
The Monstrous Body of Knowledge in Mary Shelley's "Frankenstein"

Author(s): Alan Rauch

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The Monstrous Body of Knowledge in Mary Shelley's *Frankenstein*

Galvanism . . . independently of other advantages, holds out such hopes of utility in regard to . . . mankind; a work containing a full account of the late improvements which have been made in it . . . cannot fail of being acceptable to the public in general, and in particular to medical men, to whose department, in one point of view, it more essentially belongs.

Preface to Giovanni Aldini's *Improvements of Galvanism* (1803)¹

Death snatches away many blooming children, the only hopes of their doating parents

Mary Shelley, *Frankenstein* (1818)

I. Knowledge and Culture

NEW PERSPECTIVES ON *FRANKENSTEIN* ARE HARD TO COME BY. Recent scholarship has provided a wide variety of insights into the novel, making it a central text in feminist studies, the history of the novel, psychoanalytical criticism, and, of course, the impact of science on the novel.² For reasons that aren't entirely clear, however, the issue of the

1. The editor of this preface is not specified; the text is a translation of Giovanni (John) Aldini's *An Account of the Late Improvements of Galvanism with a series of Curious and Interesting Experiments Performed Before the Commissioners of the French National Institute and Repeated Lately in the Anatomical Theatres of London* (London: Cuthell and Martin, J. Murray, 1803).

2. The literature on *Frankenstein* is extensive. Several studies are worth noting here to give a sense of the breadth of the work that has been done. Ann Mellor has contributed significantly to feminist readings of the novel; her study is strongly grounded in textual analysis as well as close attention to contemporary events in science. Ellen Moers's early essay is a cornerstone of feminist thinking with respect to the novel. See also Mary Poovey's *The Proper Lady and the Woman Writer* (Chicago: U of Chicago P, 1984) and Margaret Homans' *Bearing the Word* (Chicago: U of Chicago P, 1986) for analyses of Shelley and of the novel. For psychoanalytic readings of the text see William Veeder's *Mary Shelley & Frankenstein*:

nature of knowledge—as a cultural artifact—has not been rigorously pursued. Part of the problem may well be that while Shelley³ explores Frankenstein's character, she is deliberately unspecific about the details of his scientific work. Aside from passing references to his techniques and to his instruments, there is little in the novel that actually describes Frankenstein's scientific activity, much less his scientific context. Moreover, the narrative structure of the novel renders the creature a *fait accompli*—large, apparently ugly, and periodically violent—thereby obscuring its ontological design and development.

Although the reader never learns the details of Frankenstein's science or the degree of the creature's "monstrosity," one thing is clear: the monster, whatever else it may be, represents a remarkable "body" of knowledge. The nature of that knowledge, how it was obtained, how it was implemented, and what resulted from it, are my primary concerns in this essay. These concerns will touch on a central question for readers of *Frankenstein*: To what extent was the creation of the monster transgressive, morally repugnant, or both? I will argue that the creature, as an embodiment of knowledge, is neither.⁴ Frankenstein's conception of the creature, however, is another story and what I hope to make clear is that, for Shelley, the moral integrity of the scientist has everything to do with the viability of knowledge. By ignoring the humane qualities that clearly make knowledge effective, particularly nurturing and caring, Frankenstein finds nothing admirable in what should be a remarkable creation.

Whatever else can be said about Frankenstein, there is no doubt that he possesses a remarkable amount of knowledge and, from a technical perspective at least, is enormously skillful. Moreover, Frankenstein's knowledge has no precedent; new and ambiguous, it represents both threat and promise to an uninformed public. What intensifies that double-edged

The Fate of Androgeny and Paul Sherwin's article "Frankenstein: Creation as Catastrophe" (PMLA 96.5 [1981]: 883–903). In *The Realistic Imagination* (Chicago: U of Chicago P, 1981), George Levine looks at the novel within the literary tradition of realism; "the monster and his creator," Levine argues, "reflect the culture's ambivalence about itself, the realist's difficulty with the narrative conventions of realism" (24). Levine's "The Ambiguous Heritage of Frankenstein" is in George Levine and U. C. Knoepfelmacher, eds., *The Endurance of "Frankenstein"* (Berkeley: U of California P, 1979) 3–30.

3. I will refer to Mary Shelley throughout this essay by either her full name or simply by "Shelley." Percy Shelley will be referred to by either his full name or his first name alone.

4. In her analysis of *Frankenstein*, *Metropolis*, and "The Birthmark," Ludmilla Jordanova pays close attention to the representational element of knowledge. The notion that knowledge is transgressive because it is an "affront to nature and God" explains only part of the story; knowledge can also be "profane because it is inappropriate to the human condition" (*Sexual Visions* [Madison: U of Wisconsin P, 1989] 127).

nature of knowledge—as threat and promise—is the fact that “knowledge” was a male artifact in the nineteenth-century. Shelley’s story, which revolves around the appropriation of reproduction by a man, underscores that concern. But I do not simply want to argue that *Frankenstein* is a transgressive tale about the usurpation of reproduction (from god or woman); rather it is about Frankenstein’s seemingly willful misunderstanding of the value of the knowledge he gains in the context of reproduction.⁵

II. Knowledge and Narrative

Shelley’s critique of knowledge permeates the novel as a whole. The intertwining male narratives in the novel are persuasive, but not always convincing or reliable. Shelley requires active readers who will question the coherence and the consistency of all the narratives as they develop throughout the book. The novel is thus self-consciously constructed as a kind of “knowledge text” that functions in the tradition of the “thought problem.” The compilation of male narratives is, of course, the work of two women, two manuscripts overseen by two M.S.s: Margaret Saville and her creator Mary Shelley. Together they silently preside over narratives that purport to be accurate and scientific. Their silence requires each reader, in a process that is similar to scientific discovery, to examine the narratives closely in an effort to determine their reliability.

Shelley’s narrative technique is an inclusive one, conscripting the reader into a participatory process that is diametrically opposed to Frankenstein’s isolationist and exclusionary methodology. As a representation of knowledge acquired by “M.S.,” the text itself as some readers have pointed out, has a monstrous quality. Daniel Cottom argues persuasively that there is an intrinsic monstrosity to all representational forms, from monsters to novels. “The monster,” he writes “figures as the text insofar as *Frankenstein* may be regarded as a pure work of art or of some other abstraction that conceals the labor of its origin.”⁶ But the author of this text has not only assembled a set of narratives for the reader, she has allowed the reader to become part of that structure; this revisionary approach to knowledge anticipates, as we will see, feminist critiques of science. The structure also serves as a constant reminder of Frankenstein’s fear of knowledge’s social

5. Lester Friedman’s reading of the novel as a parable concerned with the “responsibility of medical research” is helpful here (“Sporting with Life: Frankenstein and the Responsibility of Medical Research,” *Medical Heritage* 1.3 [1985]: 181–85).

