

Arresting Monstrosity: Polio, *Frankenstein*, and the Horror Film

DWIGHT CODR

He was paralyzed with fright!

—Dr. Phipps in *Night Monster* (1942)

It wasn't my imagination. It was a giant, and when I got up he had ahold of my arm.

—Peter von Frankenstein in *The Son of Frankenstein* (1939)

Old broken bodies made new!

—Frederick Bradman, on therapy for poliomyelitis (1933)¹

EVER SINCE THE PUBLICATION OF CHRIS BALDICK'S METACRITICAL approach to the history of *Frankenstein*, in 1987, scholars have focused on the ways in which Mary Shelley's 1818 novel has been deployed, often to "articulate cultural hysteria" (O'Flinn 208). I wish to argue that given the context of epidemic poliomyelitis, mid-twentieth-century cinematic re-mediations of Shelley's monster were uniquely important in articulating mass fears, perhaps more so than its original depiction (which, for reasons I will discuss, would have been an inappropriate reference point for polio culture). In exploring the ways in which polio is encoded in cinema, I aim to show how the *Frankenstein* franchise and other horror films of the polio era worked in the service of public health initiatives and that if, as critics sometimes suggest, the first golden age of horror began with James Whale's *Frankenstein* (1931), it was because it provided a cinematic grammar exceptionally appropriate to the age of polio.

This is largely unexplored territory.² As Marc Shell puts the problem, "Recent books about disability and the cinema suffer from a failure to consider the simultaneous advent of popular cinema

DWIGHT CODR, assistant professor in the Department of English at the University of Connecticut, Storrs, teaches a semester-length course on Mary Shelley's *Frankenstein*. The author of published essays on Daniel Defoe, John Law, and Elizabeth Inchbald, he is working on a book on finance and the ethics of uncertainty in the long eighteenth century.

© 2014 DWIGHT CODR

PMLA 129.2 (2014), published by the Modern Language Association of America

171

(with its focus on kinesis) on the one hand and the epidemic of polio (with its forced stasis) on the other” (134–35). Part of the reason for this, Shell argues, is that Hollywood acknowledged polio’s importance but went to great lengths to avoid its explicit presentation, as his adroit reading of Hitchcock’s *Rear Window* illustrates. Polio, therefore, often appeared to audiences as a coded and oblique network of references and allusions rather than as the overt subject matter of cinema. Adding to Shell’s analysis a consideration of horror films from the same period suggests a further dimension to polio culture: in horror, films traded less on stories of struggle and sought instead to exploit and reproduce the “spine-chilling” fears activated by the threat of disease. This essay shares Shell’s interest in a culture that was terrified of poliomyelitis—a term coined to describe swelling of the gray matter of the spinal cord. The same culture was also increasingly consuming terrifying films routinely described, as Whale’s *Frankenstein* was, as capable of sending “cold chills up and down the good old spinal cord” (Williams). In horror films, paralytic, deformed, and otherwise “abnormal” bodies do not typically represent the individual in a state of transition to “normalcy” but instead depend on and revel in the vast difference between the normal and the abnormal.

To underscore the impact of the convergence of cinema and polio on Shelley’s monster, the first section of this essay briefly surveys its embodiment before Boris Karloff; the second section demonstrates the coded—at times, barely so—presence of polio in the golden age of horror; in this light, the third section analyzes relevant moments and motifs in the *Frankenstein* film series. The last section evaluates a 1947 film produced by the National Foundation for Infantile Paralysis in relation to the horror films previously discussed and closes with a consideration of the social implications of “the Karloffian monster.” This phrase here describes not only

Karloff’s screen performances but also later cinematic horrors that drew on the aspects of Karloff’s monster—his body, gait, experiences, associates, and habitations—that coincided with and helped to define polio culture. I aim to isolate and study a strand of cultural hysteria as it manifested itself in the genre of the horror film; my goal is to show the symptoms and results of this cross-contamination between the spheres of cinema and public health, specifically the impact of polio culture on the horror film and the role of the horror film in the fight against polio.

Monstrous Bodies before Karloff

So ingrained in our cultural consciousness is Karloff’s monster that it is easy to forget how substantially it deviates from the monster described in Shelley’s novel and portrayed in early theatrical and cinematic productions. Shelley’s monster, for instance, suits the hostile physical expanses to which he is paradoxically confined: “I [Victor] suddenly beheld the figure of a man, at some distance, advancing towards me with superhuman speed. He bounded over the crevices in the ice, among which I had walked with caution.” Espying the monster outside Geneva, Victor remarks, “I thought of pursuing the devil, but it would have been in vain, for another flash discovered him to me hanging among the rocks of the nearly perpendicular ascent of Mont Salève. . . . He soon reached the summit and disappeared.” Victor further wonders, “Who could arrest a creature capable of scaling the overhanging side of Mont Salève?” After Victor’s deposition, the magistrate replies, “I would willingly afford you every aid in your pursuit, but the creature of whom you speak appears to have powers which would put all my exertions to defiance. Who can follow an animal which can traverse the sea of ice and inhabit caves and dens, where no man would venture to intrude?” Elsewhere Victor observes that he “saw him descend the

mountain with greater speed than the flight of an eagle” and move “with more than mortal speed” (65, 48, 49, 139, 100, 141). Combining these testaments to the monster’s abilities with the reminders of his hideousness—too numerous and obvious to require listing—reveals an author and era comfortable pairing ostracizing physical deformity with superior physical competency.

Nineteenth-century graphic artists emphasized this competency, not his ugliness or unholy creation. The monster appearing on the cover of Richard Brinsley Peake’s adaptation as it was printed in Dicks’ *Standard Plays* is European in appearance and handsome as well (fig. 1). Lithe and flexible, reclining with the confidence of an unthreatened man, he towers over the diminutive Victor, whose off-balance pose and slender, downwardly pointed sword symbolizes his physical impotency. For contrast, a strategically drawn baluster, intimating the monster’s colossal genitalia, registers his manliness and impossible virility. The monster’s handsomeness in this and other images suggests that his monstrosity consists in something other than ugliness, that ugliness is an accident whose removal does not compromise the character’s fundamental monstrosity.³ The monster’s monstrosity is not necessarily his ugliness, at least not in the nineteenth century or at least not for everyone.

The earliest cinematic incarnations of the monster explore ugliness but do not abandon the physicality of the theatrical adaptations. In J. Searle Dawley’s *Frankenstein* (1910), Charles Ogle’s sinister and bestial monster moves fluidly, his gestures confident and organic. In *Life without Soul* (1915), Percy Standing’s monster involved “none of the grotesque trappings of Charles Ogle” and “wore no distin-

guishing make-up” (Glut 63). Though these early films deviate from Shelley’s novel in obvious ways, their monsters continue the tradition of presenting the creature as virile, lithe, strong, agile, and even, at times, handsome.⁴ These early bodies are manifestly capable of the physical feats described by Shelley, and they evidence a general consistency with the monster’s physical potentiality. So how do we go from a character capable of descending mountains with eagle-like speed, of bounding across seas of ice, to the more limited Karloffian monster?

