a prime example of Conly’s deft ability to weave non-fiction with fiction, presenting a page turning thriller that could leave a reader with a sense of trepidation regarding the possibility of real-life “who dunnit?”

⁹⁷ O I Lovaas and J Q Simmons, “Manipulation of Self-Destruction in Three Retarded Children,” *Journal of Applied Behavior Analysis* 2, no. 3 (1969): 143.

⁹⁸ Hornblum, Newman, and Dober, *Against Their Will*, 190.

Chapter Four: *Z for Zachariah*

Z for Zachariah is considered one of the first books for young adults to address a post-apocalyptic world. Literary scholar Xiaolan Wang, in their essay “Dystopian Nightmare in Contemporary Adolescent Fiction and Its Ethical Value,” praised the book as a novel that “represented the nuclear war and its destructive consequence” to a younger audience.⁹⁹ Paul Brians, who cited Conly’s book in his exhaustive review of nuclear disaster literature through 1985, also named the book as one of the first. *Z for Zachariah* not only deals with the aftermath of nuclear war, but also warns against the worst-case scenario in which civilization becomes dominated by scientific individuals who have no concern for ethics, the arts, or even the dignity of human life.

“First, post-1945 American culture makes no sense without taking into account the atomic bomb,” said Paul S. Boyer in an essay in the book *The Atomic Bomb and American Society*.¹⁰⁰ And, indeed, of all Conly’s concerns about civilization-ending science and

⁹⁹ Xiaolan Wang, “Dystopian Nightmare in Contemporary Adolescent Fiction and Its Ethical Value.,” *Forum for World Literature Studies* 8, no. 1 (2016): 75+.

¹⁰⁰ Boyer, “Nuclear Themes in American Culture, 1945 to the Present,” 4.

technology, nuclear power was perhaps the most directly powerful and relatable to readers of any age - and the 1960s saw powerful reasons for worries about the atomic bomb to be resurrected. In 1961, the United States and Soviet Union faced off in Berlin, with the Soviet Union erecting a wall to prevent citizens from escaping from East Germany into West Germany. Nuclear sabers were rattled. According to scholar Margot Henriksen, “statistics compiled in the wake of Kennedy's speech” revealed that “22,000,000 copies of the Department of Defense pamphlet, *The Family Fallout Shelter*, were distributed, as were millions of copies of another government pamphlet, *Family Food Stockpile for Survival*.”¹⁰¹ Nuclear anxieties had also inevitably begun to intensify following the failure of the American government's Bay of Pigs invasion in 1961, and then, in October 1962, tensions escalated to a fever pitch as a result of the Cuban Missile Crisis. By the end of the decade, in 1968, the United States and the Soviet Union had signed the Nuclear Non-Proliferation Treaty. When the treaty went into effect two years later, said Allan Winker in *Life Under a Cloud: Anxiety About the Atom*, the *Atomic Bulletin* clock “which had edged forward to seven minutes before twelve as the nuclear club expanded, settled back to ten minutes before midnight.”¹⁰² However, this did not mean the dangers of nuclear war or accidents faded from the American mind.

Popular television shows of the 1960s, for example, addressed nuclear concerns. Shows like *The Twilight Zone* featured at least two episodes on the topic: “Time Enough at Last” (1959) in which a man finds himself the sole survivor of a nuclear blast and “The Shelter” (1961) which shows how the threat of nuclear war transforms neighbors into enemies. Henriksen said that the show, which ran from 1959 to 1964, “imbued American culture with the zeitgeist emblematic of

¹⁰¹ Henriksen, “The Berlin Crisis, the Bomb Shelter Craze and Bizarre Television: Expressions of an Atomic Age Counterculture, 156.”

¹⁰² Winkler, *Life Under a Cloud: Anxiety About the Atom*, 182.

the counterculture of the early 1960s.” She also suggests that shows like *The Munsters* and *The Addams Family*, both of which ran from 1964-1966, “signified a long term American association of the atomic bomb with horribly mutated human beings or, more simply, with monsters.”¹⁰³

Hollywood gave moviegoers visions to accompany their mental worries. In 1959, *On the Beach* shocked moviegoers with its chilling depiction of a post-nuclear world. *Panic in the Year Zero* (1962) finds a family struggling in the aftermath of nuclear war, although, as John Brosnan said in *The Primal Screen*, its message was of a disturbing survivalist tone, with the lead character calling the post-war world “survival of the fittest.” In 1963, *Dr. No* featured a villainous atomic scientist who was “arrogantly confident that he can control it even though radiation poisoning has cost him his hands.”¹⁰⁴ Accidental nuclear war was portrayed in 1964s *Fail Safe*, which starred Henry Fonda. Another wildly popular movie of the 1960s, *The Planet of the Apes* (1968), also featured a post-nuclear war America.