6. Daniel Cottom, “‘Frankenstein’ and the Monster of Representation,” *Sub-Stance* 28 (1980): 67. Mary Poovey, in *The Proper Lady and the Woman Writer*, links the novel and the creature; both are the progeny of the “unladylike” act of writing. In the symbolic presentation of the creature, Poovey observes, we see Shelley’s attempt “to express and efface herself at the same time and thus, at least partially, to satisfy her conflicting desires for self-assertion and social acceptance” (131).

context. The solitude and seclusion that Frankenstein seems to require for his work can only result in knowledge that can have neither context nor value. For Mary Shelley this is intended to be the most frightening aspect of her novel.

Shelley, of course, makes certain that the reader understands how extensive Frankenstein's knowledge must be—of physiology, surgery, medicine, and chemistry—in order to create his creature. Shelley's concern about the integrity of Frankenstein as scientist is particularly evident in Frankenstein's description of the events surrounding the construction of a female creature. Filled with inconsistencies and contradictions, this part of the narrative draws our attention to Frankenstein's shortcomings. Equally important here is the realization that Walton, who mediates the narratives of Frankenstein and the monster (in addition to his own), cannot be relied upon for much more than simple reportage. The reader, thus embedded in the logic of the narrative, is compelled to be observant and critical in spite of the text, and "learns" a critical skill necessary both to conduct science and to critique it.⁷

Though he makes an early claim for wanting to father a "new species," Frankenstein feigns astonishment at the monster's desire for a female companion. "I was bewildered," he tells Walton, "perplexed and unable to arrange my ideas sufficiently to understand the full extent of his proposition" (140).⁸ Yet, clearly the proposition was as much a part of Frankenstein's original agenda, as it now seems to be part of the monster's. Frankenstein would have Walton believe that the idea of a female is completely new, when a female creature was fully anticipated at the very beginning of his work. Walton here, as elsewhere, fails to object to this apparently obvious inconsistency. But his passive role as auditor does more than simply allow for Frankenstein's long narrative to continue; Walton's silence, frustrating as it is, engages our own sense of logic and inference.

Shelley's embedded critique does not end here; in the ensuing pages, she underscores Frankenstein's preternatural resistance to the monster's desire for a mate or, simply, for *his* companionship. Once Frankenstein decides that he cannot complete the female creature he has made at the monster's

7. Syndy Conger, in her brief essay, "Aporia and Radical Empathy: Frankenstein (Re)Trains the Reader" (in Stephen Behrendt, ed., *Approaches to Teaching Shelley's "Frankenstein"* [New York: MLA Publications, 1990]), outlines the ways in which the reader must "determine right and wrong from experiencing, albeit vicariously, the lives of creator and creature" (66). Conger is right in pointing out that the various narratives of *Frankenstein* cannot be understood unless they are reread critically. Her own assertion, however, that Frankenstein's major flaw as a narrator is that he forgets "feelings," seems to underestimate the complexity of the text.

8. All citations will be from the first edition (1818) edited by James Rieger (Chicago: U of Chicago P, 1982), except where otherwise noted.

request, he tells Walton that he destroyed her by tearing “the thing” to pieces. Frankenstein is then able to persuade Walton and perhaps even himself that he would never have considered the project had it not been for the monster. But the monster’s position is reasonable even in Frankenstein’s account of the story.⁹ “Instead of threatening,” Frankenstein reports him as saying, “I am content to reason with you” (141). Needless to say the monster’s ominous warning that “we may not part until you have promised to comply with my requisition” (140) is a threat, and by this time, he is already responsible for the deaths of William and Justine. But the fact of the matter is that the monster, in asking for a mate, is merely trying to find a social context for his own existence. “The monster’s desire for his mate,” writes Peter Brooks, “may itself be a substitute for his real, his absolute demand, which is for recognition by his creator.”¹⁰ Brooks recognizes the monster’s essential need to be bound to Frankenstein if there is any chance for it to be situated in the world. The same, of course, ultimately holds true for Frankenstein himself who remains isolated and, in Brooks’s sense, inarticulate, without the creature. Seeing that Frankenstein has rejected his own “society,” the creature simply wants him to take responsibility for having created a social being artificially. That Frankenstein is unable to understand that he owes the creature companionship, in one way or another, is consistent with his inability to see any value in social exchange.

As a prerequisite to creating the female creature Frankenstein demands that the monster and his companion must “quit Europe forever, and every other place in the neighbourhood of man” (144). The agreement seems both fair and, in terms of Frankenstein’s enlightenment context, rational; yet only pages later Frankenstein brutally dismembers the female ostensibly on the grounds of having been “struck senseless by fiendish threats.” Frankenstein then describes his actions in a way that makes them seem a response to “malice and treachery.” But it is irrationality that most marks Frankenstein’s response in this frantic moment. When confronted with the very real problem of what to do with the knowledge that he has generated, Frankenstein is at a complete loss.

Frankenstein’s violent treatment of the female creature is both disturbing and intriguing. If Frankenstein can be read, as Elissa Marder suggests, “as

9. The notion that Frankenstein is operating within the confines of “scientific and rationalistic ambition” is advocated by Robert Wexblatt in “The Ambivalence of ‘Frankenstein’” (*Arizona Quarterly* 36 [1980]: 101–17). Yet it seems clear that Shelley wants to alter our understanding of what defines “the rational” in scientific inquiry rather than simply, as Wexblatt wants to suggest, argue against it.

10. See Peter Brooks, “‘Godlike Science / Unhallowed Arts’: Language, Nature, and Monstrosity,” in *The Endurance of “Frankenstein”* 205–20.

the attempt to forget the mother's legacy entirely," the female creature was certainly galling to Frankenstein for its potential to reappropriate the role of reproduction. Frankenstein, Marder writes, is driven by a compulsion "to circumvent the necessity of passing through the mother in order to give birth and be born."¹¹ It is worth arguing further that Frankenstein, as repulsed as he is by the creature he has created, is completely unable to contemplate the notion of a *female* embodiment of knowledge. Such a "natural" embodiment, Mary Ann Doane argues, would normally offer "a certain amount of epistemological comfort" since the biological role of the mother renders her "immediately knowable."¹² Because mothers offer at least "the possibility of certitude in historical knowledge," they are "aligned with the social function of knowledge." Doane's contention that without the mother, both "the story of organs" and narrative itself become unstable, helps explain much of the narrative tension in the novel.