The Karloffian Monster in Context

A widely recognized source for Karloff’s performance was Paul Wegener’s unsteady and stiff *Golem* (1920 [*Der Golem*]). This, however, does not explain why audiences, actors, and filmmakers kept evoking his Golemesque attributes in the ensuing decades. Establishing the polio context helps to do so. Karloff’s

FIG. 1

Frontispiece of Richard Brinsley Peake’s *Frankenstein*. Courtesy of Ruth Lilly Special Collections and Archives, IUPUI University Library.



monster appeared in the years between the first two major polio outbreaks and attained iconic status in the next two decades, as the polio fear approached its climax. A complex and multiform disease, polio causes, among other symptoms, muscle tightening, stiffness of the legs or arms or both, slackening of facial muscles, labored or abnormal respiration, and slow, unsteady movement, all of which feature in the performances of Karloff and his successors. The kinetic similarities have been noted by polio survivors but not by historians of polio or by readers of Whale's film. Charles Mee writes of a childhood experience when his doctor and "three of her strong-armed assistants sat me up on a cot and swung my steel-clad leg over the side. Like Frankenstein. . . . Then they tilted me forward and lifted me up at the waist on my left side only so that the foot came off the floor, and my steel leg swung forward absurdly" (qtd. in Wilson, "And They" 184). Similarly, Michael Perrault writes of his childhood, "Eventually, I did [walk again]. But it wasn't without cold hard metal inserts under my arches in ankle-height orthopedic shoes attached to heavy chrome braces that clunked and gave me Frankenstein-like movements." Whereas braces and orthopedic shoes had helped Perrault and others walk, Jack Pierce, the makeup artist for Whale's film, "gave Karloff a five-pound brace to wear on his spine to keep his movements impaired and stiff, and a pair of raised boots that further hampered his walking, weighing an uncomfortable twelve and one-half pounds each" (Glut 103). Under such conditions, "any conception of the Monster as fleet . . . disappeared" (Lavalley 263). Whether the underlying body needed support or impediment, the impact of these technologies on viewers—of the cinematic monster or the polio victim—was the same. Seeing Karloff in Whale's film was to see a version of polio; for survivors, experiencing polio therapy was to experience being Karloff.

But limiting our attention to Karloff's 1931 performance would be a mistake, for

later screen monsters—within and without the Frankenstein canon—made his canonical through repetition, allusion, and citation. In other words, Karloff was undoubtedly influential, but his performance was made meaningful by later screen monsters, portrayed by an array of actors who grafted parts of his monster onto their own. So by "the Karloffian monster" I mean a set of performances that were as responsible for Karloff's iconicity as Karloff was for the performances. Hence, analyzing his 1931 monster requires us to consider as well Karloff's traces in monsters of the later 1930s and the 1940s, which legitimated his original performance. Much is to be gleaned from an evaluation of *Frankenstein's* precursors—including *Der Golem* and F. W. Murnau's *Nosferatu* (1922), where vampirism translates as plague—but because what is at stake here is Karloff's canonization in and his long reach into the golden age of horror, I focus on later films.

The Karloffian monster emerged, then, out of a series of films from Universal Studios that began with Whale's 1931 *Frankenstein*; Karloff reprised the role for *The Bride of Frankenstein* (1935) and *Son of Frankenstein* (1939). Lon Chaney, Jr., presented the same basic figure in *The Ghost of Frankenstein* (1942); Bela Lugosi, having acted the part of Ygor for *Son*, played the monster in *Frankenstein Meets the Wolf Man* (1943). Glenn Strange exploited the comic potential of an awkwardly mobile monster for *Bud Abbott and Lou Costello Meet Frankenstein* (1948), but Strange had appeared as the monster in two "serious" films before this: *House of Frankenstein* (1944) and *House of Dracula* (1945). Lugosi's and Chaney's monsters were exaggerations of Karloff's, Strange's the most hyperbolic. In 1957, when Hammer Film Productions took over the franchise, Christopher Lee's monster, in *The Curse of Frankenstein*, bore no resemblance to Karloff's: gone were the electrodes, the stiffness, the unbalanced stride. Lee's break with the tradition was

nowhere more apparent than in the scene where audiences first saw his visage. Where in close-up the camera had lingered on Karloff's slackened face and sunken eyes, Lee violently dashes away his bandages. Why Hammer went in a new direction is less important than the fact that Karloff's monster, not Lee's, persists in our cultural memory.⁵ Polio provided an organizing frame of reference for consumption of the Karloffian monster, and while the end of the polio scare in 1955—the year of Jonas Salk's polio vaccine—corresponds to the end of the Karloffian monster on-screen, its endurance as icon bespeaks the presence of an unresolved cultural remainder, a point to which I will return at the end of this essay.

Beginning in 1916, polio inserted itself into the American imaginary, for two reasons.⁶ First, many people were infected or personally knew someone that had been infected by it. Because of reporting discrepancies, mortality and infection statistics vary, but, to provide some perspective, there were 27,000 cases and 6,000 deaths the year of the first polio outbreak (1916). That year 9,000 New Yorkers alone contracted polio. Infections rose and fell over the years. In 1952, a particularly bad year, there were 58,000 cases. Second, the public campaign against polio made it a matter of concern for all citizens, regardless of actual infection. Less than a week after the New York epidemic of 1916 was publicly announced and acknowledged, children, infected or not, were officially barred from entering movie houses (Gould 5), which was part of a larger process of turning a medical matter into one of public policy. Officials stressed hygiene and discouraged attendance at public places of resort, especially swimming pools; doctors became celebrities; March of Dimes' logos appeared in advertisements for films, clothing, financial services, and other products. If one did not suffer from polio, one was enlisted in the fight against it.⁷ The president of the United States for much of this era had polio, and, notwithstanding some attempt at

concealment, polio made its way into public consciousness through his presence in newspapers, broadcasts, and conversation.

If we intend to read Karloff in a polio context, what accounts for the fifteen-year gap separating the first epidemic, in 1916, from the distribution of Whale's 1931 film? Neither imagery of children suffering from polio nor the technology to circulate it was available until somewhat later. The first publicized acknowledgment of the disease as an American problem did not take place until 1926–27, when FDR established the whites-only Warm Springs Foundation. The invention of the iron lung (1927) further enhanced polio's profile; it assisted sufferers with breathing and saved many lives, but in immobilizing the body and looking rather like a coffin, it “became the most terrifying symbol of polio's destructive power” (Oshinsky, following 150). The National Foundation for Infantile Paralysis (NFIP), designed to heighten awareness and sponsor research, was not founded until 1937 and only came into its own the following year when Eddie Cantor publicly styled its fundraising arm as “the March of Dimes” (MOD). As a result, the images of polio multiplied rapidly in the late 1920s, were increasingly distributed in the 1930s, around the time of the first *Frankenstein* films, and were universal by the 1940s. In 1941 the Tuskegee Infantile Paralysis Center (TIPC), for African American victims, supplemented the Warm Springs Foundation, NFIP, and MOD; its establishment was “marked by a ceremony broadcast nationally on the radio,” featuring an address by FDR (Rogers 784). Although TIPC was an outgrowth of Jim Crow, the center's institutional ties to NFIP began the work of communicating that polio was an equal-opportunity disease and that the effort to combat it therefore had to include all racial identities.