However, it was probably Kubrick’s 1965 hit, *Dr. Strangelove: Or How I Stopped Worrying and Learned to Love the Bomb*, that probably raised the most concern about all out nuclear war. The movie satirically commented on the possibility of worldwide nuclear destruction in a way that leaves the viewer shuddering with laughter and with trepidation. It also made myriad allusions to real-life people and events. The movie’s war room scenes feature farcical tensions between one American official and the Russian ambassador – perhaps a tongue-in-cheek (or not) conjecture on how U.S. and Soviet officials may have interacted during the Cuban Missile Crisis. Lewis Mumford praised the movie for its criticism of the American

¹⁰³ Henriksen, “The Berlin Crisis, the Bomb Shelter Craze and Bizarre Television: Expressions of an Atomic Age Counterculture. 151-153.”

¹⁰⁴ Brosnan, *The Primal Screen*, 113-115.

Government's decision to allow "policy to be formulated and implemented without even the pretense of public debate."¹⁰⁵

Kubrick's character of Dr. Strangelove also seemed to send another message to American audiences – that scientists, as well as government officials, could be capable of behavior beyond the pale. While Strangelove appears in a limited number of scenes, when he does appear, the character epitomizes the view of scientists as cold, logical thinkers who do not seem to see the world in terms other than statistics and experimental conjecture. There are but a couple exceptions to Strangelove's otherwise sterile persona. In a scene in which Strangelove discusses a post-holocaust bunker that could be used to preserve humanity until the earth is once again safe for above-ground habitation, the scientist seems barely able to suppress his excitement (arousal?) at the mention of animals being "bred and slaughtered." The words of Strangelove and Gen. Buck Turgidson reminded many Americans of Rand Corporation's Herman Kahn, who, in the survivalist-stripe, asserted that "shelters could guarantee survival for at least some Americans in the event of nuclear war, despite the probable deaths of at least 50 million Americans."¹⁰⁶

Peter Goodchild named nuclear scientist Edward Teller as a strong candidate for the inspiration of Dr. Strangelove. Teller, who is perhaps most well-known for his antagonism toward Robert Oppenheimer, had also been named an enemy by anti-nuclear counterrevolutionaries of the 1960s. Teller earned this reputation for his dogged opposition of anyone who sought to stand in the way of nuclear power or who advocated for testing bans. Teller's own words did not help his reputation. Peter Goodchild, in his book *Edward Teller: The*

¹⁰⁵ Whitfield, *The Culture of the Cold War*, 224.

¹⁰⁶ Henriksen, "The Berlin Crisis, the Bomb Shelter Craze and Bizarre Television: Expressions of an Atomic Age Counterculture," 157.

Real Dr. Strangelove, shares Teller's reaction to a conversation he attempted to hold with President John F. Kennedy:

"I was about to point out that some evidence indicated that amounts of radiation in slight excess of background radiation might be beneficial," Teller recalled. "Before I could do so the President interrupted me to observe, "Dr Teller, if you are trying to convince me that radiation is good for me, you will fail." In this case, as in many others, Kennedy demonstrated more talent as a politician than as a scientist."¹⁰⁷

Speaking later in life of the dangers of anti-nuclear, and even environmentalist, beliefs, Teller rattled off a list of facts in the best utilitarian tradition, saying that, while World War I and World War II had killed millions, they were "not the worst" as only 10% of the population in the warring countries were killed.¹⁰⁸

Z for Zachariah has a chilling villain of its own. "Poor Anne Burden... You're going to wish I had never come," John Loomis tells Ann ominously in a passage *Z for Zachariah*, instilling in the reader an unmistakable impression that Ann is about to deal with someone dangerous and cold.¹⁰⁹ Although no Georg Wolter, *Z for Zachariah* has a cold and sexually aggressive scientist of its own in the character of John Loomis. While Ann is tending to the recovering Loomis, she becomes privy to his secrets through his sleep talking. Ann learns that Loomis and his colleague had argued over the radiation-proof suit that had allowed him to travel from his research bunker following the nuclear war. One night, Ann hears the way in which Loomis had angrily opposed the other man's request to use the suit to check on his family. There

¹⁰⁷ Goodchild, *Edward Teller: The Real Dr. Strangelove*, 302.

¹⁰⁸ Teller, "The Writing on the Cloud: American Culture Confronts the Atomic Bomb," 3.

¹⁰⁹ O'Brien, *Z for Zachariah*, 101.

is no empathy in Loomis's words when he replies: "What good can it do? We know they're dead. There isn't a chance. Can't you grasp that? Mary is *dead*. Billy is dead. You can't help them."¹¹⁰ In a later scene in which Ann hears Mr. Loomis talking in his sleep, Loomis coldly tells Edward that the suit is the "last useful thing anybody has ever made" and that "You're not going to waste it on a visit to your dead wife."¹¹¹ There is no room for sentiment in John Loomis's brave new world.

Loomis in this sense seems as if he'd have made a sympathetic companion to a real-life of a Chicago man quoted in an August 18, 1961 *Time* magazine article, "Gun Thy Neighbor?" The article showed the hideous side of the survivalist movement born in the time of fallout shelters. Said the man:

"When I get my shelter finished, I'm going to mount a machine gun at the hatch to keep the neighbors out if the bomb falls. I'm deadly serious about this. If the stupid American public will not do what they have to to save themselves, I'm not going to run the risk of not being able to use the shelter I've taken the trouble to provide to save my own family."¹¹²

But Loomis not only does not speak warmly or family or feeling, he murders Edward. In the same year of "Gun They Neighbor," *Newsweek's* August article called "Civil Defense: Who'd Survive?" counteracted Herman Kahn's cool, dispassionate faith that the American economy would survive with no problem. Henriksen quotes from the article:

¹¹⁰ O'Brien, 76.