The dismemberment of the female, as Ludmilla Jordanova points out, has a long history in medical conceptions of women's bodies.¹³ The female body was frequently conceptualized as a fragmented form in terms of the way it was viewed and the knowledge that was derived from it. Thus when nineteenth century obstetrical procedure dealt with an unexpelled placenta by removing the placenta in fragments, it was consistent with the way women were perceived in general and with the way in which they were healed. The physicians who attended Mary Wollstonecraft, for example, interceded very quickly and worked assiduously to remove the placenta piece by piece. This process, which often disregarded the condition of the patient as a whole, was painful, dangerous, and frequently resulted in severe infections and many deaths,¹⁴ as it did in the case of Wollstonecraft. This

11. Elissa Marder, "The Mother Tongue in 'Phedre' and 'Frankenstein,'" *Yale French Studies* June 76 (1989): 68.

12. See Mary Ann Doane, "Technology, Representation, and the Feminine," in Mary Jacobus, Evelyn Fox Keller, and Sally Shuttleworth, eds., *Body/Politics: Women and the Discourses of Science* (New York: Routledge, 1990) 175.

13. In *Sexual Visions*, Ludmilla Jordanova traces three kinds of violence inherent in the "domain of natural sciences and medicine": "epistemological, actual, and representational" (60). The cultural impact of all three was substantial. In *Women and the Body: A Cultural Analysis of Reproduction* (Boston: Beacon, 1987), Emily Martin notes that "women are not only fragmented into body parts by the practices of scientific medicine . . . they are also profoundly alienated from science itself" (21). Thus women are dehumanized by being objectified and by being excluded, a process Frankenstein reenacts not only in this scene but in his general approach toward knowledge.

14. The "quality of obstetric teaching," Ornella Moscucci points out in *The Science of Woman* (Cambridge: Cambridge UP, 1990), was poor "even at mid-century." Moreover, gross incompetence in obstetrics and gynecology was common among both medical men and midwives. See also Alan Bewell's "An Issue of Monstrous Desire: 'Frankenstein' and Obstetrics" (*The Yale Journal of Criticism* 2.1 [1987]: 105-28) which draws on a history of

gruesome procedure, while not necessarily motivated by malice, surely retained an air of cruelty and violence that is evoked in Frankenstein's destruction of the female.

III. Product vs. Process

The events immediately following Frankenstein's destruction of the female creature are also worth looking at briefly, if only to underscore Shelley's interest in eroding Frankenstein's credibility. When he returns to his Scottish laboratory to dispose of the remains of the second monster, he places them in a basket with stones and drops them irretrievably into the sea. This act, according to Frankenstein, is consistent with a commitment to abandon the scientific practice and the scientific frame of mind that led to the creation of the monster. Yet while waiting for the cover of darkness to dispose of the "relics" of his work, Frankenstein passes the time in a revealing way: "In the mean time," he says offhandedly, "I sat upon the beach, employed in cleaning and arranging my chemical apparatus" (168). If Frankenstein is indeed serious about his "solemn vow never to resume my labours," this pastime, which suggests that Frankenstein has plans for future scientific projects, is anything but idle or innocent; yet Walton and presumably most readers overlook this part of Frankenstein's narrative. The act of cleaning equipment, which under most circumstances would hardly seem worth noting, stands out here because it suggests a moment of honesty in an otherwise entirely fabricated narrative. Frankenstein's story is, ironically, belied by a moment of unguarded candor, an important moment, given the way it undermines the integrity of narrative and communication, which, for better or worse is the cornerstone of scientific practice.

Frankenstein, by undermining narrative, rejects the central tenets of scientific practice: application, dissemination, or exchange. Frankenstein, in hoarding knowledge and storing it, so to speak, in one creature, seems to be missing the apparent point of science. The comments of Shelley's

obstetrics to argue that Shelley "made obstetrics the master code of her aesthetics" (107). For the circumstances surrounding the death of Mary Wollstonecraft see the biographies by Claire Tomalin (*The Life and Death of Mary Wollstonecraft* [London: Weidenfield and Nicholson, 1974]) and Eleanor Flexner (*Mary Wollstonecraft* [New York: Penguin, 1972]) as well as William St. Clair's study, *The Godwins and the Shelleys* (Baltimore: Johns Hopkins UP, 1989). Flexner accuses the attending physicians of gross medical incompetence aside from introducing an infection; St. Clair not only suggests that Dr. Poignand, the first attending physician, may have caused "severe damage" (177) but that Wollstonecraft "might have lived" had childbirth been "left to nature" (178). Whatever the case, what is absolutely clear is that medical knowledge, in the persons of Drs. Poignand, Clarke, Fordyce, and Carlisle, could do nothing to save her.

parents, whose works she read closely, are telling on this score. "Truth," wrote Mary Wollstonecraft, "must be common to all, or it will be inefficacious with respect to its influence on general practice."¹⁵ Godwin's sentiments, not surprisingly, are similar. "Knowledge and the enlargement of intellect," he argues in *Enquiry Concerning Political Justice* (1793), "are poor when unmixed with sentiments of benevolence and sympathy."¹⁶ The link that Godwin sees between science and virtue suggests the posture that Frankenstein professes to assume, though certainly not the actual spirit of his enterprise:

If I have conceived an earnest desire of being the benefactor of my race, I shall no doubt, find out a channel in which for [sic] my desire to operate, and shall be quick-sighted in discovering the defects, or comparative littleness, of the plan I may have chosen. (306)

Scientists, as John F. W. Herschel argues in his *Preliminary Discourse on the Study of Natural History* (1830), can only benefit by "a sense of common interest, of mutual assistance, and a feeling of sympathy in a common pursuit."¹⁷ Knowledge, by the same token, can only be advanced if "it is diffused as widely and as rapidly as possible." Moved perhaps by a recognition of the growing professionalization, competitiveness, and insularity of science, Herschel argues forcefully that pursuit of knowledge must be a social endeavor. His *Discourse*, which came on the heels of much of his own work in chemistry, astronomy and related sciences, might serve in its own right as a strong indictment of Frankenstein as scientist.

