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The Moral Character of Mad Scientists:
A Cultural Critique of Science

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The mad scientist stories of fiction and film are exercises in antirationalism, particularly its Gothic horror variant. As such, they convey the argument that rationalist secular science is dangerous, and their principal device for doing so is to invest the evil of science in the personality of the scientist. To understand this cultural critique of science, it is necessary to understand how the symbols of the scientist's personality are manipulated. This article argues that mad scientists become increasingly amoral as nineteenth-century texts are adapted to twentieth-century films. The consequence is that this cultural critique is becoming even more severe, due to external reasons independent of the glories or the crimes of real scientists.

The mad scientist stories of fiction and film are homilies on the evil of science. Here are modern-day exercises in the tradition of antirationalism, which argues that rationalist science is dangerous to one's spiritual well-being because it is too clinical, too abstract, and that the scientists who control the mysteries of modern secular knowledge are unaccountable to conventional standards of morality. As exercises in antirationalism, particularly its Gothic horror variant, mad scientist stories mine the raw material of these anxieties and then shape them into moral narratives that purport to explain whence comes evil in the guise of science and how to repel it. They describe which kinds of depraved people use science for amoral purposes and what becomes of them. Also, they caution us to contain secular science within the firm ethical guidelines of traditional Judeo-Christian values. Whereas science fiction celebrates science and technology by endorsing their ability to

shape our lives, mad scientist stories embody the opposite message, that science threatens our well-being.

In this article I make the claim that mad scientist stories constitute a procedure for censuring scientists and scientific knowledge, and then I explore the conventions by which the supposed evil of science is invested in the personality of the scientist. From this I argue that since the first mad scientist stories appeared in the nineteenth century, this condemnation has become increasingly more critical in the sense that fictional mad scientists have become more depraved as their tales are repeated and reinterpreted. Finally, I explain these changes, not according to developments *within* the institution of science, but rather, in terms of an external determinant, namely, the artistic processes by which a narrative moves from a textual form to drama and cinema.

For an example of the claim that evil lurks within a scientist, consider the case of Dr. Christian Szell in William Goldman's novel *Marathon Man*. The fictitious Dr. Szell is modeled on Dr. Josef Mengele, the real Nazi scientist, and he is described as Mengele's protege, Mengele's colleague at Auschwitz, and more brilliant than Mengele (Goldman 1974, 212). Szell stalks the streets of New York City, then imprisons and tortures a young Jewish historian named Tom Levy. When Levy realizes the enormity of evil in Szell, he rises up courageously, destroying him and his den of Nazi criminals. So this book is a reminder that Nazi science is ever-present and also a formula for exorcising Mengele and the other demons who create it.

This is the general moral strategy of the mad scientist story: To describe an evil that wears the face of science and then to show how to combat it. To allege that psychiatry and psychoanalysis are dangerous, there is the real-life Dr. Franz Mesmer, but there are also Edgar Allen Poe's "The System of Dr. Tarr and Professor Feather," Fritz Lang's Dr. Mabuse films, *The Manchurian Candidate*, and the granddaddy of mad scientist films, *The Cabinet of Dr. Caligari*. To denounce the destructive potential of technology, there are the statistics of death and despoliation from Chernobyl and Hiroshima, but there are also *Dr. Strangelove* and Ian Fleming's (1958) *Dr. No*. To show the mischief made possible by modern medicine, we have the litany of Dr. Frankenstein, Dr. Moreau, Dr. Jekyll, and numerous other irresponsible physicians. Simply stated, these stories are a way of shouting "Beware of Science!" In the words of Lawler (1988), these narratives offer "a madly prophetic symbolism of serious disorder in the philosophy of science and its growing hegemony over the modern mind" (p. 257). And, says Brustein (1958, 296), mad scientist movies

suggest that the academic scientist, in exploring new areas, has laid the human race open to devastation either by human or interplanetary enemies—the doctor's madness, then, is merely a suitable way of expressing a conviction that the scientist's idle curiosity has shaken itself loose from prudence or principle.

In fact, one writer, well aware of the fantastic and polemical quality of these stories, endorses them as a legitimate way of lashing back at the institution of science. Reed (1984) recognizes that "the Mad Doctor subgenre [of films] has plagued scientists as no other has" (p. 109), yet he concludes that

> to have set up so convincingly the suggestion that every man in a white coat is up to no good can't be all bad. . . . For the fear attendant on this subgenre is the fear of soulless science or of process uninformed by redeeming human purpose. (P. 109)

More specifically, several critical interpretations of film and fiction illustrate that spirit of condemnation:

— Robert Louis Stevenson's ([1886] 1984) story of Dr. Jekyll warns us of scientists irresponsibly fooling with "random uncertainties, discontinuities, and relativism" (Lawler 1988, 258);
— In the prologue to James Whales's 1931 film adaptation of Mary Shelley's ([1818] 1984) novel, we learn that Frankenstein is "a man of science who sought to create a man after his own image without reckoning upon God" (Prawer 1980, 27);
— In the 1951 film *The Thing*, scientists are seen to be "foolishly curious," and their "abnormal desire for knowledge [is] dangerous to the whole human race" (Sobchack 1987, 23);
— *Eyes without a Face*, a 1959 French film in which a Dr. Genessier kills young women so he can remove their faces in hopes of transplanting one onto his disfigured daughter, is—excuse the understatement—"an attack on the hubris of medical scientists" (Butler 1970, 173).

So, too, the moral tone of these works is evident in some of their titles: *The Madness of Dr. Tube, Doctor of Doom, The Body Snatchers, The Crime of Dr. Crespi, The Diabolical Doctor Z,* and *The Abominable Dr. Phibes.* This is also the case with the Frankenstein series by Hammer Studios: *The Curse of Frankenstein, Frankenstein Must Be Destroyed, The Evil of Frankenstein,* and *The Horror of Frankenstein.* (Each of the last four refers to the *scientist* Frankenstein, not a monster.)

If it is evident that these stories are a device for damning science, then we must ask which idioms of science are used to symbolize the evil of science.

Let us say that three kinds of idioms could be used to represent science: (1) the physical paraphernalia of science, (2) scientific knowledge, and (3) the people who are scientists. The physical equipment is a usual element of mad scientist stories, for their title characters often need laboratories in which to perform their diabolical deeds. However, the role of their equipment is peculiar, and to appreciate its role, we must first recognize a notable difference between Gothic horror and science fiction. The latter depicts the instruments of laboratories and spaceships with exquisite detail, showing exactly how they look and how they work. Witness the way every rivet and cathode is visually caressed in series like *Star Trek* and *Star Wars*, or in the novels of Tom Clancy. The reason why science fiction celebrates technology this way is that it assumes that technology is equivalent to progress and intelligence, regardless of the moral strengths or weaknesses of the good guys and bad guys who employ it. Consequently, says Sontag (1966, 216), a science fiction story earns much of its credibility from the visual fidelity of its scientific equipment and the role of that equipment in the story.