¹¹¹ O'Brien, 116.

¹¹² "Gun Thy Neighbor?," *Time*, August 18, 1961.

"Basing his thinking on the remarkable resiliency of the Nazi productive machinery after massive bombing, he believes the economy could be 'even more flexible than a salamander (which can grow new parts when the old ones are destroyed)." *Newsweek's* own thinking about the postwar scene was based, as noted, on more human concerns:

"But families may prove less salamander-like. When the bombs begin to fall, the husband might be at work, the older children at school, and the young and the mother at home."¹¹³

Loomis also has no use for Ann's interest in literature or spirituality. He refuses Ann's request to use the suit to go to the library to get some books to read – a decision Ann dejectedly accepts because what "he said was true. I could survive without novels."¹¹⁴ He also treats Ann like an inferior, berating her for her lack of knowledge in technical matters and for her lack of efficiency. In a scene in which Ann confesses to him that she does not "know much about electric motors and pumps," Loomis's reply is laden with sarcasm: "'But I do," he said. "At least enough to do that."' ¹¹⁵ Scholar of children's literature Elizabeth Braithwaite also notes the troubling control Loomis seeks to hold over Ann, saying that Loomis demands that "Ann serve him with unquestioning obedience."¹¹⁶

Such language easily lends itself to comparisons to Stanley Milgram's famous obedience experiments which had, as mentioned previously, shown not only that the regular people were capable of doing unexpectedly horrible things to one another, but also that people accorded a special authority to members of the scientific community. Conly's language, too, reflects that of

¹¹³ Henriksen, 160-161.

¹¹⁴ O'Brien, *Z for Zachariah*, 150.

¹¹⁵ O'Brien, 70-71.

¹¹⁶ Elizabeth Braithwaite, "'When I Was a Child I Thought as a Child ...': The Importance of Memory in Constructions of Childhood and Social Order in a Selection of Post-Disaster Fictions. Papers: Explorations into Children's Literature," *Expanded Academic ASAP* 15, no. 2 (2005): 50+.

such power dynamics. Braithewhite's usage of the words "unquestioning obedience" does not seem so much hyperbole in light of Ann's early reaction to the appearance of Loomis on the horizon: "If he is kind, then I am all right. But if he is not - what then? He can do whatever he likes, and I will be slave for the rest of my life."¹¹⁷ Here plays out the most symbolic of Conly's stories: the essential standoff between light and dark, "good" and "bad."

Loomis clearly toys with Ann, a habit also attributed to Josef Mengele by his victims. In one scene, where Ann is playing the piano, the nervous Ann is already spooked by the fear of him sneaking up on her when:

"...all at once I heard his cane tapping behind me. It tapped twice, clearly and sharply, and I could not control myself. I whirled around on the bench. He was still sitting in his chair.

He said: "Is something wrong?"

"Your cane," I said. "It startled me. I thought -" I stopped not wanting to say what I had thought.

"My cane slipped," he said, "but I caught it."¹¹⁸

Ann is perfectly aware that Loomis did not drop his cane (when she turns around, she sees it hooked on the chair), and thinks, "I thought he had tapped the cane purposely, just to see what I would do. But why should he?" The scene continues to add to the image of Loomis as controlling and rather sadistic.

¹¹⁷ O'Brien, *Z for Zachariah*, 36.

¹¹⁸ In the original manuscript Conly had also included, "Did it bother you?" but he crossed it out.

And then there is the sexual dimension to Loomis's need for dominance. Although Ann originally (perhaps naively) harbors thoughts of a romantic relationship with the older man, her illusions are cruelly shattered when Loomis attempts to sexually assault her. While it was felt that young adult audiences were mature enough to handle such heavy subject matter, in truth, this aspect of *Z for Zachariah* may have caused even particularly aware adult audiences no small sense of discomfort. In fact, manuscripts for the novel (Conly had only finished a first draft of the first twenty-three chapters) showed that family, who completed the novel for publication, had toned down the sexual tensions in the book. However, whether this was a good or bad thing, depends on the point of view. The major changes from the original manuscript pertain to Ann's romantic fantasies, her thoughts about sex, and her wish to include wine with the birthday and recovery dinner she is planning for them. While it does remove material that may make the reader cringe in respect to the idea of the younger woman/older man relationship, it also seems to remove material that young female readers might identify with (after all, young women do think about sex) and thereby might think about in relation to the possible dangers of bad relationships.

Ann's inner dialogue during the attempted rape scene shows her awareness of Loomis's intentions:

"When he was holding my hand, I could tell that he was taking charge, or possession. He was trying to control me, just as he had, in his way, controlled the planting, the use of the gasoline, the tractor, and even my going to church. And, of course, the suit, and, in the end, Edward"¹¹⁹

¹¹⁹ O'Brien, *Z for Zachariah*.