That Frankenstein himself is unclear about the role of the scientist is attributable to his early reading in alchemy. The works of Paracelsus, Cornelius Agrippa, and Albertus Magnus, that so preoccupied the young Frankenstein, are as M. Krempe explains, "useless names . . . in this enlightened and scientific age" (40). While Krempe redirects Frankenstein's reading, he is too late to alter the conception of science that has already shaped Frankenstein's thinking. The influence of the alchemists on Frankenstein is clear; from them he has come to understand science as a goal or product-oriented activity rather than process-oriented activity. In other words, for Frankenstein the scientist's objective is to transform one thing into another, rather than to investigate the ontological relationship between things.¹⁸ The slow and step-wise process of science, of arranging

15. *A Vindication of the Rights of Woman* (1792) (Harmondsworth: Penguin, 1982) 86.

16. (Harmondsworth, Penguin, 1985) 306.

17. (Chicago: U of Chicago P, 1987) 351.

18. The notions of alchemy that I am referring to are the popular connotations of the discipline, focussing on transmutation and hermeticism. In contemporary terms, this reading of alchemy is overly broad and overlooks the significant contributions it made to experi-

facts in “connected classifications,” is too mundane and has no attraction for Frankenstein.¹⁹ Given his fascination with the “Elixir of Life,” Frankenstein cannot overcome his “contempt for the uses of modern natural philosophy”:

It was very different, when the masters of science sought immortality and power; such views, although futile, were grand: but now the scene was changed. The ambition of the inquirer seemed to limit itself to the annihilation of those visions on which my interest in science was chiefly founded. I was required to exchange chimeras of boundless grandeur for realities of little worth. (41)²⁰

The attitude that the efforts of modern science result in “realities of little worth” can only belong to an individual who has lived what Frankenstein himself describes as a “remarkably secluded” life. Having read the alchemists in seclusion, and followed their practice of working in seclusion, Frankenstein has no social context for his science. It is not surprising, then, that he should devalue advances in knowledge that have broad impact and widespread application for those that engage a very narrow audience. Herschel evokes Frankenstein’s language when he warns, that in spite of their role in “the creation of experimental philosophy” (12), the work of the alchemists was too “remote” and ultimately not grounded in “the realities of nature.” The pursuit of science, adds Herschel, should not be secretive or proprietary:

Knowledge is not, like food, destroyed by use, but rather augmented and perfected. It acquires not, perhaps, a greater certainty, but at least

mental science. See for example Thomas Goldstein’s *The Dawn of Modern Science* (Boston: Houghton Mifflin, 1980) or Ian Hacking’s *The Emergence of Probability* (Cambridge: Cambridge UP, 1975). Charles Mackay devotes a substantial section of his *Extraordinary Popular Delusions and the Madness of Crowds* (1841) (New York: Harmony Books, 1980) to alchemy, and while he recognizes its contribution to modern science, he derides it as an “unprofitable pursuit.”

19. The notion of incremental additions to science can be found in Herschel, but is frequently associated with both Charles Lyell and Charles Darwin. For them, change in knowledge was similar to change in nature. Bruno Latour discusses the reliance, in contemporary science and engineering, on unproblematic systems, where process is not considered as important as product (*Science in Action* [Cambridge MA: Harvard UP, 1987]).

20. Shelley’s “The Mortal Immortal” (1833) deals directly with the discovery of the elixir vitae as the product of alchemy. As in *Frankenstein*, the knowledge embodied in the elixir proves useless not only to its discoverer (Cornelius Agrippa) but to his student, Winzy, who has consumed the elixir. The elixir renders Winzy at least partly immortal and thus places him outside the context of human events. Like the monster, he pursues death to eradicate knowledge that can’t be reconciled with reality. See Mary Shelley, *Collected Tales and Stories*, Charles Robinson, ed. (Baltimore: Johns Hopkins UP, 1976) 219–30.

a confirmed authority and a probable duration, by universal assent; and there is no body so complete, but that it may acquire accession, or so free from error but that it may receive correction in passing through the minds of millions. (69)

While Herschel would seek knowledge in the midst of millions, Frankenstein cannot pursue it unless alone. Even when he arrives at the university town of Ingolstadt, he is unable to appreciate the value of science to the community. Instead of finding the academic world inviting, he reports that even there he could not overcome an “invincible repugnance to new countenances” (40). Aloof and out of touch with those around him, Frankenstein cannot help but use his science to create something that is as repugnant to society as society is to him.

The creation of life is thus, for Frankenstein, a purely intellectual challenge that is completely disconnected from the academic and the social worlds in which he exists. Nowhere in the process of creating the monster does he reflect on the potential value of each new scientific innovation that results in the creature. Yet to the scientific community, any one of the techniques that could result in the creation of a fully formed version of a human being, would surely have been a scientific triumph. Frankenstein’s inability to see—quite literally—the parts for the whole is crucial here, not merely for what it owes alchemy, but for the way that it reflects the patriarchal practices of science in general. Such practices, according to Donna Haraway, not only posit a false objectivity, they assiduously avoid adjusting knowledge to contexts. Haraway’s advocacy for “situated knowledges,” which “are about communities, not about isolated individuals” (590), is particularly resonant in *Frankenstein*. Shelley’s concerns about science anticipate feminist critiques in the way she challenges Frankenstein’s method of practice, his “objective” claims, and finally, his understanding of what counts as knowledge.

IV. The Body of Knowledge

Frankenstein’s shortcomings could not have gone undetected by Shelley’s readers, who surely subscribed to the traditional view of scientific procedure. Frankenstein ignores the “slow, uncertain, and irregular” pattern, to use Herschel’s language, by which science has traditionally contributed to knowledge. That, finally, he contributes no lasting achievement to science in the process is Shelley’s clearest indictment of his work. By rejecting science’s “realities of little worth,” he has dismissed a long tradition in which small but useful discoveries accumulate to create what we call scientific knowledge, and what is more important he has dismissed the

scientific community that validates that knowledge.²¹ Instead, Frankenstein opts to direct all of his science in the creation of a separate and distinct body of knowledge. The monster as the incarnation of that knowledge enters the world without introduction and without precedent.