The outing of polio was further delayed by the fact that sufferers had been and would continue to be kept out of sight by their families because of stigma. The antipolio

campaigns only gradually brought into the public eye what had been kept as family secrets (Wilson, "Crippling Fear" 486–87 and "And They" 176–77).⁸ The publicity campaign gained momentum when, in 1934, three years after Whale's first film, another major outbreak of polio occurred, this time in Los Angeles, where *Frankenstein* had been filmed and where its sequel, *Bride*, was being filmed. Reports of "50 new cases a day" induced panic (Paul 221). Perhaps because the outbreak occurred in a city tied to film production, that industry took a keen interest in the polio problem. In the early 1940s the largest source of donations to MOD was the collection boxes circulated in movie theaters: "In 1938 annual contributions to the March of Dimes amounted to \$1.8 million. By 1945 that figure had reached \$19 million, the most ever raised by a charity other than the American Red Cross. Forty percent—almost \$8 million—came from local movie houses" (Shell 69). For reasons aside from their professional ties with New York and Los Angeles, theater owners were surely aware, while closures and attendance restrictions continued, that their venues needed to be seen as part of the solution rather than a source of the problem.⁹ Just as TIPC had implicitly increased polio's relevance to racial minorities, the theaters' practices incorporated an erstwhile private concern into an expanding public network of information and research.

What did Hollywood have to offer in its films? In *The Healer* (1935), a Warm Springs doctor treats the polio-stricken Jimmy while trying to sort out his own love life during a vacation. *Never Fear* (1949) tells the story of a dancer tragically stricken by polio and her fight against it. A few films had minor characters suffering from polio or subplots pertaining to it—*Leave Her to Heaven* (1945), *Roughly Speaking* (1945)—but even as newspaper readers during this period "may have felt as if there was nowhere to run from the endless train of bad news related to polio"

(Foertsch 153), what surprises is how few films directly confronted the epidemic.¹⁰ In those that did, polio often serves as a convenient backdrop for the unfolding of a human drama and has little to do with the historical realities of the disease. *The Healer*, perhaps the most sustained cinematic treatment of polio before Salk's vaccine, simply translated the terms of a 1911 novel about cancer (Herrick). As Shell observes, "a movie or stage play that says it is about polio may not be essentially about polio" (151).

While only a handful of films explicitly confront polio, allusions to it abound in the horror genre. What appears to mark the territory of the horrific in cinema of this period is the frequent citation of polio in forms other than itself: blood, body parts, injections, serums, experiments on simians, laboratories, prosthetics, restraints, therapy, and doctors.¹¹ Establishing this context for the rise of the horror genre makes it easier to appreciate and understand the fears and anxieties that attended the viewing of many films of the period. To list a few before moving on to a more sustained consideration of others: *The Black Room* (1935) features Boris Karloff as Anton, whose paralyzed arm plays a key role in the plot; in *The Man Who Lived Again* (1936), Dr. Laurence (Karloff) undertakes his diabolical plan with a surgical assistant who requires a wheelchair; the plot of *The Return of Dr. X* (1939) concerns the use of synthetic blood in reanimating the dead. Full of details concerning doctors who seek cures, inject patients with mysterious serums, experiment with animal parts, and immobilize bodies by strapping them down to gurneys or into machines in confusing laboratory spaces, these films recall stories about vaccination programs in the 1930s, about the arrival of Elizabeth Kenny and her unauthorized therapies focusing on "reintroducing" stiffened limbs to the brain, and about research into and development of respiration devices, braces, restraints, and dietary and hygiene regimens

recommended by research centers from Minnesota to Georgia, Tuskegee to New York. Thematically speaking, horror's interest in reanimation also echoed the increasingly unstable boundary between life and death exemplified by the liminality of life in a coffin-like iron lung, as well as the somewhat confusing notion of "live" but "attenuated" vaccines.

During this time, Karloff routinely played the role of patient or doctor wrestling with issues of life, death, body parts, disease, and cure. In *The Man They Could Not Hang* (1939), he plays both. In *Before I Hang* (1940), he is a doctor researching a cure for aging; in *Black Friday* (1940), he reanimates his dead friend by using the brain of a deceased gangster; in *The Devil Commands* (1941), Dr. Blair (Karloff) attempts to make contact with his dead wife. Even when he was not cast, Karloff's presence could be felt in films dealing with such themes. In *The Monster Maker* (1944), the villain, played by J. Carrol Naish, bears a name, Dr. Igor Markoff, that could not more obviously evoke Ygor of the *Frankenstein* franchise and Karloff. While attempting to find a cure for the disease that killed his wife, Markoff cultivates a live form of the disease from "a concentrate of pituitary [gland]," which, when injected into the patient, impairs movement by producing severe physical deformity. This story capitalized on widely publicized experimentation with simian tissue in polio research; scolding his assistant for requesting the removal of a gorilla that is caged in his office, he remarks that the ape is "essential to my work."¹² As Markoff's diabolical plan unfolds, his increasingly deformed victim, the pianist Anthony Lawrence, chastises him: "Markoff! You have set yourself up as a Frankenstein and created a monster! I am that monster; but, if you remember, the monster destroyed the man who created him! That is what I'm going to do to you, Markoff!" At such a moment, in the mid-1940s, Karloff is Markoff, Markoff is Frankenstein, Lawrence is the monster, the monster is Karloffian; the

film is thickly huddled and unstably allied with *Frankenstein* in an atmosphere of polio, disability, and experiment.