By contrast, mad scientist stories, as exercises in antirationalism, must challenge the belief that just because this stuff is scientific, it must be valuable. Yet they cannot claim that the equipment itself is evil, for antirationalism, especially Gothic horror, locates evil in the heart of man or in nature itself. If scientific equipment is neither inherently good nor inherently evil, then it must be insignificant to both morality and narrative. How, then, should it be represented? By default it comes to be depicted ambiguously, illogically, and mysteriously, in other words, irrationally. Thus are the experiments, the laboratories, the drugs, the rays, and the forces that are handled by mad scientists. The physical artifacts of their science are presented as the miscellaneous material junk of alchemists, illogically connected and barely justified.

Examples are the ambiguity of the creation scene in Mary Shelley's *Frankenstein* or the equally mysterious processes of creation in these films: *The Golem, Metropolis, Frankenstein*, and *Bride of Frankenstein*. So, too, in Stevenson's ([1886] 1984) *Jekyll and Hyde*, the pharmacology of Dr. Jekyll has barely any physical details but many ambiguous references to a mysterious salt. Yet this irrational way of representing the paraphernalia of science has a very important effect. It empties the rationalism out of the tangible evidence of science, so that the physical paraphernalia is included in the view that all reality is ambiguous, illogical, and mysterious. Thus does antirationalism tame rationalist science.

Next, there is scientific knowledge. If science can be represented in terms of knowledge and that knowledge is shown to be evil, then the case is made.

As Dr. Janos Rukh (in *The Invisible Ray*) and innumerable subsequent mad scientists learn, "There are some things man is not meant to know." However, it is difficult to represent abstract knowledge in tangible terms. Rotwang (from *Metropolis*), Caligari, and others possess knowledge in the form of dusty old volumes with worn pages, but the books themselves are not nearly as frightening as the ways in which their respective knowledge affects people. To depict knowledge in terms of its effects, instead of its intellectual substance, two strategies are at hand. In one, we learn that abstract knowledge is inherently evil because of the evidence that it corrupts people. In this category are all the mad scientist stories in which young people are innocent until exposed to scientific knowledge. According to the second strategy, if the person who uses or produces knowledge is depraved, then so is that knowledge. So then scientists are either those who have been corrupted by knowledge (e.g., Victor Frankenstein) or those who use it to corrupt others (such as the psychiatrist who torments the teenager in *I Was A Teenage Werewolf*).

In either way of saying that knowledge is evil, it remains abstract until manifested in personalities. Ultimately the evil of science is depicted and condemned principally in terms of the character of people who are scientists. Says Sontag (1966), "When the fear of science is paramount . . . the evil has no attribution beyond that of the perverse will of an individual scientist" (p. 223). That their intentions are evil, that they feel no remorse for their misdeeds, that they ought to know better than to commit their diabolical deeds — these features of personal morality are combined to create the personalities of the mad scientists who then personify the evil of the institution of science. (Incidentally, the conscience of science can also be personified: Dr. Waldman in the film *Frankenstein*, Dr. Lanyon in most versions of *Dr. Jekyll and Mr. Hyde*, and the Bela Lugosi character in *The Invisible Ray* are ethical scientists who caution mad scientists to cease their experiments and return to conventional morality. However, this is often a device for underlining the amorality of the mad scientists, who typically reject the ethical advice, and sometimes murder those who personify it.)

I will return to this topic and give it more substance, but first I need to introduce the next problem, namely, that this crucial element in the cultural critique of science has been changing over many decades, in the sense that fictional mad scientists have been getting increasingly amoral. If so, then a problematic relationship is getting worse, in which case it is necessary to identify a pattern of change and specify its cause.

Questions of Historical Change

In examining this topic over time, the most basic question is whether in fact mad scientist stories experience substantive change. In one way of thinking, they do not: These stories tell the same old basic narrative again and again. This paradigm of stasis, whether referring to literature or film or both, is rooted in analysis by genre and archetype. According to the more conservative understanding of genre, certain stable fundamentals can be described so that works of human creativity, regardless of when they were produced, can be classified in one genre or another. Like a typology according to Linnaeus, analysis by genre assumes that there is a stable order that can be mapped in terms of static characteristics. Similarly, an archetype is an unchanging model of an unchanging reality.

The paradigm of stasis, as applied to mad scientist stories, can be read in the words of Baxter (1970), who notes "the ritualized nature of [Hollywood films] in which the use of traditional elements takes priority over the imaginative creation of new ones" (p. 49). Also, Basalla (1976) summarizes his historical review of mad scientists in comic books by concluding that the "portrayal of the scientist is remarkably consistent with an older tradition that saw the scientist as a dangerous figure who tended toward mental instability and social irresponsibility (p. 263).

Bunnell (1984) defines Gothic horror in terms of three salient static features (namely, emotional involvement, the duality of reality, and certain stock motifs; pp. 80-82). Prawer (1980) concludes that by the 1930s, mad scientist films had crystallized into "strictly defined character-types and limited situations" (pp. 38-40).

To be fair, these authors note some historical changes, but still they launch their analyses from initial assumptions of stasis. "The mad scientist stereotype . . . stems from an ancient heritage" (Weart 1988, 143); it has medieval roots, it springs from medieval prototypes [that is, wizards, sorcerers, and alchemists], and it still embodies a medieval spirit (Brustein 1958, 288); it hearkens back to premodern tales (Basalla 1976, 263).

On the other hand, there are commentaries that acknowledge that mad scientist stories do indeed change. Among these views, it is necessary to distinguish two separate explanations of change. In the first, it is assumed that events occurring within scientific circles produce changes in mad scientist stories, thereby implying that these narratives are an external cultural reflection of an internalist reality. The mutant-monster movies of the 1950s, for example, *Them*, are obviously dependent upon knowledge of atomic testing. In his history of psychiatrists in films, M. Fleming (1985)

shows that many changes in this category are paced by developments within the medical field, including the clinical successes of U.S. Army psychiatrists during World War II. Similarly, Weart (1988) traces a series of mad scientist films directly to their real-life inspirations in twentieth-century atomic physics. Twitchell (1985, 54) proposes that the 1980 film *Altered States* reflects Dr. Timothy Leary's theories on hallucinogens, and Wolfe (1976) ties *Dr. Strangelove* directly to particular events of the 1950s and 1960s. Also I must mention that Tudor (1989) explains changes in mad scientist stories in terms of a profound cultural shift from traditional confidence in bourgeois authority to a postmodern spirit in which people doubt the authenticity of all institutions, and even of themselves.

I agree that there is much truth and merit in this approach, which ties cultural images of science to social realities. But there is a second explanation of this change, that is, that artistic processes shape the mad scientists who personify science and that these processes operate more or less independently of real science and real scientists. I suggest that the artistic processes of text-to-film adaptation and subsequent serialization account for much of the long-term change in mad scientist stories. If these external forces also shape audiences' perceptions of scientists, then they, too, are worth understanding.

Accordingly, I challenge the static view that mad scientist stories are substantively timeless, and I identify a pattern of changes, such that the mad scientists of fiction and film have become increasingly depraved since Shelley's ([1818] 1984) *Frankenstein*, the first mad scientist narrative, appeared early in the nineteenth century. I argue that those changes happened largely because of artistic reasons apart from the glories or the crimes of real scientists, whether Einstein or Mengele.