New and unfamiliar knowledge, however “good” or “bad,” can only be troubling to those who are unacquainted with its origins. The scientist needs to recognize that all knowledge has a monstrous quality and the only way to introduce knowledge is to de-monstrate it, that is, to display it and in doing so, to demystify it. The tension between the pursuit of knowledge and the communication of knowledge is surely as crucial as any epistemological dilemma faced in the scientific world. Science, according to Herschel,

has its own peculiar terms, and, so to speak, its own idioms of language; and these it would be unwise, were it even possible, to relinquish; but everything that tends to clothe it in a strange and repulsive garb, and especially every thing that, to keep up an appearance of superiority over the rest of mankind, assumes an unnecessary guise of profundity and obscurity, should be sacrificed without mercy. Not to do this, is to deliberately reject the light which the natural unencumbered good sense of mankind is capable of throwing on every subject. (70)

The effective communication of knowledge, however, is predicated on a scientist’s affinity for the knowledge that he or she has introduced. Frankenstein’s failure as a scientist is due in great part, then, to his inability to recognize and perhaps even understand what the monster represents. Moreover, in an era when the public presentation of science had much to do with its value and its acceptability, Frankenstein’s secretive approach to knowledge production can be taken as a sure sign that his discovery will be a disaster with respect to public understanding.²²

V. Applied Knowledge

The compartmentalized nature of Frankenstein’s scientific genius deserves close attention in terms of the way that it determines his actions. Schooled

21. It is worth considering here Thomas Kuhn’s notion, in *The Structure of Scientific Revolutions* (Chicago: U of Chicago P, 1972), of how science becomes “normal science” within a culture. “A New theory,” writes Kuhn, “is always announced together with applications to some concrete range of natural phenomena; without them it would not even be a candidate for acceptance” (46).

22. See Jan Golinski’s *Science as Public Culture: Chemistry and Enlightenment in Britain, 1760–1820* (Cambridge: Cambridge UP, 1992) for the role of public science in the romantic period.

in the knowledge of the ancients, he has also learned the techniques of the moderns. Inspired by Professor Waldman, who encourages him to study “every branch of natural philosophy,” he outstrips his colleagues in a matter of a few years. Frankenstein’s encyclopedic knowledge seems to compare favorably to the polymathic genius of many late romantics, yet his knowledge is markedly limited by its sterility. The creature is emblematic of that sterility, but so is Frankenstein’s fundamental understanding of what he has uncovered in his discovery of the principle of life. It is indeed remarkable that someone so obsessed by the force of life shows no insight into how to restore, lengthen, or preserve it.

This paradox is the most important irony in the novel. After having created the monster, that is after having created life itself, Frankenstein is plagued—because of the monster—by death. Frankenstein scavenges from the dead to create life, and the creature, in retribution, attacks the living to “create” death. That Frankenstein passively accepts the deaths of those around him is at first perplexing; but Frankenstein’s fascination with the concept of life is wholly dependent on a parasitic devotion to death. Thus, the gray area between life and death, of restoring life to a being on the brink of death or only just recently dead, is a concept that Frankenstein is unwilling to grasp. Are we to believe, for example, that the skills that created a monster from inorganic matter could not restore life to a previously living organism? Frankenstein makes the following claim, though given the context of his work, it seems self-serving and convenient:

I thought, that if I could bestow animation upon lifeless matter, I might in process of time (although I now found it impossible) renew life where death had apparently devoted the body to corruption. (49)

From the perspective of nineteenth century scientific practice, Frankenstein’s assertion is illogical and disingenuous. The notion of being able to instill life in an assemblage of human parts where it proved impossible in a whole cadaver would have struck Frankenstein’s (and Shelley’s) scientific contemporaries as absurd. The work of the renowned “electrician” Giovanni Aldini, a respected itinerant scientist and the nephew of Galvani, was based entirely on the hope of galvanic restoration of the fatally ill. “Numerous instances could be produced,” Aldini contended in his *General Views on the Application of Galvanism*, “in which persons have been hurried to the grave before life was entirely extinct. I view with horror and indignation the haste with which a man, who appears to have drawn his last breath, is thus banished from society, and deprived of a chance of recovery.”²³ To this

23. See Aldini’s *General Views on the Application of Galvanism to Medical Purposes Principally in cases of suspended Animation* (London: J. Callow, Princes Street and Burgess and Hill, Great Windmill Street, 1819) 17.

end (with some entrepreneurial acumen), Aldini even proposed portable galvanic machines “weighing from 24 to 38 ounces”; these, he suggests, might be given to children who might “be taught its value from their tenderest years and afterwards learn to apply it in cases of suspended life” (41).

The surgeon, John Birch, in his 1802 *Essay on the Medical Application of Electricity*,²⁴ describes the reanimation of “a labouring man in a fit of despair” who, after hanging himself, could not be revived. The attending physician, reports Birch,

passed an electric shock from one leg to the other, the effect of which was extremely surprising; the patient started, opened his eyes, and seemed very much frightened. . . . The shocks were repeated three or four times in the space of ten minutes; after the last, a kind of hysteric affection took place, and seemed further to relieve him; his feet became warm, a general perspiration ensued, [and] he became quite rational. (53)

“It is evident,” Birch concludes, that “life, apparently suspended, was instantaneously called back by the shock.” Needless to say, Birch’s claims for the recuperative effect of electricity must be taken with a grain of salt, as must his reports that electricity can relieve constipation, the gout, mild paralysis, blindness, and impotence. Yet Birch’s earnest application of this new technology in the service of his patients provides an interesting contrast to Frankenstein who shows none of Birch’s ingenuity. Moreover, the parenthetical nature of Frankenstein’s disclaimer—“although I now found it impossible”—about his knowledge of reanimation, renders it entirely suspect, given that Frankenstein does not recount even a single attempt to actually restore life. Even more important is the unmistakable subtext of the statement, that Frankenstein deliberately chose to pursue creation over restoration. It’s hardly surprising then that Frankenstein never sees the obvious connection between the animation of the creature and the re-animation or restoration of the monster’s victims.

Exactly what Frankenstein might be able to do with his knowledge is particularly interesting given that so many other characters manage to apply their knowledge in useful and productive ways. There is a consistent effort in the novel to demonstrate that scientific attentiveness can prolong and restore life. These are telling moments not only because they contrast so

24. Birch was “Surgeon Extraordinary” to the Prince of Wales and was affiliated with St. Thomas’ Hospital where he almost certainly learned of Aldini’s electrical experiments. Birch relied on static electricity, which was more convenient than the cumbersome Voltaic piles used in Galvanism. See Birch’s *An Essay on the Medical Application of Electricity* (London: J. Johnson, 1802).

sharply with Frankenstein's patterns of behavior, but because they reveal Mary Shelley's concerns about how knowledge might be used to assist others.