It is customary to see the mad doctor as interchangeable with the mad scientist, no doubt in part because Karloff was cast in both roles, but this fails to appreciate an important dimension of horror in the golden age, when polio presented true horror stories in the form of the widely publicized 1935 inoculation catastrophes associated with the researchers Maurice Brodie and John Kolmer. Much of the horror of these films consists in the threat that doctors might *become* scientists. Most of the films listed above feature villains who experience some kind of personal trauma and, in attempting to cure, become killers. Although Dr. Frankenstein and other madmen of horror are "scientists," the polio epidemic provided a medical frame of reference for their science. For instance, in *Night Monster* (1942) three doctors visit the estate of a wealthy former patient of theirs, Curt Ingston, who is now a quadriplegic; in a series of dialogues, each doctor reveals his careerist motivations and mercenary interests, indicating an unethical blurring of care and research. As the doctors are murdered in succession, everyone suspects the wheelchair-bound Ingston, believing that he may be faking paralysis. This suspicion subsides when it is discovered that he is a quadruple amputee. But the plot turns again, and Ingston is revealed to be the killer: we learn that he has acquired the ability to psychokinetically materialize arms and legs to carry out his revenge on the doctors who treated him as a research project. Audiences are not told what this research was exactly, but they would not have had to reach far to infer that the doctors were treating arms and legs rendered inoperative by polio to advance their own selfish, shadowy agendas. Although Ingston's paralysis is not explicitly ascribed to polio, one should consider Shell's insight regarding the constitutive ambiguities of polio

culture: “How could one tell for sure what was the cause of a person’s being in a wheelchair? . . . Captain Ahab . . . in *The Sea Beast* (1926) has lost his lower leg, so we might figure that his situation is that of an amputee. But what if he is tricking us? Or what if amputation were a treatment for polio? How would we know for sure?” (150–51). Ingston represents the polio victim not because he is so described but because the audience is forced to ask, What if he is tricking us? The film takes us to the heart of polio culture not because it places a quadruple amputee at the center of its narrative but precisely because it refuses its audience an explanation for this central fact of the narrative.

To audiences in the theaters Shell discusses, who had likely just been asked to donate to MOD, Ingston’s psychokinetically generated legs and arms would have been richly meaningful. They may have provided wish fulfillment for some victims, a psychocinematic kinesis that fantastically solved what Shell describes as the “forced stasis” of polio, but they also reminded audiences that a scientific solution to paralysis was, in 1942, as tragically unlikely as a psychokinetic one. In addition, they recall the mysterious movement of polio from victim to victim. How could a disease that impeded its victims’ mobility be so easily transmitted? Although this is not hard to grasp, since many polio victims retained or regained mobility and since bodily intimacy was not, in any case, necessary for transmission, such realities do little to ameliorate anxieties about disease (as similarly irrational anxieties about HIV transmission in the 1980s and 1990s demonstrate). Much of the highly publicized medical research leading up to the vaccine was concerned with questions of transmission: did the disease require physical contact? did it spread through the air? could it be spread through objects, such as pencils? was it transmitted along a nasal-oral or fecal-oral route? “Polio fears were exacerbated by the lack of

solid medical knowledge regarding the disease” (Wilson, “Crippling Fear” 469). A variation of the transmission question serves as *Night Monster*’s central mystery: how can a man confined to a wheelchair hunt down his victims? Ingston’s homicidal mobility serves as a trope for this line of inquiry, and, like the disease he figures, it was frightening to the extent that it was inexplicable. Psychokinesis enters the film’s reality through the magical kinetics of film, suggesting that the palpable threat of immobility provides an exigency, authority, and market for films whose frights and mysteries derived from editing trickery.

The Ape (1940) weaves together aspects of *The Monster Maker* and *Night Monster*: Dr. Bernard Adrian (Karloff) attempts to cure the wheelchair-bound paraplegic Frances, the victim of a “paralysis epidemic” that recently hit the town (extras in the film use crutches). Adrian discovers that human spinal fluid cures paralysis; when an ape escapes from a local circus, he kills it, dresses himself in its skin, and goes out to collect fluid from members of the community until authorities shoot him dead. Mad as Adrian may have appeared, his motivation for killing was to cure Frances, and he did just that: the film closes with an image of her walking in the sunshine with her boyfriend. Nevertheless, the townspeople rightly feared Adrian, believing that he would treat them as “guinea pigs.” The film refers only to a “paralysis epidemic,” and although unmistakably dealing with polio—its symptoms, its victims, the race for a cure, medical technologies, simians, epidemic disease—the film never mentions it by name. But, again, few films in any genre did so. Here polio reveals itself only in the paralysis plot and the otherwise baffling ape appearance.

More broadly speaking, *The Ape*, *Night Monster*, and *The Monster Maker* all work to unsettle markers of difference. Playing on fears that doctors have ulterior scientific agendas, each film makes the doctor out to be criminally insane, displacing the more ra-

tional fear of what was happening with real-world doctors working on polio. Presenting their victims as male and female, criminal and official, young and old, rich and poor, collectively these films asked audiences to see past differences and to recognize a shared vulnerability vis-à-vis a complexly figured nemesis/disease (which are occasionally, as in *The Monster Maker*, the same thing). Many such films present carnally threatening simians that, on the one hand, exploit white audiences' racist fears of black male sexuality but, on the other, resolve the ape into a scientific prop, at least provisionally bracketing the issue of race by suggesting that apes are not always black men; sometimes they are research experiments.¹³ These films show bad doctors and the disease as menaces to a citizenry defined by its common need for a cure.

The Karloffian Monster

Important as the kinesiologic similarities of the Karloffian monster and the polio sufferer are to this reading, the intersections of polio culture and *Frankenstein* are not confined to the monster's walk, posture, and appearance.¹⁴ For instance, the immobility that should have rendered the disease less contagious made it all the more terrifying, just as the monster's plodding deliberateness of movement instilled in audiences nervousness rather than a sense of security. Correspondingly, the physical limitations imposed by polio contributed to rather than detracted from the perceived and real lethality of contagion. Scenes in *Frankenstein* and its sequels wherein the slow-moving monster is suddenly at the point of attack dramatize the anxious anticipation of viewers regarding the nature of polio contraction. Viewers at the time did not establish this connection, but a reviewer of *Son of Frankenstein* seemed to sense that the monster's gait, somewhere between humorous and horrifying, had something to do with the film's effect on au-

diences: "Once more Karloff appears as The Monster, an amazing creature that stalks about in wooden soldier manner, and weeps because he isn't as handsome as Mr. Rathbone. The plot leads to shrieks and nervous paroxysms of laughter" ("New Films"). Shelley had paired the monster's brute strength with the locomotive swiftness of an athlete, thereby enabling the illustrator of Peake's adaptation to render the monster as an Achilles; Karloff paired brute strength with the locomotive impairment of disease, creating a being who was unconquerable and destructive but also "wooden," immobile.

Did Karloff merely bring a dose of realism to the performance, suggesting that such a monster would logically be a little unsteady at first? Certainly, another way of reading Karloff's character is to see in his awkward steps the instability and uncertainty of a child's first steps. As a newborn, the cinematic monster can be read as infantile and incipient rather than adult and "finished." Why, however, were audiences inclined to keep revisiting the spectacle of a giant walking like a child? Polio threatened to impose paralysis on the child, to turn an immobility natural to infancy (the inability to walk or to walk well) into a permanent and thus unnatural condition of life (limping, paralysis).¹⁵ The monster therefore evokes complex fears associated with the idea of a mature mind with an infant's legs, an adult trapped in a child's body.¹⁶ In this way, the Karloffian monster stoked fears about polio by embodying the polio victim as a sort of death-bringing man child, who, enabled by technology just enough to move about, is best kept at a distance.