“I felt his hand, groping, touch the edge of the bed. Then, suddenly, both his hands were over me, not roughly, but in a dreadful, possessive way that I had never felt or imagined.”¹²⁰

Male sexual aggression is a common element in post-nuclear holocaust fiction. It was also seen in *Panic in the Year Zero* (1962), in which a gang of thugs abduct and rape the daughter of a surviving family. Paul Brians, in *Nuclear Holocausts: Atomic War in Fiction, 1895-1984*, cited *Z for Zachariah* as one of the books that “reject the vision of the nuclear wasteland as a rationale for male sexual aggression.”¹²¹ Conly clearly condemns sexual aggression in *Z for Zachariah* as well as in *A Report from Group 17*.

Z for Zachariah was Conly’s final book, ending with the young, idealistic woman setting out on her own. Despite the bleak, toxic landscape – the epitome of dystopia – there is hope in her heart. In *Z for Zachariah*, Conly seems to be at his most direct in dealing with the worst case scenarios of his sci-tech anxieties, but, also, at his best in showing a goodness in human nature that is as powerful as its inverse. Although its plot is perhaps the most straightforward of all four of his books, this does not make it any less impactful. In the end, *Z for Zachariah* pits hope against chaos, survival and victory against defeat, and life against death. Scientifically and technologically speaking, the bomb was the “Z” of humanity’s A-to-Z; however, even here the cautionary tale is just that: cautionary. Despair is not inevitable in a world which seemed increasingly dangerous and human civilization seemed on the brink of extinction. Only Conly’s

¹²⁰ O’Brien, 175.

¹²¹ Brians, *Nuclear Holocausts: Atomic War in Fiction, 1895-1984*, 62.

untimely death prevents us from ever truly knowing what he had in mind. Then again, Conly's trademark was always ambiguity...

Conclusion: Revelations

While our humanities are strong today, it is essential to the quality of our society, including its science, that they be stronger still, and that they have adequate support.

Harry Woolf, *Science as a Cultural Force*, 1964 ¹²²

Robert Conly's works for children and young adults are considered among the first to present complex social issues in realistic language. Since then, children's and young adult literature has never turned back. In particular, *Z for Zachariah*, marked the beginning of the phenomenon of dystopian novels for young people – a genre that enjoys immense popularity in the early twenty-first century. In "Dystopian Nightmare in Contemporary Adolescent Fiction and Its Ethical Value," Xiaolan Wang summarizes the genre thusly: "The dystopian boom conveys a common anxiety over the status quo of contemporary society and a pessimistic prospect of science development in the future. ...The nightmare caused by severe environment pollution, destructive nuclear war and technological autocracy is the inevitable offspring of technology abuse, which is the major theme of contemporary dystopian fiction published in English speaking countries."¹²³ Book series like *The Hunger Games* not only hit the bestseller lists but were made into wildly popular movies.

¹²² Woolf, *Science as a Cultural Force: The Shell Companies Foundation Lectures*, 20.

¹²³ Wang, "Dystopian Nightmare in Contemporary Adolescent Fiction and Its Ethical Value."

All four of Conly's books, taken together, have been remarkably prescient in terms of the scientific and technological anxieties that have haunted Americans then, and now. Myriad examples of those same issues remain in 2019: There is a new nuclear ban treaty on the table, there are rumors that China and Russia may have "biological weapons using genetic engineering and synthetic biology,"¹²⁴ and conversations over gun control ignite fiery debate. Americans are concerned over the younger generation's attachments to computers and smartphones, while investigations reveal that rumors of media "brainwashing," or at least deliberate attempts to manipulate viewers, have been found to have some basis in reality (a fact that Conly, a news writer his entire working career would have undoubtedly seen as a source of even more anxiety). Conly's books prepared younger readers to critically think about their future and the world they lived in, as well as offered adult readers a different way to approach the troubling anxieties that might be affecting their everyday lives. Informed, insightful, and compassionate writers like Conly are to be commended for their usage of the written word to encourage their readers to combat cruelty and address pressing social issues. Literature and the other humanities have always served as a way in which Americans explore issues intellectually *and* emotionally – a way that invokes the entire human experience, rather than just a fragment of it.

Calls for the consideration of ethics and social responsibility in relation to science continued throughout the 1970s and beyond – both in fiction and non-fiction. Perhaps the most famous example, is when Michael Crichton provided Americans with a cautionary tale of unfettered science in his blockbuster *Jurassic Park* books and movies. In the series, Crichton's Dr. Ian Malcolm, in a line now frequently used in popular culture years after the movie was

¹²⁴ David Brennan, "Here Are the Weapons China and Russia Will Use to Threaten U.S. Dominance," *Newsweek*, December 18, 2018, <https://www.newsweek.com/here-are-future-weapons-will-threaten-america-1262925>.

released, tells the genetic engineers, “Your scientists were so preoccupied with whether or not they could, they didn't stop to think if they should.” Compare this to the thoughts of John C. Caiazza, who in *The Disunity of American Culture: Science, Religion, Technology, And the Secular State*, worried that some scientists assume that simply because it was is *possible* to accomplish something technically, we simply “*ought to do it.*”¹²⁵ Even visual artists picked up on Malcolm’s cues, such as this example from the University of Utah’s Department of Humanities:

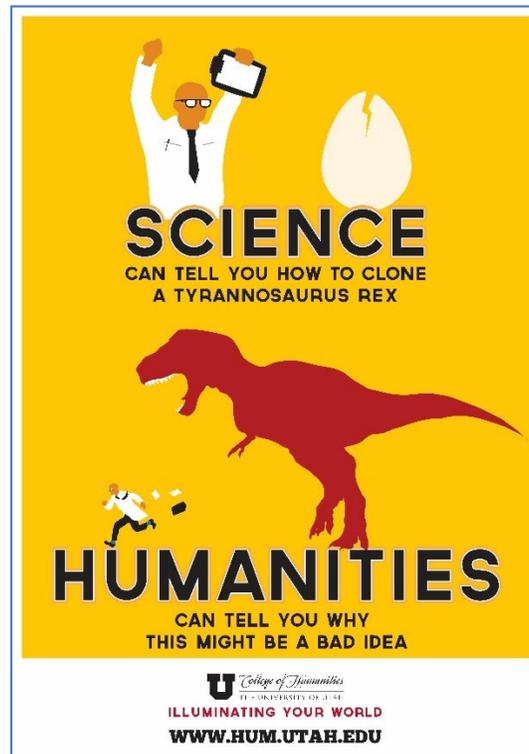


Figure 1: Science and Humanities Poster from The University of Utah
Image Used With Permission

Fortunately, many real-life “Dr. Ian Malcolm”s also continue to call for more oversight of research and research objectives since the 1960s until the current day. A leading concern is possible conflicts of interest between the aims of science and vested (and funding) interests. In a

¹²⁵ Caiazza, *The Disunity of American Culture: Science, Religion, Technology, And the Secular State*, 183.

paper commemorating the 50th anniversary of Henry K. Beecher’s “Ethics and Clinical Research,” the authors note that ethical failures continue to occur and that “medical, personal, political, military, and commercial” interests are a threat to scientific integrity.¹²⁶ There are also those who seek to bridge the gap between science and the public. Movements like #SciComm feature scientists who seek to share their knowledge via social media venues. Some toy sections in stores stock a significant number of STEM-related toys and exploration sets. Documentaries and educational videos are becoming increasingly available and viewed by the American public.

However, many scientists continue to be uninterested in interacting with practitioners or people outside of their own fields. As a result, the American public is woefully uninformed or uneducated about the research in science and technology that profoundly affects their everyday lives. Worse, many scientists are disdainful of the public and show little interest in interacting with them. John C. Caiazza commented that “practitioners of the hard sciences... ha[ve] disdain for historians and philosophers who comment on science” and are unwilling “to deal with cultural criticism.”¹²⁷ Without dialogue, the public cannot be blamed for “letting their imaginations run away with them,” as that is all they are being left with: their imaginations.

Muddying the waters is the conflation by some scientists of those with genuine concern about scientific ethics and those who are anti-science or science-deniers. While these individuals are inarguably a problem in addressing issues like vaccinations and climate change, not *all* members of the public who express ethical concerns about science and technological issues are out to throw out the proverbial baby with the bathwater. When these scientists utilize such black-

¹²⁶ David S Jones, Christine Grady, and Susan E Lederer, “Ethics and Clinical Research — The 50th Anniversary of Beecher’s Bombshell,” *The New England Journal of Medicine* 374, no. 24 (June 16, 2016): 2393–98, <https://doi.org/10.1056/NEJMms1603756>.

¹²⁷ Caiazza, *The Disunity of American Culture: Science, Religion, Technology, And the Secular State*, 185.

and-white thinking, they not only choose to reject possibly helpful criticism, they are also reinforcing a divide between themselves and the public. Even practically speaking, such an antagonistic approach to the public might be harmful to their own interests: While science is supported by private interests as well as by the public, the public also chooses which elected officials represent them in Congress – and that could spell out trouble for governmental funding in some areas.

Nor is the public image of scientists helped by the public words of scientists themselves. In 2003's *War Against the Weak: Eugenics and America's Campaign to Create a Master Race*, the authors shared the words of Nobel prize-winning geneticist James Watson, who told interviewers, "If you are really stupid, I would call that a disease. The lower 10 per cent who really have difficulty, even in elementary school, what's the cause of it? A lot of people would like to say, 'Well, poverty, things like that.' It probably isn't so. So I'd like to get rid of that, to help the lower 10 per cent."¹²⁸ In the wake of the horrors of unethical genetic and other scientific studies that have affected America's most vulnerable populations, this quote most has done significant damage to the public trust of the scientific elite.

Twenty-first century American academia is dominated by calls for students in the STEM disciplines – Science, Technology, Engineering, and Mathematics. Nearly every day Americans are shocked and delighted to hear of advances in these fields and approve of their practical applications. Universities now require courses or seminars in “responsible research” and other ethical considerations. Great efforts are being made to increase the numbers of women and underrepresented populations in the STEM fields. This is not, in itself, a bad thing. Science and

¹²⁸ Black, *War Against the Weak: Eugenics and America's Campaign to Create a Master Race*, 442.

technology have made life easier, more pleasant, and longer and the push for higher education is very welcome against current trends of anti-intellectualism.