To rehearse my argument, I consider the Faust reflex, by which I mean the simple habit of calling each mad scientist narrative another version of the Faust story. Basalla (1976, 266) writes that "generally, the scientist in popular culture is seen as a Faust-like figure." Brustein (1958, 289) says that "in Mary Shelley's book . . . Frankenstein is a latter-day Faustus." According to Weart (1988, 144), fictional mad scientists are based on the stereotypes of Mesmer and Faust. Regarding Hollywood's mad scientist films of the 1920s, "variations on the Faust legend were common," in the analysis of Baxter (1970, 40). Philmus (1970, 82-100) says that the legend of Faust has generated the stories of Frankenstein, Jekyll, the Invisible Man, and others. To Levine (1979, 4, 9), *Frankenstein* "echoes" Faust.

Admittedly, many novelists and scriptwriters draw inspiration from this source. But the Faust story is a dynamic story, changing its moral lessons from generation to generation over five centuries. The historical person of

Faust was mentioned in various documents between 1507 and about 1540. He was educated and well traveled, known as an astrologer, possibly also a hypnotist and alchemist, and had a reputation for being an obnoxious braggart, a mountebank, and a sexual pervert (Smeed 1975; Palmer and More 1965). Between 1550 and 1587, legends about him circulated in Germany. In 1587 a German printer, Johann Spies, published a volume now known as the *Spies Faustbuch* that was a clear antirationalist reaction against the intellectual spirit of humanism (Palmer and More 1965, 3; Bates 1969, v): It condemned Faust for having challenged God-given limits to knowledge, and it alleged that intellectual curiosity is dangerous (Smeed 1975, 14, 17).

In Christopher Marlowe's play, *The Tragicall Historie of Doctor Faustus* (first performed in 1594), Faust's intellectual curiosity ruined him, but it also ennobled him. Similarly, G. E. Lessing and other eighteenth-century interpreters made Faust a hero of human rationalism and a martyr to its spirit. According to their view, "He was a wholehearted and devoted seeker after Truth who was misunderstood and turned into a bogeyman by the ignorant and the prejudiced" (Smeed 1975, 2).

Yet another turning point was Goethe's 1832 version of Faust. Here the appreciation of knowledge for the sake of knowledge was discarded and replaced by a quest for experience, that is, knowledge rooted in action, and which has consequences for action (Smeed 1975, 20-21). The interaction of knowledge and action is good, suggested Goethe, but only to the point that it does not transcend the metaphysical limits to one's spiritual being. This is a delicate point, better rendered by Heller (1969) than by me:

> Man aspiring to a freedom of the mind fatally beyond the grasp of his "concrete imagination," seeking power over life through actions that overreach the reaches of his soul, acquiring a virtuosity inappropriately superior to his "virtue" — this was Goethe's idea of *hubris*. . . . Throughout the adventures of his Faust, Goethe's imagination is fascinated, enthralled, and terrified by the spectacle of man's mind rising above the reality of his being and destroying it in such dark transcendence. (P. 191)

So, while many authors of mad scientist stories draw inspiration from this tradition, some may draw from the antirationalist Faust of Spies, others from the conflicted Faust of Marlowe, different ones from the heroic Faust of Lessing, still others from the man of action, that is, the Faust of Goethe, while yet more authors employ still more versions and combinations of versions of Faust. I conclude that the story of Herr Doktor Faust is anything but a stable anchor, whether called a genre, an archetype, a stereotype, or whatever, for holding tales of mad scientists to an unchanging plan. If the story of Faust is the model for the moral character of many mad scientists, it would hardly be surprising to find that mad scientist stories change and vary.

The Portrayal of Moral Character

To trace changes in moral character, it is necessary to specify some features of personality that represent morality, so that one can judge an individual as good or evil, according to which features that person possesses or lacks. One can say that fictional mad scientists become more moral, or less, if they enhance their good features, or diminish them. I use the following three features to describe character and trace its changing condition:

a. *Intention.* Anglo-American law and Judeo-Christian morality both recognize that intention is a major consideration in judging crime and sin. Some mad scientists are motivated by vengeance or pride (Dr. Moreau, Dr. No, Dr. Caligari, and Dr. Phibes, to name but four), while Dr. Jekyll and Dr. Delambre (title character of *The Fly*) start from altruistic motives. Others experience changes of intentions, as in the case of Dr. Frankenstein.

b. *Remorse, reflection, and responsibility.* Some mad scientists regret having inflicted violence on the world and are troubled by what they have done. They accept responsibility for their deeds by attempting to reverse or mitigate the results. Others are, let us say, less admirable.

c. *Level of maturity, that is, naïveté versus experience.* Some of these characters are old enough and experienced enough to know better than to unleash evil. Others, including the kind we call a sorcerer's apprentice, do so because of youthful folly. If the latter ones change, then they become more mature, for example, the Frankenstein of Shelley's novel.

These features are common moral standards. Because they are so common and so real, fictional mad scientists are more believable when their personalities are constructed from some combination of the three. We can say that every fictional mad scientist possesses at least one evil aspect from among those standards. Some, however, have benevolent or admirable personality traits generously mixed in with their bad aspects and so have rich moral character; but for other mad scientists, the good traits are either neglected or greatly abbreviated, so that these persons are relatively depraved. This is not a Manichaean division between good guys and bad guys. It is a more sensitive distinction between bad guys whose character is tempered by good traits that are well represented and bad guys whose good traits are negligible. And so the critical question is, In what circumstances are mad scientists depicted with their good traits well represented, and when are those traits negligible?

The answer is not opaque. One of the first principles of comparing literature with film is that literature commonly describes and develops intentions, remorse, reflections, and maturity, plus most other states of mind, much more thoroughly than does film. A text, whether fiction or nonfiction, can use an unlimited vocabulary of words and combinations of words to

depict interior feelings. The intangible qualities of moral character — for example, intention, remorse, reflection, and maturity — are not more difficult to depict than concrete images. In fact a reader ordinarily expects a work of fiction to describe the characters' feelings quite thoroughly. But the means of expression in the medium of film are much more limited. Except for its dialogue, music, and sound effects, a film communicates by presenting concrete visual scenes. Emotions and the intangible qualities of moral character must be translated into visual idioms, for example, by showing gestures, facial expressions, and action (Prawer 1980, 85). The filmmaker must externalize the internal, so to speak. In the words of Murray (1972),

> Because he employs a linguistic medium, the novelist is uniquely privileged to explore thoughts and feelings, to discriminate among various sensations, to show the complex interpenetration of past and present, and to handle large abstractions. While some recent film-makers have sought to compete with literature by projecting involved subjective relationships, the cinema possesses a relative weakness in this area and vies with the novel at its peril. (P. 109)

Three structural differences between fiction and film are especially profound: point of view, manipulation of time, and pace of communication. Nine out of ten films assume "an omniscient and impersonal point of view, regardless of the viewpoint of the novel," says Lester Asheim (cited in Murray 1972, 292). Successful experiments in multiple or subjective point of view are rare. Even the greatest such film, Akira Kurosawa's *Rashomon,* must place its four subjective testimonies within an objective frame of reference defined by the time and place of the bandit's trial. In contrast, it is perfectly common for fiction to manipulate point of view with subjunctive moods, conditional tenses, and multiple narrators. A good example is Stevenson's ([1886] 1984) *The Strange Case of Dr. Jekyll and Mr. Hyde,* wherein the reader moves from the point of view of a gentleman, to that of Jekyll's lawyer, to Jekyll's medical colleague, and finally to that of Henry Jekyll himself, thus proceeding from the objective observations of the most distant person to the inner feelings of the most anguished one. Film may be capable of doing the same, but the result would be very confusing to the viewer, so almost all cinematic versions of *Jekyll and Hyde* simplify the story's point of view by rearranging the narrative into a simple linear sequence.