The importance of children in the *Frankenstein* films is hard to overstate, for they feature prominently in *Frankenstein*, *Bride*, and the significantly titled *Son of Frankenstein*. The scene where the monster kills Maria in the first of these films piqued the ire of the Motion Picture Directors Association



FIG. 2

Frame from *Son of Frankenstein* (1939).

of America (MPDAA), leading to the scene's excision. The MPDAA's censure of the scene may have intensified the horror of what remained in the film, however. Now there was a gap between the monster's approach to the child and the bearing of her corpse through the street by her grieving father, a gap that audiences were made to fill in with speculative details of her demise.¹⁷ While it was the philistinism of the MPDAA that had produced this vagary in the plot of *Frankenstein*, provocative indeterminacy is exploited in *Son of Frankenstein*. Repudiating Baron Wolf von Frankenstein's claims that townspeople must be overstating the monster's past villainies, Inspector Krogh informs Wolf that he himself lost his arm to the monster—we see that it has been replaced with a prosthesis—when he was a child.¹⁸ Krogh's account of losing his arm is later echoed when Wolf's son Peter informs his father that he was awoken from his nap by a "giant" who grabbed hold of his arm (see the second epigraph). Krogh starts at this, grabs his prosthesis, and facially communicates the trauma of recollection as well as his determination to kill the monster. Wolf continues to interrogate Peter about this moment of contact, which occurred offscreen,

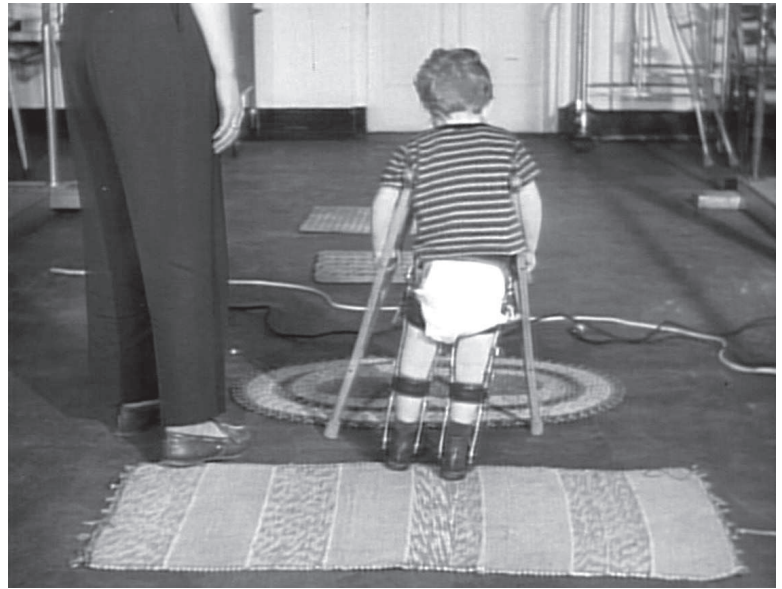
like the monster's encounters with Maria in *Frankenstein* and Frida in *Bride*. To help his father (and the audience) understand what happened, Peter says that he was visited by "a great big man, and he walked like this," giving an imitation indistinguishable from that of a child in leg braces using crutches (fig. 2). Peter's stiffened gait is supposed to be an imitation, but it encodes the contraction of polio (fig. 3). Maria and Frida die after a menacing and uncertain presence is allowed to invade a space that should be under parental supervision; the same convention is invoked but also transformed when

Peter is assaulted while napping in the comfort of his own, erstwhile safe home.

There are multiple overlaps between the films in the *Frankenstein* series and polio culture. *Son of Frankenstein* presents several in addition to that involving Peter. Wolf, for instance, subjects the monster to a barrage of medical tests to determine the nature of the affliction that has incapacitated him, and it turns out that the monster suffers from symptoms that characterize polio: high blood pressure, rapid heartbeat, enlarged heart. Listing the symptoms in the film at all anticipates the use of increasingly recondite medical language in horror films as audiences grew accustomed to such things as blood pressure and acromegaly and found them to be interesting narrative material. Wolf then puts the monster on a kind of respirator and gives him a chest X-ray (fig. 4). Just after this scene, in which the monster has been fully medicalized, his differently disabled kindred spirit Ygor, exiting a meeting with local officials, is upbraided for coughing all over them and throughout the room ("Hey! You spit on me!" complains one official). The officials here, representative of the public health establishment, come into threatening contact with

Ygor through effluvia that is implicitly tainted by its metonymic connection to the film's monster, Ygor's "friend." Further, when the inspector later asks the baron why he works in a dilapidated laboratory adjacent to the main house, given the potent fumes emanating from below, Wolf replies, "The structure was built by the Romans over a natural sulfur pit and was used by them as mineral baths," evoking the Warm Springs property to which FDR retreated for its therapeutic waters.

Though the question of the monster's relation to technology is significant to the novel and its many adaptations, it takes on unique relevance for the Karloffian monster. The introduction of electrodes on the monster's neck makes explicit a fusion of organic and inorganic material that no earlier performances and few post-Universal films emphasize.¹⁹ The electrodes suggest the monster's machinic nature, illustrated through comparisons of the *Frankenstein* monster with other cinematic cyborgs and robots (see, e.g., Goldman 279–80). The electrodes became (and remain) synecdoches for the monster, much as braces would be for the polio victim. This is more than visionary reading; in explaining the reason for the electrodes in a 1939 interview, Jack Pierce, the makeup artist responsible for Karloff's stylization, revealed that "Karloff has not only spent 864 shooting hours in three pictures with those big bolts plugged into his neck but he carries a five-pound steel spine—that you can't see—to represent the rod which conveys the current up to the monster's brain" ("Oh, You"). The electrodes were imag-



ined as the visible sign of a metallic brace that constrained and defined Karloff's motions. Furthering this tendency to interweave flesh with metal, the films regularly feature the monster in a laboratory space, strapped to a chair (*Bride*) or to a table (*Frankenstein Meets the Wolf Man*), limbs restricted by bands (a routine treatment for polio sufferers), and surrounded by electronics. Perhaps

FIG. 3

Frame from *In Daily Battle* (1947). Courtesy of the March of Dimes Archives, White Plains, New York.

FIG. 4

Frame from *Son of Frankenstein*.





FIG. 5

Frame from *Son of Frankenstein*.

the most obvious nod to polio culture along these lines comes in a pair of scenes featuring the monster on a respirator. In *Son* the distraught Ygor looks on as the doctor tests the monster's breathing (fig. 5); in *House of Frankenstein* the monster breathes thanks to a respirator inside a pressurized, body-length chamber (fig. 6). The moment surely looks back to a similar scene in *Metropolis*, but it just as surely looks laterally, at terrifying and tragic images of bodies encased in iron lungs.