On the other hand, what has become of the humanities: the yin to the scientific yang? Funding for the humanities is a mere pittance compared to the funding of STEM fields, with some universities even choosing to close humanities departments altogether. While woes over the low availability of faculty positions is a problem for all disciplines, the problem is far worse for humanities students. To add insult to injury, most positions in the arts and humanities in the United States (inside and outside academia) pay barely enough, or not enough, to make ends meet. The American love for practicality reigns supreme in American thought, with Bernard Rollin lamenting in 1995 that “we live at a time when genuine education has been subordinated to narrow, short-term, expedient, job-oriented training.”¹²⁹ While it is true that there is a great need for skilled trades workers in the twenty-first century, we again confront the same problem. Practical applications of knowledge are wonderful, but why *must* one preclude the other? Lewis Mumford had, after all, had long before asked for a blend of both. Said scholar Shuxue Li of his views: “In his critique of the pragmatists, Mumford is not anti-materiality, not anti-science and industrialism per se, but wants to establish a philosophical canon which can accommodate science and technology, art and culture....”¹³⁰

And what about the rats of NIMH? In the world of animal rights, the twenty-first century saw a considerable increase in societal concern over the suffering of animals in laboratories. Advocate Bernard Rollin observed in *The Unheeded Cry*, that the 1970s and 1980s saw the entry of a new brand of philosophers who took up the cause and whose works became the “basis for

¹²⁹ Rollin, *The Frankenstein Syndrome: Ethical and Social Issues in the Genetic Engineering of Animals*, 32.

¹³⁰ Li, *Lewis Mumford: Critic of Culture and Civilization*, 95.

lawsuits, legislative efforts, guide-lines, the founding of new organizations.”¹³¹ Such advocates, like many who had come before, were not anti-science or anti-progress, despite what some voices in the opposition virulently claimed, but asked only that unnecessary tests were eliminated, suffering reduced, and animal models replaced by technological models when possible. In his 1995 book, *The Frankenstein Syndrome: Ethical and Social Issues in the Genetic Engineering of Animals*, Rollin discusses the “plight of the creature created through the abuse of science,” a statement which most certainly invokes the image of the rats of NIMH for any reader of the book. In 2018, philosopher Todd May’s article “Would Human Extinction Be a Tragedy?” asked readers to consider the sheer amount of animal suffering humans caused, including that done in the name of science. Of particular interest is his following observation: “Our own science is revealing that richness to us, ironically giving us a reason to eliminate it along with our own continued existence.”¹³²

And therein lies the crux: Before and after *Mrs. Frisby and the Rats of NIMH*, science has continued to reveal what many who recognize the qualifiable as well as the quantifiable already knew: that animals express many “emotions” or behaviors that we as humans also do. Indeed, various scientific studies have shown that rats and mice, who, sadly, do not enjoy protection under the Animal Welfare Act, have been shown to naturally exhibit traits like empathy,¹³³ monogamy,¹³⁴ and have even been proven to enjoy a good tickling.¹³⁵ All of this

¹³¹ Rollin, *The Unheeded Cry*, 169.

¹³² Todd May, “Would Human Extinction Be a Tragedy?,” *The New York Times*, December 17, 2018, <https://www.nytimes.com/2018/12/17/opinion/human-extinction-climate-change.html>.

¹³³ Inbal Ben-Ami Bartal and University of Chicago. Psychology, *Helping a Cagemate in Need: A Rodent Model of Empathically Motivated Pro-Social Behavior [Electronic Resource]*, 2012.

¹³⁴ Joshua D. Pultorak et al., “Changes in Behavior and Ultrasonic Vocalizations During Pair Bonding and in Response to an Infidelity Challenge in Monogamous California Mice,” *Frontiers in Ecology and Evolution* 6 (2018): 125, <https://doi.org/10.3389/fevo.2018.00125>.

¹³⁵ Megan Renee LaFollette and Purdue University. Comparative Pathobiology, *The Impact of Tickling Rats on Human-Animal Interactions and Rat Welfare [Electronic Resource]*. (ProQuest Dissertations & Theses, 2016).

had long been known to many before science “proved” it, and, perhaps now that scientists also know, more attention may be paid to the ethics of animal experimentation alongside that concerned with human experimentation and, should we be so lucky, a willingness of all scientists to stop and review the “coulds” alongside the “shoulds.”

This is what authors like Robert Conly had been and still are desperately calling for: Asking the wizards of science and technology to value the “heart” as well as the brain. While we might wish to believe we can now depend on the new bioethicists and historians of science and medicine to do the job, history has shown that codes and laws are not enough. Humans are not “perfect,” and they are not computers that simply follow the “programming” that is given to them. Nor should we necessarily want them to be. In *Dark Medicine: Rationalizing Unethical Medical Research* (2007), the authors wonder if scientists had ever considered “what we as humankind would *be* if the series of eliminations were ever to be brought to perfection - that is, to the *telos* where each and every defect had been expunged.”¹³⁶ Which world do we choose? The one of “friendly computers” or of the rats are much “saner and pleasanter than we are?”¹³⁷ The answer may lie in preserving a balance and preventing extremes – a balance better maintained by a humanity that embraces the sciences and the humanities equally – the logical and the emotional. We would do well to remember the words of American freethinker Robert G. Ingersoll: “Brain without heart is more dangerous than heart without brain.”