Time receives similar treatment. In film it is almost always condensed to achieve unity of action (Murray 1972, 293). Although film can use "dissolves" and other transitions to bracket scenes of the past, such as flashbacks and dreams, those scenes are then depicted with the same cinematic techniques as the present itself (Murray 1972, 111). In other words, film lacks a grammar of the past tense, which every written language has (Prawer 1980, 85). Consider how Shelley's ([1818] 1984) *Frankenstein* tells the story of the

creature as a series of flashbacks within the story of the scientist, which is a series of flashbacks within the story of Walton the narrator, which is a series of flashbacks. A Frankenstein film that faithfully replicated this narrative structure would soon have quite a bewildered audience. Another constraint on time, as depicted in film, is the fact that a feature film must be scheduled within standard units of time: If the filmmaker wants large audiences to see it, then it must not run longer than about two hours.

Then there is pace. With a text, the reader can pause — between chapters, between paragraphs, wherever — to think about the personalities of the characters. Savoring the text is one of the pleasures of reading, so it is well worth the author's effort to give his or her characters some rich personalities. But with film, the viewer has no such control over pace unless he or she is using a videocassette recorder. The viewer receives a film at its own pace, with no opportunity to pause, let alone to savor the work. There is much less reason to dwell on the richness of personalities, and much more reason to emphasize action, which keeps the plot moving.

And so, said Ingmar Bergman, "the irrational dimension which is the heart of a literary work is often untranslatable" from text to film (Murray 1972, 294). Film depicts much about the characters' experiences but little about their minds (cited in Murray 1972, 112).

I trust that the implications are obvious. The mad scientists who come to life on the printed page are relatively rich characters, while those on the screen are generally more shallow. What this means historically is that the audiences that met mad scientists through the texts of Gothic horror often found some personality traits to appreciate in them, but the audiences that encounter them in the cinema see much more simplistic personifications of the evil of science, even if they bear the same names as their literary referents, that is, Frankenstein, Jekyll, Moreau, and so on.

Another feature of cinematic characterization is this: In some films, the mad scientist has to be especially depraved, so that the character of the hero is defined, by default, in opposition to the amorality of the scientist. In the 1989 production of *Batman*, the title character is morally ambiguous, enigmatic, and slightly sadistic. He dwells in a neo-Weimar cityscape of hypocrisy, confusion, decay, and relativism. Until very late in the story, it is unclear why Batman is motivated to wage a private war against crime; even the police wonder which side he is on. It is not until a master criminal-scientist uses his scientific knowledge to make a terrible toxin that the righteous dimensions of Batman's crusade become clear. Batman is a hero, not because he has a hero's personality, but because he is the antidote to the criminal-scientist, whose depravity is the landmark against which the hero is defined.

Subsequent to the process of text-to-film adaptation, there is a second process that also changes the moral character of mad scientists, making them even worse. This is the process of sequels: the *Return of . . . , Son of . . .* , and *Revenge of . . .* films. It is important to note that the featured attraction in such stories is not the title character of the mad scientist but, rather, the violent monster, the diabolical invention, or the special visual effects, such as miniaturization or invisibility. The mad scientist or a successor must appear in the film to animate the real attraction but this character's role is of little importance thereafter. The mad scientists become more or less interchangeable with their successors. As such they are ciphers who neither require nor possess much moral character. Thus the process of serialization further debases mad scientists by making them more shallow. It is in this process, rather than in the adaptation, that a given mad scientist, or a family of mad scientists, becomes a simple stereotype with no moral dimension (Reed 1984, 108).

To illustrate this, there is the series of Invisible Man films. The first, in 1933, was *The Invisible Man*, adapted from the H. G. Wells novel of the same title. It told the story of Dr. Jack Griffin, who discovered "monocaine," a drug that made his body invisible but also made him insane. "To make the world grovel at [his] feet" (Glut 1978, 138), he planned to intimidate humanity by committing murders while invisible. A mad scientist indeed!

In 1940 the Griffin family revisited the invisibility business in *The Return of the Invisible Man*, with Dr. Frank Griffin replacing his brother Jack. Two years later, another Dr. Griffin, grandson of the original Dr. Jack Griffin, activated the invisibility effect in *Invisible Agent.* Two years after that, Robert Griffin was the title character of *The Revenge of the Invisible Man* (Glut 1978, 146). The Griffin name had become a cipher for the science of invisibility by 1944. Finally, the scientist was Dr. Philip Gray in *Abbott and Costello Meet the Invisible Man* in 1950 (Glut 1978, 148), and in *The Invisible Man* of 1975, he was Dr. Daniel Weston (Glut 1978, 157). Invisibility was the star attraction, and it had a long career, but the career of Dr. Jack Griffin was short, as was that of each of his successor scientists.

To restate my thesis: The moral character of mad scientists, as portrayed in fiction and film, has been changing, both in the process of text-to-film adaptation and in the process of making film sequels. The pattern is that a given mad scientist becomes madder as the adaptation process sheds much of the intangible quality of moral character from the text, and he becomes more shallow as the sequel process reduces the mad scientist to a succession of ciphers who play perfunctory roles. Ironically, this kind of moral deterioration cannot be attributed to a sustained intellectual critique of science, even though each mad scientist story is an individual critique of scientists or scientific knowledge. Rather, the two processes that tie the various stories

together in a pattern of moral deterioration are external to the institution of science. Their source is the art of making films.

At this point I subject my thesis to a deeper, more sustained treatment by walking the two greatest of mad scientists through it. Let us consider the respective moral characters of Frankenstein and Jekyll.

The Changing Moral Character of Frankenstein

The golem was a creature of artificial life from medieval Jewish folklore (Goldsmith 1981, 19-20). In the earlier golem stories, learned rabbis used their knowledge to shape humanoid beings from clay, then used their spiritual wisdom to invest them with life for a righteous purpose. In the most famous golem story, Rabbi Loew of Prague (a real person who lived in the seventeenth century) made a golem to protect the Jewish ghetto from anti-Semitic violence. As stories of artificial life, the golem tales inevitably addressed the theme of "man's conceit in competing with God" (Goldsmith 1981, 16), which was resolved with the rabbi's voluntarily returning the golem to inanimate clay when its mission was accomplished, thereby recognizing the limits of the rabbi's authority over life.