The Karloffian Monster and the Crippler

Polio is an important context for understanding the *Frankenstein* film series—as well as horror films more generally during the period—not merely because the disease offered frightening images and themes that could be incorporated into films already deemed horrific but also because golden-age horror organizes itself according to the logic of a polio culture, one that gave it a ready and real set of terms, images, and fears to employ and exploit. But polio culture is not all that is at stake here; this final section looks at the impact that organizing public health initiatives around

the figure of the monster had on polio's victims. Representing disease as a kind of monster naturally led public health officials to the shadowy figures of horror film, but whereas the horror film could always cut ties with its coded significations and send its monsters to the grave with impunity, the polio-era public health film was forced to explicitly equate the monster with the “crippled” polio victim. One effect was to make the victims of the disease into monsters.

It is impossible to say with precision what is the nature of a culture's diffusive fears and how the overlaps described in the preceding sections affected ordinary

viewers in movie houses (though, as I have indicated, polio survivors have noticed similarities). However, the evidence plainly suggests exchanges between the two discursive, symbolic, and iconographic registers, and if NFIP was not exactly sponsoring new *Frankenstein* films, it was nevertheless looking to horror to help articulate its mission and mobilize supporters. In 1947 MOD, NFIP's fund-raising arm, released a promotional film officially entitled *In Daily Battle*; unofficially, the film took the name that polio had popularly assumed: *The Crippler*. It begins with a prelude spoken by the United States surgeon general, Thomas Parran, who observes that polio's “treacherous attacks” are adding more names each year to the list of its victims; Parran encourages the audience to watch “this motion picture” to understand polio and the campaign against it. The film proper then opens with an ominous musical note, a shot of an eerily illuminated sky, and a disembodied voice: “My name is Virus Poliomyelitis. I cause a disease which you call infantile paralysis.” Materializing in the clouds is an obscure shadow of a human-looking body bearing a crutch in its arm, emphasizing that

polio and the polio victim are the same menacing presence. The child on crutches is the victim *and* embodiment of the terrifying Virus Poliomyelitis. The voice continues: “I consider myself quite an artist, sort of a sculptor. I specialize in grotesques, twisting and deforming human bodies. That’s why I’m called the Crippler. You’ve never seen me, but I’m sure you’ve seen my shadow.” The film thus aligns the audience’s fears of the disease with the people who have been broken by it, running the risk of turning the campaign against polio into a campaign against polio’s victims.

As the shadow moves from sky to earth, the narrative takes shape. The camera settles on an adolescent country boy leading a horse through a farmyard; as he approaches a barn, the crutch-bearing shadow enters the screen from the right (fig. 7), growing larger as the voice continues: “I’m never invited, but I’ve been an invisible guest in practically every kind of home.” By the time the sentence ends, the shadow has overtaken the boy, blotting him out as the boy increasingly shows signs of illness. “This is what I’ve been looking for!” enthusiastically reports the shadow. This scenario is repeated twice: next the shadow overtakes a natty college-age man, and finally it descends on a blond girl leaving her house for school (fig. 8). As the shadow moves from country to city, the voice of the Crippler resumes, his speech occasionally punctuated with melodramatically evil laughter: “It’s easy to scare city folks, and I seem to get better results when people are afraid of me. I have many disguises that I use to fool people; you could call them symptoms. . . . As you probably know, I’m very

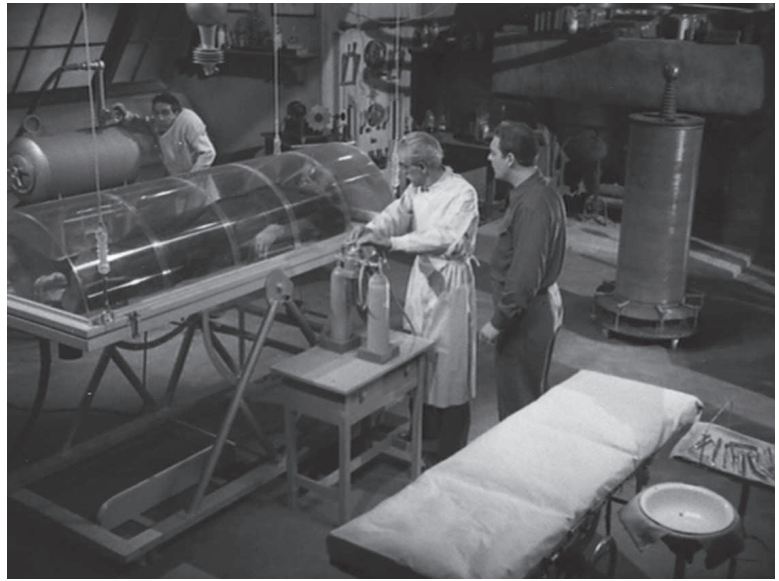


FIG. 6

Frame from *House of Frankenstein* (1944).

fond of children, especially little children.” The camera sweeps past a group of African American children: “I have no prejudices; I’m quite impartial. . . . I feel very active today; I may even start an epidemic.” The use of ominous shadow in horror films extends back to German expressionist cinema, but in its proximity to the child it visually echoes a scene in *The Ghost of Frankenstein* in which the monster looms above a sleeping girl (fig. 9).

FIG. 7

Frame from *In Daily Battle*. Courtesy of the March of Dimes Archives, White Plains, New York.





FIG. 8

Frame from *In Daily Battle*. Courtesy of the March of Dimes Archives, White Plains, New York.

Eventually, the film drops the Crippler conceit and explains how doctors relay messages to NFIP and how local agencies work in this coordinated effort to help families address their needs. A triumphal march commences after the recovery of the three victims—which is gradually revealed in a lengthy montage featuring doctors, nurses, public officials, switchboard operators, and the system of diagnosis, treatment, and care

FIG. 9

Frame from *The Ghost of Frankenstein* (1942).



that NFIP helped put into place. A different nondiegetic voice, sounding confident and optimistic, closes the film to images of happy children running: “And with your help, your National Foundation carries on its relentless crusade for the ultimate extinction of the shadow that creeps through the land, seeking whom it may destroy. Your continued support will hasten the day when all our children, *free of the Crippler’s terror*, may enjoy their heritage in happiness and health” (my emphasis). NFIP successfully reintegrates polio’s victims into family and society following their “cure” and

allows them to live out a harmonious, multicultural, distinctively American “heritage.” What was to be done about those who would not regain full mobility is a matter that lurks on the dark side of the film, in the space of a monster, one imported from a series of films that had made it possible for the menacing Virus Poliomyelitis to appear in an educational film as the “crippled” shadow body of the polio victim.