Perhaps the most dramatic moment of reasoned intervention and assistance is the creature's effort to save a young girl from drowning. Although the monster has only just been rejected by the DeLaceys, he is still able to be alert and compassionate. Hidden in the woods, he sees a young girl running "in sport" from her companion. "She continued her course along the precipitous sides of the river," the monster tells Frankenstein,

when suddenly her foot slipt, and she fell into the rapid stream. I rushed from my hiding place, and, with extreme labour from the force of the current, saved her, and dragged her to shore. She was senseless; and I endeavoured, by every means in my power, to restore animation . . . (137)

The enormous strength of the creature contributes to his success, but it isn't enough on its own. The monster must try "every means . . . to restore animation" and in doing so demonstrates a moral commitment to the application of knowledge in the service of humanity. The girl's companion, ignorant not only of the monster but of the method used to revive her, shoots the creature and thus provokes a vow of "deep and deadly revenge."²⁵ The contrast between the behavior of the untutored creature and his creator is striking. The monster, equipped only with the rudiments of

25. I want here, and elsewhere, to avoid reification of the monster as essentially monstrous, i.e., that the creature must be frightening because it does not measure up to human standards of beauty or attractiveness. I also want to reject the notion, proposed by a number of readers including Sue Weaver Schopf, that the monster is "anti-social" or "misanthropic" ("Of What a Strange Nature is Knowledge": Hartleian Psychology and the Creature's Arrested Moral Sense in Mary Shelley's 'Frankenstein,'" *Romanticism Past and Present* 5.1 [1981]: 33–52). The monster's problem is quite the opposite; he is a social creature, who wants to engage other humans. As an embodiment of knowledge he understands that the appropriate context for him is a social one. That the monster recognizes himself as "ugly" when he looks at his reflection merely suggests the influence of social standards and the extent to which the monster himself is unaware of the knowledge he represents. The issue is not, as Robert Wexblatt argues, that the monster is "made to appear 'ugly' . . . because what he represents is 'bad'" (113). The impulse to reduce the monster and his actions to the level of the merely grotesque is problematic. By accepting the creature as a conventional monster, in the most reductive way, readers elide the embedded context in which the creature exists. Stephanie Kiceluk, for example, has written persuasively that the monster demonstrates "Shelley's horrified recognition . . . of woman as she is culturally and socially constructed by man." Yet, in spite of her willingness to reinterpret the monster, she tacitly accepts the notion that the creature is responsible for "atrocities after atrocities" ("Made in His Image: Frankenstein's Daughters," *Michigan Quarterly Review* Winter 30.1 [1991]: 110–26). Kiceluk seems willing to judge the creature's "crimes" by traditional (patriarchal?) standards rather than seeing them as cultural and social constructions in their own right.

scientific knowledge (gleaned perhaps from the notes on his own creation), makes the best use of it when it is needed.

Frankenstein, by contrast, demonstrates no similar commitment to the application of knowledge in the service of society. In his enthusiasm to discover “the principle of life,” Frankenstein is indifferent to the problems that trouble the living. He shows no interest in making inquiries into the pragmatic issues of life and rejects the ugly workaday world of science. Frankenstein’s lack of concern for pragmatism in science parallels his lack of sensitivity to the pragmatic product of his sublime conception. The monster must be fed, nurtured, and cared for, and it’s no wonder, as Ellen Moers has pointed out, that Frankenstein is revolted by that prospect.²⁶ The daily routines of life—and death—are filled, as Mary Shelley knew very well, with unpleasant moments that require every bit as much skill and application as Frankenstein gave to his pursuit.

Frankenstein’s own daily needs, medical or otherwise, are well taken care of in spite of his negligence toward others. Even in the rustic harbor town where he is arrested for the murder of Clerval, he is treated humanely. Though “on the point of death,” Frankenstein is nursed back to health even though he is suspected of murder. Frankenstein characterizes the hired nurse sent to attend him as “indifferent,” yet her tone betrays only a sense of deference and commitment that seem consistent with her responsibilities. “Are you better now, sir?” she asks politely of Frankenstein:

I believe that it were better for you if you were dead, for I fancy it will go hard with you! . . . However, that’s none of my business, I am sent to nurse you, and get you well; I do my duty with a safe conscience, it were well if every body did the same. (175)

The nurse’s words should cut to the quick, but Frankenstein can only describe them as “unfeeling,” particularly “to a person just saved, on the very brink of death.” Frankenstein then accuses a local physician, who prescribes medication for him, of “carelessness” in spite of the fact that his very recovery is a testimonial to the care that he receives. The efforts of the local townspeople are also significant given their earnest but futile attempts to restore Clerval to life when his body is discovered.

The process of using galvanism in a restorative manner, that is to introduce electricity into objects living or dead was, as I have already indicated, familiar to scientists and scientific popularizers of the early nineteenth century. At Oxford, Percy Shelley was fascinated by galvanism and had an electrical machine in his rooms.²⁷ Although Mary Shelley’s first

26. See Ellen Moers, “Female Gothic” in *The Endurance of “Frankenstein”* 77–87.

27. Richard Holmes, *Shelley: The Pursuit* (Harmondsworth: Penguin, 1974) 37–42.

exposure to the potential power of electricity may have taken place at the public lectures given by André-Jacques Garnerin in 1814, her extensive reading provided her with a variety of perspectives on the nature and uses of electricity.²⁸ Polidori, as Ann Mellor has pointed out, was probably trained in the therapeutic uses of galvanism when studying medicine at Edinburgh.²⁹

Galvanism was touted by Aldini as a promising technique for the restoration of life. The technique would apparently have its greatest effect on subjects who had only recently died. For this reason Aldini was particularly interested in recently slaughtered animals and—more to the point—recently executed criminals. While such experiments had what might be called a Gothic undertone—particularly when a cadaver responded to the electricity by turning its head or rolling its eyes—the ostensible purpose of the experiment was to learn more about the resuscitation of recent victims of drowning, suffocation, and asphyxiation. The study of galvanism, as Aldini noted, was “undertaken for the advancement of the welfare of the human race.”³⁰ The use of recently executed criminals, though ethically questionable, could be justified, in his view, if we recalled that “the bodies of valuable members of society are often found under similar circumstances, and with the same symptoms as those observed on executed criminals” (4). Many others, including William Nicholson, who discussed Aldini’s experiments in his *Journal of Natural Philosophy, Chemistry and the Arts*, agreed:

In the mean time the reader, will, doubtless, receive satisfaction from this short notice he [Aldini] has enabled me to give of his labour, on a subject which promises greatly to extend the limits of natural science and may be reasonably expected to add to the powers which man is enabled to exert for his own benefit over the numerous beings around him.³¹

28. See the entry for Dec. 28, 1814 in *The Journals of Mary Shelley*, Vol. 1: 1814–1822, Paula R. Feldman and Diana Scott-Kilvert, eds. (Oxford: Oxford UP, 1987).

29. See Mellor’s “*Frankenstein: A Feminist Critique of Science*,” in George Levine and Alan Rauch, eds., *One Culture: Essays in Science and Literature* (Madison: U of Wisconsin P, 1987) 305.