> The important point here, then, is that these miracle-working Jews, like Loew, always used their powers wisely; they realized that moral responsibility begins, not ends, with creation, and they destroyed their creatures when they threatened to roam beyond their makers' control. (Friedman 1984, 132)

In the later golem stories, from the seventeenth and eighteenth centuries, impious rabbis created golems to perform menial tasks like hewing wood and hauling water. Subsequently their golems turned violent, forcing their makers to end their lives unhappily (Goldsmith 1981, 16-17; Friedman 1984, 131). In this version, the rabbi's knowledge of artificial life is inherently dangerous.

According to Shelley ([1818] 1984), her novel, *Frankenstein; or, The Modern Prometheus*, began with discussions about Dr. Erasmus Darwin's scientific experiments and then with a dream in which "the pale student of the unhallowed arts . . . put together . . . the hideous phantasm of a man" (pp. xi-xii). Shelley's novel was a secular elaboration of the legacy of the golem. It sprang from the latter phase, according to which knowledge is inherently dangerous.

Shelley's Victor Frankenstein was a young man with much intellectual curiosity but little moral guidance. As a self-educated youth, he read Paracelsus and other alchemists, thereby leading himself into fantasies of "the elixir of life":

> The raising of ghosts or devils was a promise liberally accorded by my favorite authors, the fulfilment of which I most eagerly sought; . . . for a time I was occupied by exploding systems, mingling, like an unadept, a thousand contradictory theories, and floundering desperately in a very slough of multifarious knowledge, guided by an ardent imagination and childish reasoning. (Shelley [1818] 1984, 33)

Rationalist science alienated him because it was too mundane, compared with the glorious promises of the medievalists. When he went to university to study medicine, an intolerant science professor angrily denounced his alchemical beliefs and contemptuously attempted to purge them by forcing strong doses of modern rationalist science on young Victor. "I was," he said, "required to exchange chimeras of boundless grandeur for realities of little worth" (Shelley [1818] 1984, 40).

A second professor solved the relationship with a benign platitude: As a student, Victor should apply himself to modern rationalist science but should also honor the medievalists as noble pioneers. From this came the worst possible result. Victor Frankenstein acquired the medical skills of modern science, but he retained the values of those who impiously dabbled with the mystery of life. He made a creature and brought it to life.

The Frankenstein who made his own creature was a misguided medical student, a callow youth, inexperienced in the ways of the world, let alone in the ways of great evil. Although his deed was reprehensible, he had neither the mind nor the maturity of a master criminal.

Shocked by what he had done, he did the most immature thing imaginable (cf. Levine 1979, 10; Lawler 1988, 255): He abandoned his creature, leaving it to roam through Bavaria and Switzerland. The creature acquired more maturity than young Frankenstein himself. It developed an existential personality based on the anguish of being rejected by its human creator, plus an intellectual personality that it got from reading Milton and Plutarch. Shortly after it caused two deaths, Frankenstein met his creature face to face and, in a long conversation, realized that he must take responsibility for his creation. This was the first great change in the moral character of the scientist. He and the creature agreed that Frankenstein would solve their joint dilemma by making a female companion for the creature, who would then remove himself and his bride from human civilization.

Their joint dilemma: From that point on, Shelley's novel assumed the classic tone of the German *doppelgänger* genre. The creature became an external reflection, an existential mirror (Levine 1979, 14), which forced Victor Frankenstein to consider his own thoughts and actions.

Frankenstein began the work of assembling the creature's bride, then realized the likely consequences of his science. Whereas he formerly hoped

that two such creatures would solve the anguish and violence of one, he later realized that the two, male and female, might beget a terrible race of violent monsters. He destroyed the human parts he had collected to make the bride. That triggered the creature to more violence, killing Frankenstein's best friend and, in a macabre exchange, Frankenstein's bride. This at last brought Frankenstein to accept his ultimate responsibility: He must destroy the being he had made, regardless of the consequences, even to himself.

Shelley's novel was a progression from foolish irresponsibility, through increasing responsibility for one's actions, to ultimate responsibility. The scientist painfully "realized that moral responsibility begins, not ends, with creation," as Friedman (1984, 132) says of the golem makers. And although the book was generously laced with evil and violence, their ultimate source was neither the creature nor the scientist. Rather, scientific knowledge, which was both inherently dangerous and powerfully seductive, generated the crimes that punctuated this tale. As he began his story, the scientist cautioned the narrator to "learn from me, if not by my precepts, at least by my example, how dangerous is the acquirement of knowledge" (Shelley [1818] 1984, 47).

Later, in his deathbed testament, he echoed that same feeling: "Seek happiness in tranquility and avoid ambition, even if it be only the apparently innocent one of distinguishing yourself in science and discoveries" (Shelley [1818] 1984, 240).

Five years after the novel's 1818 appearance, an adaptation brought it to the London stage, with the title *Presumption; or, the Fate of Frankenstein*. The shift from the text to the visual medium gave greater prominence to the part of the creature, who stole the show with its sensational appearance and violent actions (Nitchie 1953, 224) and who was *not* humanized through existential anguish or philosophical education (LaValley 1979, 249). This and later stage versions reduced the narrative to the creation, the bridal scene, and the creature's destruction: "much of the abstract and philosophical language had to go, as well as the probing into the psyches of Victor and the Monster" (LaValley 1979, 247). The play's judgment of Frankenstein's moral character was a simplistic denunciation of intellectual curiosity, much like that of the *Spies Faustbuch*, as indicated by the title *Presumption* and this explanation from the playbill: "The striking moral exhibited in this story is the fatal consequence of that presumption which attempts to penetrate, beyond prescribed depths, into the mysteries of nature" (Nitchie 1953, 221).

Three silent films brought Frankenstein to the cinema early in the twentieth century. One of them, the Edison Company's *Frankenstein*, included the *doppelgänger* theme by showing Frankenstein looking into a mirror and seeing his creature (Huss and Ross 1972). Next, when James Whale created

a new *Frankenstein*, in 1931, he radically changed the narrative, the characters, and their moral message. Universal Studios commissioned Whale to put the Shelley novel on the screen, via a screenplay by Garrett Fort and Francis Faragoh, from an adaptation by John Balderston of a 1927 play by Peggy Webling, plus an independent synopsis by Robert Florey (Mank 1981, 13). There were so many intermediate concepts between the novel and the film that fidelity of adaptation was compromised much more than usual. Frankenstein became *Dr.* Frankenstein, unlike Shelley's naive young medical student. From Robert Weine's *The Cabinet of Dr. Caligari* and Paul Wegener's *The Golem* came details of the physical appearance of the creature; from Fritz Lang's *Metropolis* came inspiration for depicting the creation scene as an electrical experiment, rather than a chemical process (Mank 1981, 17; LaValley 1979, 259). Frankenstein's ungodly science was described via dialogue: His theories "were becoming dangerous"; he demanded human cadavers, no matter where or how; and "Herr Frankenstein was interested only in human life — first to destroy it, then recreate it. There you have his mad dream!" (Mank 1981, 3).