Just as horror had been trading on the terrifying imagery of polio for its effects, NFIP’s use of the Crippler figure suggests that cinematic terror was seen as useful in mobilizing the public. However, NFIP received multiple complaints that *In Daily Battle* was too “gruesome.” One viewer “remarked that the beginning of the film was more like a film intended for a spook show on Halloween night rather than one intended to educate the public about a disease” (Belknap). Responding to complaints about the film’s effect on young viewers, Hart Van Riper, director of NFIP’s medical department, apologeti-

cally wrote in an internal memo (Jan. 1948) that “[w]hen the script of this film was approved by the Medical Department . . . it was my distinct understanding that the purpose of the film was for stimulating Chapters to better organization and hence better service, and for stimulating interest on the part of organized groups in the community to become part [of MOD].” The film was apparently pulled shortly thereafter from the libraries of local MOD chapters. In concealing their indebtedness to polio culture, horror films flourished; public health officials, conversely, encountered problems incorporating horror’s conventions into their productions. Where filmgoers appeared to have been stimulated into buying ever more tickets for access to a steady stream of terrifying reminders of polio, NFIP discovered that it had material enough to work with already, that polio carried horror enough for audiences, and that it did not need to borrow that which it had already lent to Hollywood.

NOTES

I am deeply grateful to David Rose, at the March of Dimes Archives, for his assistance with the research for this paper and to Meghan Freeman, Gregory Colón Semenza, and Cathy Schlund-Vials for providing feedback on earlier drafts.

1. “By means of surgery . . . muscles can be transplanted and found of much more value in their new functions than they previously were. Old broken bodies made new!” (897).

2. Clark discusses other medical issues at stake in classic horror films.

3. Notwithstanding the frontispiece in Dicks’ *Standard Plays*, the monster was “hideous in aspect” and “tremendously appalling” in the performances of Peake’s adaptation, according to one account (“First Reviews”).

4. Summarizing Lavalley, Nestruck writes that “several stage versions [before Whale’s film] introduced speechlessness but kept the rapidity of movement attributed to him in the novel” (295).

5. Glut and others have detailed the material history of Hammer’s changes. All *Frankenstein* monsters must nevertheless engage with Karloff’s, “a definitive screen

version that every subsequent retelling has had to confront in one way or another” (Worland 157).

6. For reasons of space, I must restrict my focus to the American experience of *Frankenstein* during 1916–55.

7. The history of polio recounted here comes from Oshinsky; Gould; Shell; and Paul.

8. Shell observes that the imperative to secrecy pervades accounts of polio written by survivors (esp. 52–53, 57–58, and 73–74).

9. Closures of places of public resort due to polio were common at this time. In Trenton, New Jersey, for instance, theaters, Sunday schools, stores, playgrounds, parks, and churches were closed, and “gatherings of any kind” were prohibited (“Trenton”).

10. Shell discusses additional polio films, including *Sister Kenny* (1946), but most films that explicitly address polio were released after Salk’s vaccine.

11. See Tudor. I follow Tudor in arguing that the genre of horror exists only in relation to the specific historical conditions of horror films’ release.

12. The film is not clear about certain details. Markoff injects his victims with acromegaly, which is a pituitary disorder, not a substance. Essentially, Markoff uses simian glandular tissue to formulate a cure for the deforming disease but weaponizes it in the process.

13. This raises significant questions about horror, primates, race, and disease research that I do not have space to explore here. In horror, apes are at once racialized identities and deracinated experimental matter.

14. Cox describes Karloff’s monster as characterized by a “gentle and tragic . . . awkwardness,” a phrase that captures the sentimental affect that scholars of polio associate with later attitudes toward those impaired by it (223).

15. Related to the monster’s posture is the cinematographer Arthur Edson’s German-expressionist-influenced framing of Karloff in ostentatiously geometrical structures, near intersecting support beams or, more famously, in a doorway, his hands lightly touching the door frame (for balance?). At once underscoring his physical instability (needing support) and metaphorizing his own inhuman geometricity, these shots align the monster with the unstable polio victim as well as with the mechanical apparatuses involving braces and crutches designed to produce provisional motional stability. For more on the debt to expressionism, see Cox, esp. 223–27.

16. Glut writes that for him, Karloff “was in effect just a newborn baby in a giant body” (xvii). Nestruck similarly senses that the inability to speak and walk has the effect of “mak[ing] an adult a monstrous child” (296) and that “[s]eeing this grotesque adult [the monster] without these skills is somehow a terrifying reminder that our adulthood depends on our acquiring them.” I share Nestruck’s sense of the childishness of the monster’s walk and would add that in the polio era adulthood was no guarantee of able-bodiedness.

17. Glut too finds the gap more terrifying than the elided scene, proposing that the audience's imaginative bridgework results in a "suspicion that she was raped by the Monster" (114).

18. Although the more popular image of the polio victim is one of a child with paralyzed legs, polio was responsible for paralysis of the arms as well.

19. An example of a post-Universal monster with this characteristic is the one portrayed by Nick Brimble in Roger Corman's *Frankenstein Unbound*.