¹³⁶ LaFleur, Bohme, and Shimazono, *Dark Medicine: Rationalizing Unethical Medical Research*, 236.

¹³⁷ Klingman, *Newbery and Caldecott Medal Books 1966-1975*, 85.

Appendix: John B. Calhoun

It was, rather, as if a cancer researcher at the NIH, working with rats, had suddenly lost all interest in cancer and become fascinated with the rats themselves.

Fergus O'Neil, *A Report From Group 17*¹³⁸

“Perhaps I am a poet in scientist’s garb” reads a handwritten note in the files of American scientist John B. Calhoun held at the National Library of Medicine. Calhoun, who was a researcher with the National Institutes of Mental Health at the time of Robert Conly’s visit to his laboratories, had long been working with rats and mice. At that time, Calhoun was known for his coinage of the term the “Behavioral Sink” and for his rat and mouse “universe” population experiments – experiments that suggested that overcrowding could result in behavioral deterioration. At the height of his popularity, Calhoun personally interacted with American presidents, the Pope, and a multitude of prestigious university and research organizations.

Calhoun’s research had been cited in any number of books and articles in the 1960s. Taylor’s *The Biological Time Bomb* (1968) commented on the breakdown of animal behavior under crowded conditions as bring “alarmingly reminiscent of the disorders which are affecting

¹³⁸ O’Brien, *A Report from Group 17*, 65-66.

western society.”¹³⁹ In the same year, Lewis Mumford makes similar references in his book *The Urban Prospect*, asserting that “it is now a well-established fact in biology that overcrowded quarters produce conditions of stress even in animals, a state marked by anxiety and hostility”¹⁴⁰

The full implications of Calhoun’s research and his results, however, say many, have been largely misunderstood in the annals of popular history. Newspapers and magazine articles tended to paint Calhoun’s studies as pessimistic and inapplicable to human society. Authors like Tom Wolfe, in his book *The Pump House Gang* (1968), exacerbated the matter in their negative portrayal of Calhoun’s work. Scholar Amy Ratelle, in *Animality and Children’s Literature and Film*, called these reactions “exaggeration of the dystopian conclusions” of Calhoun’s work, the author also noticing what some of Calhoun’s fellow scientists had: that Calhoun had been done wrong in the eyes of the public.¹⁴¹ Edmund Ramsden and Jon Adams, in their 2009 essay “Escaping the Laboratory: The Rodent Experiments of John B. Calhoun and Their Cultural Influence,” asserted that Calhoun’s work remains relevant to twenty-first century society because there is still “concern about the modern urban individual being overloaded by stimuli, and the belief that all social animals share certain biological needs and societal structures.”¹⁴²

Beyond the behavioral sink, Calhoun sought to provide ways to combat human maladjustments to overpopulation and technology by finding ways to incorporate creativity and compassion into everyday life. One of the reasons he saw the need for such a measure was because of the ways in which people dealt with technology. “The conformity to the demands of

¹³⁹ Taylor, *The Biological Time Bomb*, 53.

¹⁴⁰ Mumford, *The Urban Prospect*, 198.

¹⁴¹ Amy Ratelle, *Animality and Children’s Literature and Film* (Basingstroke: Palgrave Macmillan, 2014).

¹⁴² Ramsden and Adams, “Escaping the Laboratory: The Rodent Experiment of John B. Calhoun and Their Cultural Influence,” 8.

Western technological society,” Calhoun concluded in his book *The Ecology and Sociology of the Norway Rat* (1962), “is certainly adjustive in that it assures greater material rewards, but the evidence of disruption of psychological homeostasis strongly indicates that such behavior is not adaptive.”¹⁴³ So what were Calhoun’s suggestions?

The “John B. Calhoun Papers” collection held at the National Library of Medicine reveal that Calhoun was indeed knowledgeable about and concerned about technology in society. In fact, Calhoun was asked to review Jacques Ellul’s *The Technological Society* by the American publisher, Alfred A. Knopf, before its release. The copy of the book in the collection is not only heavily marked up, but is accompanied by hundreds of notes and Calhoun’s own detailed analysis of the work. Unsurprisingly, Calhoun doesn’t agree with some of Ellul’s more negative opinions concerning the “technique” of science; however, he does seem to have found other merits in the work. Indeed, although Calhoun believed technology and science could be used to improve society, he was no Skinner who proscribed his own work as a pattern for utopia. In fact, when an organization called “The Creative Society” asked him for help in designing their own utopia in 1981, Calhoun declined, saying to an associate that it “would have been too much like playing God.”¹⁴⁴

There are any number of articles on the relationship of technology and mental health included in the files, along with many articles of his own that pertain to his belief that creativity and compassion were ways to break free of any current problems with crowding or other social issues. The collection contains several articles on empathy and compassion in medical and

¹⁴³ Calhoun, *The Ecology and Sociology of the Norway Rat*, 256.