30. Aldini, *Late Improvements in Galvanism* 78. Joseph Venable, Jr. notes, in his brief survey of the medical uses of electricity, that it is “scarcely possible to overestimate the effect of Galvani’s and Volta’s experiments on the world of science and medicine” (“A History of Bioelectricity in Development and Regeneration,” in Charles Dinsmore, ed., *A History of Regeneration Research* [Cambridge: Cambridge UP, 1991] 157). Venable also credits Aldini’s efforts, though the result of “ill-advised enthusiasm,” as crucial to the dissemination of the practice of medical electricity.

31. Excerpt from William Nicholson’s *Journal of Natural Philosophy, Chemistry, and the Arts*, cited in Aldini’s *A Late Account* iv.

The scientific talents of Frankenstein, evident in the unprecedented nature of his accomplishment are meant to be overwhelming; certainly, we are meant to understand that he has far surpassed real practitioners, such as Aldini. Yet Frankenstein, for all of his skill in creating the monster, does not attempt in the process of experimentation to revivify, as Aldini did, experimental corpses. More significantly he makes no effort to restore to life the individuals whom he supposedly loves when all of them have, in fact, died of asphyxiation and would, therefore, be perfect candidates for his technique. If we were to twist the plot of the novel by considering a Frankenstein who did restore the victims of the monster to life, the novel could have any number of absurd outcomes. In the direction of the Gothic, one can conjecture a variation of what Muriel Spark calls "a figure-eight 'macabresque,'" in a tedious chain of literally repetitive murders, where the victim is revived only to be murdered again.³² A more romantic or comic ending, in the spirit of Victorian revisions of Shakespearean tragedy, might find Frankenstein in the midst of a revived and happy family, while the frustrated monster, aware that Frankenstein has a context for his knowledge, slinks away.

My suggestions for alternative endings are intentionally absurd and clearly disrupt the tone of the novel, yet they are not gratuitous.³³ Frankenstein, I would suggest, in neglecting his responsibility as a scientist, is oblivious to what seems obvious and humane to us and, I believe, to Mary Shelley as well. Frankenstein does not lack for knowledge, the monster is proof of that; but he is clearly unable to see how the application of that knowledge can be used in a way that is proper and judicious as well as humane and rational.

The lapses in Frankenstein's thinking are inevitably raised by first time readers of the novel, and their comments draw attention to some important issues. Frankenstein's fear of a "race of devils" resulting from the union of two monsters could, for example, be circumvented from the outset by making the initial creature infertile. This option, which students new to the novel almost always point out, is initially annoying because for more sophisticated readers it "misses the point."³⁴ But whether Frankenstein could or could not stitch together an infertile pair and send them on a

32. Muriel Spark, *Mary Shelley* (New York: E. P. Dutton, 1987) 162.

33. The notion that amusement is among the potential responses (especially for the "common reader") to *Frankenstein* is examined by Philip Stevick in "*Frankenstein* and Comedy" in *The Endurance of "Frankenstein"* 221–39.

34. And of course it does miss an important point because it grossly oversimplifies the notion of reproduction in the novel. Frankenstein is deeply resentful that a fertile monster, in addition to everything else, will be able to reproduce without needing Frankenstein, thus rendering his "circumvention of the maternal" in Margaret Homans' words, pointless. The monster's true reproductive capacity, as Margaret Homans argues, is that he "emblemizes

one-way honeymoon to South America is not as preposterous as it may seem, since it represents an attempt to resolve the novel in a way that is consistent with Frankenstein's posture as a scientist and rationalist. That the reader is able to see the full potential and the possible applications of knowledge, where Frankenstein cannot, underscores the degree to which an obsessive desire has clouded his reason.

VI. Nurturing and Science

In the conclusion of *A Newton Among the Poets*, Carl Grabo suggests that for Percy Shelley, "Science, Knowledge, in which all share and contribute, is, like love, a way to the loss of the individual in the attainment of the larger self."³⁵ Grabo's evaluation of Percy Shelley's attitude toward science is, I think, accurate and helpful in understanding Mary Shelley's attitudes as well. The notion of the pursuit of knowledge, as a cooperative effort that operates in the service of a "larger self," is a perspective that Frankenstein lacks. But where Percy is interested in the more abstract implications of what he calls—in "Prometheus Unbound"—a "chain of linked thought," Mary Shelley is concerned with its practical implications.³⁶ In either case, "linked thought," as Grabo notes, underscores a belief "in the unity of knowledge" and the idea that an "individual adds his bit to the whole" (196).

The knowledge industry of the early nineteenth century introduced to the lay reader thousands of different directions into which the energies of science could be channeled. Some were of obvious benefit to mankind and others not. Itinerant lecturers had discovered the commercial potential of science and found large audiences wherever they spoke. Aldini was himself accused, perhaps justifiably, of using galvanism in a way that owed more to spectacle than to science. Frankenstein is a product of this tradition and it is not surprising that he acknowledges that much of his attraction to science stems from aspirations to glory, fame, and, to a lesser extent, riches:

the literalization of literature that Shelley, through him, practices" (118). Nevertheless, such arguments may be useful in the process of recognizing both the book and the monster as instantiations of important but unfamiliar knowledge.

35. *A Newton Among the Poets: Shelley's Use of Science in 'Prometheus Unbound'* (New York: Gordian P, 1968) 196.

36. The quote, from "Prometheus Unbound" (iv.1.394) (see *Shelley's Poetry and Prose*, Donald Reiman and Sharon Powers, eds. [New York: Norton, 1977] 205), describes an attitude toward knowledge that Frankenstein rejects. "Shelley seems to express here," Carl Grabo writes of this portion of the poem, "his belief in the unity of knowledge, his belief that the individual adds his bit to the whole" (196).

Wealth was an inferior object; but what glory would attend the discovery, if I could banish disease from the human frame, and render man invulnerable to any but a violent death! (34)

The hyperbole of Frankenstein's statement, relying as it does on terms like "banish" and "invulnerable," leaves little room for the practical applications of science that require patience and dedication. And while Galvanism was far from a mundane practice, the work of Aldini does suggest a wide range of potential applications in daily life. For Mary Shelley, the possible ramifications of Aldini's work must have been striking. Her vision, of revivifying her dead child in a way that eerily resembles Aldini's techniques, suggests how powerful a hold science seems to have had on her.