Dr. Frankenstein was arrogant, reckless, and hysterical, preventing any bond of empathy between the audience and himself. It was not he, but a different scientist, Professor Waldman, who made the decision to destroy the creature and who undertook the task. (While Waldman did that, Frankenstein went home to prepare for his wedding!) Thus was Frankenstein removed from responsibility for his own acts. The creature-as-*doppelgänger*, which in the novel had nurtured the scientist's sense of responsibility, was absent from the film. The creature was slightly humanized, for example, in the flower game with the little girl Maria, but mostly its role was to keep the film exciting by supplying violence upon violence (cf. LaValley 1979, 259). So, too, the creature's violence was explained in terms of the blunder of Fritz the assistant, who brought the brain of a criminal ("Dysfunctio Cerebri," said the label) to be inserted into the creature's head, unknown to Frankenstein himself.

Dr. Frankenstein's isolation from civilization and its moral influence was extreme. "At night the winds howl in the mountains," he wrote. "There is no one here. Prying eyes can't peer into my secret" (Mank 1981, 1).

James Whale's *Frankenstein* represented all the best and all the worst of horror films. Suspense, emotion, violence, and counterviolence combined to make a thrilling story, yet they also inflicted their inevitable damage on the moral character of the mad scientist. Whereas in the novel Frankenstein's intentions were somewhat naive, in the film they were purely arrogant, for example, to humble the scientists who had denounced his work. As to

remorse and responsibility, Dr. Frankenstein delegated them to Waldman. Much of the novel concerned Frankenstein's interior turmoil, but the fast-paced film allowed him no time to reflect on himself. The scientist's level of maturity was especially changed, from Victor Frankenstein's college-boy folly to Dr. Henry Frankenstein's careful planning based on much scientific experience. In all three features of moral character, the mad scientist who represented the evil of science was distinctly less empathetic and more dangerous in the film than in the novel, so that this story became a more severe critique of science than it had been previously.

Then it got worse in the sequels. *The Bride of Frankenstein*, which Whale made for Universal in 1935, first presented Dr. Henry Frankenstein as a remorseful penitent: "I have been cursed for delving into the mysteries of Life — perhaps Death *is* sacred, and I have profaned it" (Mank 1981, 46).

Very soon, however, he subordinated himself to Dr. Septimus Pretorius, his evil mentor from the medical college. Pretorius controlled Henry Frankenstein by controlling the monster, to whom he promised a monster-wife, and by kidnapping Frankenstein's wife, Elizabeth. This ultradiabolical scientist who robbed graves and, like Paracelsus himself, grew homunculi in bell jars, was more frightening than Frankenstein.

Dr. Wolf von Frankenstein, title character of *Son of Frankenstein* (released in 1939 by Universal) reanimated the creature. Foolishly he ignored the warnings of the simple peasants and underestimated the creature's violence. Throughout the film the creature was controlled, not by this Dr. Frankenstein, but by Ygor, the crippled grave robber. In effect, this scientist was a spectator to the moral conflicts of his scientific research.

In *The Ghost of Frankenstein*, Dr. Ludwig Frankenstein, brother of Wolf, son of Henry, experimented on the creature. His brash intentions, however, were subverted by Dr. Theodor Bohmer, an evil mentor much like Dr. Septimus Pretorius. Bohmer tricked Dr. Frankenstein into putting Ygor's brain into the creature, with the result that, in the words of Ludwig, "I've created a hundred times the Monster that my father made!" (Mank 1981, 93).

Subsequent monster-resuscitators in the Universal series were Dr. Frank Mannerling, assisted by Elsa Frankenstein (daughter of Ludwig, grand-daughter of Henry) in *Frankenstein Meets the Wolfman*; Dr. Gustav Niemann (lunatic and grave robber) in *House of Frankenstein*; Dr. Frantz Edelmann in *House of Dracula*; and Dr. Sandra Mornay in *Abbott and Costello Meet Frankenstein*. All were either evil from the beginning, or they quickly sank into depravity when scientific glory seduced them.

Of the many Frankenstein movies by other studios, few have been kind to the namesake scientist. Two converted him into an ugly sexual pervert: In

Andy Warhol's Frankenstein the monster-making scientist enjoyed copulating with a corpse, and in *The Rocky Horror Picture Show* the scientist's purpose for making a creature was to have sex with it.

Ironically, this tradition also includes a short series of films that treat the moral character of Frankenstein as a personality worth exploring in its own right, instead of being a simple symbol of evil. This is the Hammer group directed by Terence Fisher and starring Peter Cushing. *The Curse of Frankenstein*, released in 1957, shifted the center of interest from the monster back to the scientist (Pirie 1973, 72; see also, Glut 1973, 189, 195). He was indeed blasphemously unethical: a grave robber, a murderer, and a maker of artificial life, but at the same time, "a magnificently arrogant aristocratic rebel, in the direct Byron tradition" (Pirie 1973, 70). The film was a series of his passages between Victorian morality and scientific amorality. In each he was comfortable, but in the transitions he was pained.

The following year his dual personality received even closer attention, with no distractions from any monsters, in *The Revenge of Frankenstein*. Dr. Frankenstein was a most compassionate and dedicated surgeon. Then, he used his position to amputate recklessly and steal the separated parts; his motive was to heal a pitiful hunchback by making a new body for him. Which was the real character of Frankenstein, and how should we assess it: the hypocritical but much-appreciated surgeon? or the much-reviled yet altruistic mad scientist? Fisher forced this question on his audiences but permitted no easy answers. Said Pirie (1973, 73, 74),

> The sadistic and noble elements in his character thus exist side by side. . . . Frankenstein's complex and ambiguous character became a host for two distinct opposing forces, the one of generosity, self-sacrificing and exploration, the other of greed, cruelty and blasphemy.

Next of the Fisher-Cushing films was *Frankenstein Created Woman*. Again the namesake scientist did a most ungodly thing, but for the goodliest of reasons. To retrieve some goodness from the tragic deaths of the lovers Christina and Hans, Dr. Frankenstein transplanted the soul of Hans into the body of Christina, thus uniting them in artificial life, cheating the afterlife, and surgically creating transsexuality.

Last in this series was *Frankenstein Must Be Destroyed*. For his repertoire of evil habits, there were murder, kidnapping, and blackmail. For his good work — embedded in evil habits — he saved the brain of a fellow scientist by transplanting it into another person's body. Unfortunately the old brain hated its new existence. Should Frankenstein have done this?

> The audience is again being forced to make a complex moral judgment about Frankenstein's character and actions. He has performed a grotesque operation

on his colleague and yet we know that he has saved his life and his sanity. (Pirie 1973, 79)

In those four films, Dr. Frankenstein had much evil in him, but his evil was tempered by uncertain quantities of goodness. Thus did he intrigue his viewers, perhaps also won their sympathy (cf. LaValley 1979, 277) and, let us hope, left them thinking about how each person balances the good and evil within. If we refer these works to the Faust tradition, then the mad scientist of Fisher and Cushing is closest to the Marlowe Faust, the tragic figure whose life is a painful tension between sin and virtue.