¹⁴⁴ John B. Calhoun, “John B. Calhoun Papers,” 1996 1909, History of Medicine Division. National Library of Medicine.

psychiatric fields from the 1960s. The loneliness and withdrawal he observed in his rats obviously concerned him, and he so passionately believed compassion an answer that he sent what he believed to be the perfect platform of compassion to presidential candidates Richard Nixon and Hubert Humphrey in 1968. In it, Calhoun called for diversity, tolerance, and acceptance of all people. Perhaps the following two lines summarize the document best:

IT WILL BE AN ADMINISTRATION OF COMPASSION

IT WILL WORK TOWARD TRANSFORMING THE THREATS AND STRAINS
PRODUCED BY TECHNOLOGICAL AND SOCIAL CHANGE¹⁴⁵

And yet, while Calhoun's work was not necessarily dystopian in the sense that he believed that human civilization was destined to end in societal collapse, those who observed his actual work may not have necessarily felt much of a sense of optimism or compassion when they visited his lab. In one particularly empathy-arousing article by leading journalist Stewart Alsop, "Dr. Calhoun's Horrible Mousery," Alsop used the following language to describe the conditions he witnessed:

The lowest of all - the proles - were the mice who found no nesting sites at all. They swarmed over the bottom of the box - sad, scruffy little animals, mostly rejected males, a few viciously aggressive females.

All the mice were afflicted in varying degrees with what Dr. Calhoun calls a "withdrawal syndrome." Only the proles on the open floor retain the capacity for "little bursts of

¹⁴⁵ John B. Calhoun, "COMPASSION: Letter to Richard Nixon and Hubert Humphrey," October 20, 1968, Box 2. Folder 54.

violence," Dr. Calhoun said. "They chew on each other, and the ones being chewed on don't run away." He pointed out a couple of mice on the floor, and sure enough, one was gnawing on another's bottom, while the other sat passive.

Their fellows had found the release of death in the "carbo-box," a mouse Auschwitz filled with carbon dioxide.

In one of the boxes, six survivors, terrified of the unaccustomed surrounding space, huddled together, clinging to each other desperately as though in a great cold.¹⁴⁶

Letters from children which included questions about the suffering of the animals were not personally answered by Calhoun, but by other colleagues at NIMH. These form letter responses utilized simplified language and avoided any wording that showed more than a base concern for the animals' well-being. Such responses differed from those responses offered by NIMH researchers following the release of *Secret of NIMH*. In an article in the *Washington Post* called "Rats! The Real Secret of NIMH: The Magic Inside the Local Laboratories Where the Rodents Are Getting Smarter" written in 1982, the author shares the differences between NIMH rats, in Calhoun's experiments and their own, which actually did use injections to increase intelligence. However, it is the approach toward the humane treatment of the lab animal that is perhaps the greater difference. The article says of the 1982 scientists:

The real NIMH scientists are rather tickled with the book and the film, although they feel that the fictional "NIMH" laboratory is gratuitously depicted as cruel in its animated incarnation.

¹⁴⁶ Stewart Alsop, "Dr. Calhoun's Horrible Mousery," *Newsweek*, August 17, 1970, John B. Calhoun Papers, History of Medicine Division. National Library of Medicine.

The NIMH scientists who do deal with today's rats of NIMH are scrupulously humane. Said research scientist O'Donohue, "After all, most scientists go into research and biology because they're fascinated by the beauty of life and hate to see anything done that is bad or cruel to an animal."¹⁴⁷

Calhoun openly expressed his belief that he had been the prototype for Dr. Schultz in a 1982 *Washington Post* article – claiming to have remembered “the late O'Brien, the book's author, visiting the facility in the late '60s or early '70s.”¹⁴⁸ However, perhaps the greatest irony can be found in the article’s next passage: In fact, Calhoun believes that Mrs. Frisby's name came from the blue Frisbee he kept hanging on his door "to help when things got too stressful for us."¹⁴⁹

While Calhoun and his associates had outlets for their stress, the rats and mice in his “universes” did not, and hence the suffering that ensued. It was simply no wonder that one article on his work would be called “The small satanic worlds of John B. Calhoun.” While there are plenty of reasons to believe that Dr. Schultz was not a carbon-copy of Calhoun, the shades of some of his attitudes toward the suffering of his subjects certainly haunt the pages of Conly’s book.

¹⁴⁷ “Rats! The Real Secret of NIMH: The Magic Inside the Local Laboratories Where the Rodents Are Getting Smarter,” *The Washington Post*, July 21, 1982, John B. Calhoun Papers, History of Medicine Division. National Library of Medicine.

¹⁴⁸ “Rats! The Real Secret of NIMH: The Magic Inside the Local Laboratories Where the Rodents Are Getting Smarter.”

¹⁴⁹ “Rats! The Real Secret of NIMH: The Magic Inside the Local Laboratories Where the Rodents Are Getting Smarter.”

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