WORKS CITED

- The Ape*. Dir. William Nigh. Perf. Boris Karloff. 1940. Mill Creek, 2009. DVD.
- Baldick, Chris. *In Frankenstein's Shadow: Myth, Monstrosity, and Nineteenth-Century Writing*. Oxford: Clarendon, 1990. Print.
- Before I Hang*. Dir. Nick Grinde. Columbia, 1940. *YouTube*. Web.
- Belknap, Clinton. Memo. 30 Jan. 1948. TS. "Radio, Television, Film." March of Dimes Media and Publications Records. Box 3, ser. 8.
- Black Friday*. Dir. Arthur Lubin. Universal, 1940. *IMDb*. Web. 7 Jan. 2014.
- The Black Room*. Dir. Roy William Neill. Columbia, 1935. *YouTube*. Web.
- Bradman, Frederick. "Salvage." *Hygeia: The Health Magazine* Oct. 1933: 896–97. Print.
- Bride of Frankenstein*. Dir. James Whale. Perf. Boris Karloff. 1935. Universal, 2004. DVD. *Frankenstein: The Legacy Collection*.
- Bud Abbott and Lou Costello Meet Frankenstein*. Dir. Charles Barton. Perf. Glenn Strange. 1948. Universal, 2000. DVD.
- Clark, Stephanie Brown. "Frankenflicks: Medical Monsters in Classic Horror Films." *Cultural Sutures: Medicine and Media*. Ed. Lester D. Friedman. Durham: Duke UP, 2004. 129–48. Print.
- Cox, Tracy. "Frankenstein and Its Cinematic Translations." *Critical Essays on Mary Wollstonecraft Shelley*. Ed. Mary Lowe-Evans. New York: Hall, 1998. 214–29. Print.
- The Curse of Frankenstein*. Dir. Terence Fisher. Perf. Christopher Lee. 1957. Warner Home Video, 2002. DVD.
- The Devil Commands*. Dir. Edward Dmytryk. Columbia, 1941. *YouTube*. Web.
- "The First Reviews of *Presumption*." 29 July 1823. *Romantic Circles*. U of Maryland, Aug. 2001. Web. 7 Jan. 2014.
- Foertsch, Jacqueline. *Bracing Accounts: The Literature and Culture of Polio in Postwar America*. Madison: Fairleigh Dickinson UP, 2008. Print.
- Frankenstein*. Dir. J. Searle Dawley. Perf. Charles Stanton Ogle. Edison, 1910. *YouTube*. Web.
- Frankenstein*. Dir. James Whale. Perf. Boris Karloff. 1931. Universal, 2004. DVD. *Frankenstein: The Legacy Collection*.
- Frankenstein Meets the Wolf Man*. Dir. Roy William Neill. Perf. Bela Lugosi. 1943. Universal, 2004. DVD. *The Wolf Man: The Legacy Collection*.
- Frankenstein Unbound*. Dir. Roger Corman. 1990. Twentieth Century–Fox, 2006. DVD.
- The Ghost of Frankenstein*. Dir. Earle C. Kenton. Perf. Lon Chaney, Jr. 1942. Universal, 2004. DVD. *Frankenstein: The Legacy Collection*.
- Glut, Donald. *The Frankenstein Legend: A Tribute to Boris Karloff and Mary Shelley*. Metuchen: Scarecrow, 1973. Print.
- Goldman, Steven L. "Images of Technology in Popular Films: Discussion and Filmography." *Science, Technology, and Human Values* 14.3 (1989): 275–301. Print.
- Der Golem, wie er in die Welt kam*. Dir. Paul Wegener. UFA, 1920. *YouTube*. Web.
- Gould, Tony. *A Summer Plague: Polio and Its Survivors*. New Haven: Yale UP, 1995. Print.
- The Healer*. Dir. Reginald Baker. Monogram, 1935. *YouTube*. Web.
- Herrick, Robert. *The Healer*. New York: Macmillan, 1911. *Google Books*. Web. 7 Jan. 2014.
- House of Dracula*. Dir. Earle C. Kenton. Perf. Glenn Strange. 1945. Universal, 2004. DVD. *Dracula: The Legacy Collection*.
- House of Frankenstein*. Dir. Earle C. Kenton. Perf. Glenn Strange and Boris Karloff. 1944. Universal, 2004. DVD. *Frankenstein: The Legacy Collection*.
- In Daily Battle*. March of Dimes, 1947. DVD. March of Dimes Media and Publications Records.
- Lavalley, Albert J. "The Stage and Film Children of Frankenstein: A Survey." *The Endurance of Frankenstein: Essays on Mary Shelley's Novel*. Ed. George Levine and U. C. Knoepfelmacher. Berkeley: U of California P, 1979. 243–89. Print.
- Leave Her to Heaven*. Dir. John M. Stahl. Twentieth Century–Fox, 1945. *YouTube*. Web.
- The Man They Could Not Hang*. Dir. Nick Grinde. Columbia, 1939. *YouTube*. Web.
- The Man Who Lived Again*. Dir. Robert Stevenson. Gainsborough, 1936. *YouTube*. Web.
- The Monster Maker*. Dir. Sam Newfield. 1944. Mill Creek, 2009. DVD.
- Nestrick, William. "Coming to Life: *Frankenstein* and the Nature of Film Narrative." *The Endurance of Frankenstein: Essays on Mary Shelley's Novel*. Ed. George Levine and U. C. Knoepfelmacher. Berkeley: U of California P, 1979. 290–315. Print.
- Never Fear*. Dir. Ida Lupino. Filmmakers, 1949. *YouTube*. Web.
- "New Films." *Daily Boston Globe* 14 Jan. 1939: 2. Print.

- Night Monster*. Dir. Ford Beebe. Universal, 1942. Viozz. Web.
- Nosferatu*. Dir. F. W. Murnau. 1922. Mill Creek, 2009. DVD.
- O'Flinn, Paul. "Production Replaces Creation: The Case of *Frankenstein*." *Literature and History* 9.2 (1983): 194–213. Print.
- "Oh, You Beautiful Monster." *New York Times* 29 Jan. 1939: X4. Print.
- Oshinsky, David M. *Polio: An American Story*. Oxford: Oxford UP, 2005. Print.
- Paul, John Rodman. *A History of Poliomyelitis*. New Haven: Yale UP, 1971. Print.
- Peake, Richard Brinsley. *Frankenstein: A Romantic Drama, in Three Acts*. [London], n.d. Print. Dicks' Standard Plays 431.
- Perrault, Michael. "Standard Issue." *Bent: A Journal of CripGay Voices*. N.p., Nov. 2002. Web. 14 July 2012.
- The Return of Dr. X*. Dir. Vincent Sherman. Warner Bros., 1939. YouTube. Web.
- Rogers, Naomi. "Race and the Politics of Polio: Warm Springs, Tuskegee, and the March of Dimes." *American Journal of Public Health* 97.5 (2007): 784–95. Print.
- Roughly Speaking*. Dir. Michael Curtiz. 1945. Warner Bros., 2009. DVD. Archive Collection.
- Shell, Marc. *Polio and Its Aftermath: The Paralysis of Culture*. Cambridge: Harvard UP, 2005. Print.
- Shelley, Mary. *Frankenstein; or, The Modern Prometheus*. 1818. Ed. J. Paul Hunter. New York: Norton, 1996. Print.
- Son of Frankenstein*. Dir. Rowland V. Lee. Perf. Boris Karloff. 1939. Universal, 2004. DVD. *Frankenstein: The Legacy Collection*.
- "Trenton Enforces 'Polio' Quarantine." *New York Times* 6 Aug. 1945: 17. Print.
- Tudor, Andrew. "Why Horror? The Peculiar Pleasures of a Popular Genre." *Horror: The Film Reader*. Ed. Mark Jancovich. London: Routledge, 2002. 47–56. Print.
- Van Riper, Hart. Memo. 29 Jan. 1948. TS. "Radio, Television, Film." March of Dimes Media and Publications Records. Box 3, ser. 8.
- Williams, Whitney. "*Frankenstein* Growsome Entertainment." *Los Angeles Times* 29 Nov. 1931: I3. Print.
- Wilson, Daniel J. "And They Shall Walk: Ideal versus Reality in Polio Rehabilitation in the United States." *Asclepio: Revista de historia de la medicina y de la ciencia* 61.1 (2009): 175–92. Print.
- . "A Crippling Fear: Experiencing Polio in the Era of FDR." *Bulletin of the History of Medicine* 72.3 (1998): 464–95. Print.
- Worland, Rick. *The Horror Film: An Introduction*. Malden: Blackwell, 2007. Print.