In the more typical films of the Frankenstein legend, the personality of the scientist was greatly abbreviated. Instead of asking questions about character, most such films presented the scientist as a simplistic symbol of the evil of science. This was especially acute in the later films, wherein the monster needed only a cipher of a scientist to ignite its violence. The long sequence from the medieval to the modern includes the golems guided by righteousness; the golems governed by their own violence; the Shelley novel that secularized the latter golem; the stage adaptations that compressed the narrative and highlighted the creature's violence; the silent films; the great *Frankenstein* of 1931, which worsened all three moral characteristics of the scientist; the Universal sequels, that undid him even more; the anomalous Hammer series; and miscellaneous other interpretations.

Moral and Sexual Interpretations of Dr. Henry Jekyll

Robert Louis Stevenson was deeply worried about the dual nature of man since long before he wrote *The Strange Case of Dr. Jekyll and Mr. Hyde* in 1886. During his youth in Scotland, the forces of Calvinist and Victorian morality persuaded him that beneath the surface of goodness and propriety there exists a realm of chaos and violence, so that one's life is a constant conflict between the two levels. Stevenson explored this problem in his play *Deacon Brodie* and his novel *Markheim* (Glut 1978, 69). *Jekyll and Hyde*, the masterpiece in which he perfected his views on this struggle, was his third work on the subject.

According to the plot of this novella, a respectable scientist released the evil personality within himself. At first he enjoyed the pleasures that the dark self brought, but then he recognized the consequences, regretted his experiments, and attempted to suppress the evil character. He struggled to regain his own good worth, but ultimately his experiment led to his own destruction. It is critically important that he recovered his moral bearings and that he had

a reservoir of goodness that gave him the strength to struggle heroically against Hyde.

Stevenson depicted Jekyll's initial goodness in terms of altruistic intent. If the good and the evil sides of the human personality

> could but be housed in separate identities, life would be relieved of all that was unbearable; the unjust might go his way, delivered from the aspirations and remorse of his more upright twin; and the just could walk steadfastly and securely on his upward path, doing the good things in which he found his pleasure, and no longer exposed to disgrace and penitence by the hands of this extraneous evil. It was the curse of mankind that these incongruous faggots were thus bound together. . . . How, then, were they dissociated? (Stevenson [1886] 1984, 678)

When he succeeded in splitting the two selves, he fell into depravity by indulging the Hyde personality. "I knew myself, at the first breath of this new life, to be more wicked, tenfold more wicked, sold as a slave to my original evil" (Stevenson [1886] 1984, 679). However, he became profoundly remorseful after Hyde wantonly murdered a man. According to the author,

> The pangs of transformation had not done tearing him, before Henry Jekyll, with streaming tears of gratitude and remorse, had fallen upon his knees and lifted his clasped hands to God. . . . As the acuteness of this remorse began to die away, it was succeeded by a sense of joy. The problem in my conduct was solved. Hyde was henceforth impossible; whether I would or not, I was now confined to the better part of my existence; and, oh, how I rejoiced to think it! With what willing humility I embraced anew the restrictions of natural life. (Stevenson [1886] 1984, 684)

From that point on, Jekyll struggled mightily to suppress the personality of Hyde. Unfortunately, the cumulative effects of the transforming drug caused Hyde to arise again despite Jekyll's remorse. As the power of Hyde increased, so did the moral sensitivity of Jekyll, but eventually the Hyde personality overcame Jekyll.

When this story was adapted for the stage in 1887, a romantic interest was added, that is, a girlfriend for Jekyll (Glut 1978, 75; Wilstach 1983, 159). Now Stevenson's duality-of-man theme could take the tangible form of a contrast between the Victorian morality of Jekyll's chaste behavior and the danger of Hyde's lust. Stevenson objected to this sexual interpretation (Prawer 1980, 106; Saposnik 1983, 115), but it nevertheless became fixed into the various dramatic productions. Between 1908 and 1920, there were about a dozen silent film versions. The 1912 film by the Thanhauser company divided the romantic interest into two women, with Jekyll torn between them (Prawer 1980, 86). The 1920 version, starring John Barrymore, continued this sexual interpretation by emphasizing the difference between Millicent,

the proper lady, and Gina, the dance-hall prostitute who became Hyde's mistress. Says Clarens (1967), "The introduction of the latter [i.e., Gina] . . . serves to expand the character of Hyde from the child-beating murderer of the original into a more sexually complex personality" (p. 41).

Not surprisingly, sex made things different. At first the romantic relations gave more substance to the duality of man in the contrast between chastity and lust. But later they subverted this theme when opinions on sexual ethics changed to include the view that Jekyll's sexuality should not have been repressed in the first place and that Hyde's sexuality was an understandable solution to Jekyll's condition.

The next major work, Rouben Mamoulian's 1932 *Dr. Jekyll and Mr. Hyde*, starring Fredric March, was made at a time when the American public was newly fascinated by Freud's theories on sexuality and hysteria. Mamoulian's film "emphasize[d] the underlying sexual motives that came with Freud's work to dominate the dissociative explanation for multiple personality" (Fleming and Manvell 1985, 64). Never mind that those theories were often misunderstood. The point is that for much of the public, a wide range of human behavior could be clinically explained in terms of sexual tension, uncomplicated by moral judgment.

In this film Dr. Henry Jekyll had a fiancee named Muriel Carew. Their prim-and-proper engagement constituted love without sex; when Jekyll asked to hasten the wedding date, Muriel's puritanical father refused. Jekyll then encountered an attractive prostitute named Ivy Pearson, and he used his transforming drug to become Hyde so that he could have a lusty affair with Ivy. Whereas the life of Jekyll, particularly his relations with Muriel, consti-tuted a world of propriety, discipline, and sexual repression, the life of Hyde was a hearty escape from those unhappy bonds (Prawer 1980, 92-93; Clarens 1967, 83). By this reasoning, the audience could hardly blame Jekyll for becoming Hyde.

Beginning from his first meeting with Ivy, Jekyll was a prisoner of his own sexuality. The two murders he committed as Hyde were entwined in his lust for Ivy. Before that, Muriel was to blame for his sexual frustration. In other words, Dr. Jekyll was not responsible for his own actions, according to the popular interpretation of Freudian theory that guided this film. Thus was eliminated much of the "moral argument and explicit comment" of Stevenson's narrative (Prawer 1980, 105): not that Jekyll became more evil in the film but, rather, that his moral character mattered much less in the nonjudgmental version of pop Freudianism.

Although there were "son of Dr. Jekyll" and "daughter of Dr. Jekyll" sequels, most of the dozens of remakes preserved the person of the original doctor but then interpreted his personality in new ways. In *The Two Faces of*

Dr. Jekyll, directed by Terence Fisher for Hammer in 1961, the doctor was a dull married man whose wife was having an affair. When Jekyll turned himself into Hyde, he consorted with a dance-hall prostitute and also discovered his wife's infidelity. Subsequently he used the person of Hyde to murder the wife's lover and to rape his own wife (Glut 1978, 103). This sequence of events entirely reversed the Jekyll-Hyde relationship as posited by Stevenson. In the original, Hyde eventually controlled the relationship and Jekyll succumbed, but in the 1961 film, Jekyll controlled it, and he manipulated Hyde, both to enjoy his own sexuality and to punish his wife's.

The ultimate sexual interpretation of Jekyll and Hyde also came from Hammer. This was *Dr. Jekyll and Sister Hyde*, directed by Roy Ward Baker in 1971. The scientist's potion included sex hormones, so that Jekyll transformed himself into a woman and pretended to be his own sister. With his transsexuality-in-a-jar, he was able to expand his sex life to include both a man's and a woman's experiences.

There have also been numerous derivative works that reinterpreted Jekyll's story under other names. One of the most sophisticated was *Altered States*, in which a Harvard psychologist does reckless personality-transforming experiments on himself with hallucinogenic mental exercises. His counterpart to Hyde is a violent australopithecine, which implies that ancestral killer-apes still live within us and that we can regress to that ugly condition if we try hard enough. Also there is a senior colleague who warns the psychologist to cease his unholy research and who spouts such wisdom as, "This is a phenomenon. We must study it phenomenologically!" Predictably, the psychologist rejects the moral cautions. Also predictably, the scientific research leads to uncontrolled violence. Whereas all the scientific authority at Harvard fails to restrain the protagonist in his Hyde-australopithecine state, it is the love of a good woman — the psychologist's estranged wife — that redeems him from his subhuman mischief.

There is one more point of reference to consider here: In David Wickes's *Jekyll and Hyde*, broadcast on American television in January 1990, Jekyll was a widower who became involved with his married sister-in-law. In the form of Jekyll he rejected her advances, but in the form of Hyde he brutally raped her. Yet when he explained the Jekyll-and-Hyde connection to her, she forgave his actions. It seems to me that this was the most extreme equivocation of sexual ethics in the entire Jekyll-and-Hyde tradition, for it suggested that a brutal rape was excusable on the grounds that the rapist and the victim really loved each other.

Whereas Stevenson ([1886] 1984) had described the duality of man in terms of a very clear struggle between Jekyll's moral character and Hyde's

depravity, the sexual interpretation of Jekyll and Hyde gradually subverted that duality and erased its clarity. When Hyde became the outlet for Jekyll's sexual needs, he was no longer Jekyll's moral opposite. Rather, he became an extension of Jekyll's personality. When social standards of sexual behavior became more tolerant over the last hundred years and sexual repression lost the legitimacy it had enjoyed in the climate of Victorian values, then the transition back and forth between Jekyll and Hyde lacked the opprobrium that Stevenson intended. I do not mean that all sexual themes are dangerous. But in the case of Dr. Henry Jekyll, the sequence of highly subjective sexual interpretations subverted the firm platform of moral duality upon which Stevenson's scientist discovered his own good character and asserted it heroically. Why he struggled against Hyde and how he did so were altered. Previously he felt profound remorse for his crimes and sins, then accepted responsibility for them, attempting to contain the evil he had unleashed. More recently, his relation to Hyde has been released from moral judgment, whether favorable or not. The ethical ambiguity of Jekyll's modern sex life prevents him from acting out the exercise in moral character that Stevenson intended.

Cultural Critiques of Science

If the personality of Dr. Frankenstein symbolizes science and that personality loses the good traits it once had, if the moral character of Dr. Jekyll embodies the same thing and its heroic qualities are replaced by moral ambiguity, and if the processes of moral deterioration and simplification are common to many stories of mad scientists, then the changes in this device for damning science deserve to be noted. It matters not that these changes are unplanned and uncoordinated. It matters very much, however, that they assume a predictable pattern.

Scientists are accustomed to critiques of science by articulate well-meaning intellectuals like C. P. Snow and Lewis Mumford. But outside the circles of academic etiquette there is another kind of critique, a kind of Gothic subterranean reality, which reveals a visceral fear of science. Periodic warnings by Handlin (1972), Kennedy (McDonald 1989), Lyons ([1940] 1971), Morison (1969), Nelkin (1987), and others remind us that powerful currents of hostility surround the institution of science, and they urge us to understand those currents. Cultural commentaries by Basalla (1976), Brustein (1958), and Weart (1988) document this hostility in detail, particularly its portrayals of mad scientists. Public opinion polls by Miller (1983, 1987, 1989) reveal

that large portions of the public are sadly unable to appreciate simple scientific knowledge, while other quantitative measures by Beardslee and O'Dowd (1961), Mead and Metraux (1957), and Shallis and Hills (1975) confirm that popular distaste for scientists runs very deep.

Morison (1969) cautions us that "science can no longer be content to present itself as an activity independent of the rest of society, governed by its own rules and directed by the inner dynamics of its own processes" (p. 156). In that spirit I urge the reader to understand that Enlightenment rationalism has been shadowed by a strong antirationalism that remains powerful. Its manifestations include the feelings that science is downright dangerous to one's spiritual well-being and that science is too secular, in the sense that scientists have escaped the restraints of Judeo-Christian morality.

Stories of mad scientists, whether textual or cinematic, constitute an extremely effective antirationalist critique of science. They thrill their audiences by brewing together suspense, horror, violence, and heroism and by uniting those features under the premise that most scientists are dangerous. Untrue, perhaps; preposterous, perhaps; low-brow, perhaps. But nevertheless effective.

Inevitably, we must look into the dark heart of Gothic horror to understand how it commissions its mad scientists to tell the world that science is evil. We must recognize that this critique is becoming sharper as the mad scientists are becoming more amoral. Although the actions of a few real scientists inspire some of the personalities of fictional scientists, other features of their moral character arise from text-to-film adaptations and from sequels to those adaptations.

Technically, text-to-film adaptation is no worse for mad scientists than for cowboys in Westerns or lovers in romances. But the moral consequences are exceptional for mad scientists. There are some bad guys in the other two genres, but Westerns usually do not condemn cowboy life in general, and romances are not ordinarily dedicated to the theme that love is evil. Because mad scientist stories are indeed condemnations of rationalist science and because the personality of the scientist is the principal symbol of the evil of science, any change in that character's personality is likely to change the critique. If the scientist's moral character worsens because of adaptation or serialization, then so does the moral character of science itself, as posited by a particular narrative.

Historically, this means that the antirationalist critique of science became harsher in nineteenth-century stage adaptations than in the original prose. The critique was harsher still when films were launched from the stage adaptations, creating definitive cinematic personalities for Doctors Frankenstein,

Jekyll, Griffin *(The Invisible Man)*, Moreau, and others. After that, most of their sequels further simplified their moral character and thus further debased the moral worth of science as measured by these movies.

True, these stories are *partly* an external reflection of an internal reality of science, for indeed there are some actual monsters like Mengele and Mesmer behind Szell and Caligari and their brethren. Ideally, then, if real scientists behave better than Mengele and Mesmer and if nonscientists know they do, then this cultural critique of science ought to change for the better. But if artistic processes have made mad scientists much more depraved, then regardless of how moral or immoral scientists actually are, the moral careers of Doctors Frankenstein, Jekyll, Caligari, and others remain particularly worrisome, for their source is so independent of scientific reality. In fact, this problem is like a runaway golem. Scientists may have inspired it, but they cannot control it.

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