Mary Shelley's concern about her own health and the health of her family are crucial to our understanding of the novel.³⁷ The issue is not merely one of mothers in childbirth, but of the efficacy of human intervention in all forms of illness. Frankenstein's "big science," the creation of the monster, distracts us too easily from a paradigm of smaller science where knowledge is applied with great effect but without much ado. The novel is replete with scenes which emphasize the value of compassionate and nurturing behavior; even where professional medical attention seems ineffective, nurturing alone shows restorative and curative effects. These small moments of care and attention serve as a direct contrast to Frankenstein's science, and thus offer a moderated vision of how knowledge can and does work in social contexts.

The very first example of Shelley's alternative paradigm occurs even before Frankenstein's birth, when his mother, Caroline Beaufort, attends "with the greatest tenderness" her own ailing and destitute parent. Caroline takes on tedious and difficult work "to support life" but eventually the elder Beaufort dies and she is nearly overcome with grief. Her caring, however, clearly has an effect on Alphonse Frankenstein who, we learn, "came like a protecting spirit to the poor girl" (28). Though Frankenstein can narrate this history, he is unable to understand its significance or, for that matter, the way it foreshadows future events in his life. Just before Frankenstein leaves for university, Elizabeth, Frankenstein's beloved "sister," falls ill with scarlet fever. Frankenstein's mother, "when she heard that

37. Recent biographies, including Emily Sunstein's *Mary Shelley: Romance and Reality* (Boston: Little Brown and Company, 1989) discuss the medical treatment and the physician acquaintances of the Shelleys. Richard Holmes's biography of Percy also pays close attention to the subject. Kenneth Cameron describes Lind, who was physician to George III, as "a kindly man of Liberal ideas both in political and scientific thinking" (*Young Shelley* [New York: MacMillan, 1950] 13).

the life of her favourite was menaced," immediately attends to Elizabeth and "her watchful attentions triumphed over the malignity of the distemper."³⁸ "Elizabeth was saved," Frankenstein recounts dispassionately, but exposure to the illness proved "fatal to her preserver." Frankenstein demonstrates none of his mother's zeal when it is her turn on the sickbed and reports her death in a way that is peculiarly detached. Even science proves helpless where Frankenstein's mother was successful; "the looks of the medical attendants," Frankenstein says, "prognosticated the worst event." The death of his mother, which haunts Frankenstein later in the novel, is interesting in that it underscores Frankenstein's own ineffectuality as a healer; the qualities that made his mother so successful a nurse are clearly missing in him. When Frankenstein uses his familiar passive voice to explain that "many arguments had been urged to persuade my mother to refrain from attending upon her [Elizabeth]," it is to rationalize the distance he maintained to avoid imperiling himself. The death of his mother does not elicit care or sympathy from him either, nor does it elicit the kind of scientific curiosity that one might expect in response to a tragic illness. Readers don't seem to know what to do with this relatively lengthy scene, which appears early in the novel, until it is rendered "Gothic" by Frankenstein's dream of his mother.³⁹ Yet it functions very effectively, if somewhat didactically, as a lesson in the efficacy of caring behavior. Critical inattention here seems to parallel Frankenstein's own behavior, in favoring the "monstrous" over the mundane. Caroline Beaufort, Justine Moritz, Clerval, Walton and the creature himself, all understand that knowledge, to be effective, must be applied responsibly and methodically.

As the "cause" of her own mother's death, Shelley surely conjectured about the circumstances surrounding Mary Wollstonecraft's death. Although Wollstonecraft was attended to by several doctors, none was able to save her. The question for Mary Shelley and virtually every woman of

38. I am quoting here from the 1831 version of the novel, ed. M. K. Joseph (New York: Oxford UP, 1969) 42–43. In the 1818 edition, Caroline Frankenstein impatiently waits until she hears that Elizabeth is recovering and then, finding "that she could no longer debar herself from her society . . . entered her bedchamber long before the danger of infection was past" (Rieger 37). The revision underscores Caroline Frankenstein's commitment to Elizabeth and makes her the active agent in Elizabeth's recovery. In both editions, Frankenstein recognizes the "fortitude and benignity" of his mother's actions, while making no effort to emulate them.

39. See Marie Hélène-Huet's *Monstrous Imagination* (Cambridge, MA: Harvard UP, 1993) for a recent discussion of the significance of the kiss in Frankenstein's dream. Huet's reading of the novel, which relies on the role of Percy as Shelley's collaborator, is useful in considerations of the nature of monstrosity. Huet considers the monstrous in a long tradition of decontextualized art ("eikastiken" art), that is "art without art" (130).

the period was not whether circumstances might have been different had galvanism been able to restore her mother to life, but whether science would ever learn how to protect mothers and their infants from death. Years after the writing of *Frankenstein*, Shelley suffered a miscarriage that threatened her life. In the intervening years she lost her favorite child, William Shelley (b. Jan. 24, 1816–d. June 17, 1819), and her daughter, Clara (b. Sept. 2, 1817–d. Sept. 24, 1818). After the death of her first child, an unnamed female born Feb. 22, 1815, she wrote, “’tis hard indeed for a mother to loose [sic] a child” (68) and later “stay at home net [sic] & think of my little dead baby—this is foolish I suppose yet whenever I am left alone to my own thoughts & do not read to divert them they always come back to the same point—that I was a mother & am so no longer” (69). One of the most frequently cited passages from the *Journals* follows several days later (March 19th):

Dream that my little baby came to life again—that it had only been cold & that we rubbed it by the fire & it lived—I awake & find no baby—I think about the little thing all day. (70)

Shelley’s dream is clearly important to readers of *Frankenstein*, particularly for those who are interested in interpreting the creation of the monster as a birth myth. The dream not only suggests how troubled Shelley was, but also how frustrated and helpless she felt. The mysterious death of her child, like the mysterious deaths of so many other children and mothers, was not a phenomenon that medical science could explain, much less prevent. The condition of pregnancy, as Claire Kahane has noted, makes sense as a “primary Gothic metaphor” given that in “this most definitively of female conditions potentially lie the most extreme apprehensions” (57). It is not surprising that Shelley in a crude way, but with scientific insight, should dream of a process of restoration and recovery for her dead infant.⁴⁰ Her imagination may have carried her beyond the current state of scientific knowledge, but it expresses a desperate longing for a time when senseless deaths could be avoided by human intervention. *Frankenstein*’s entire narrative, in fact, is made possible by just such an intervention. Franken-

40. Linda Layne’s studies of mothers’ responses to the loss of children during pregnancy are extremely useful in understanding *Frankenstein* from this perspective. Layne focuses on “fragmentation and integration in narratives of loss” and though many are linked to contemporary forms of technology, they are resonant in the context of Mary Shelley’s own experiences with pregnancy and loss. See “Of Fetuses and Angels: Fragmentation and Integration in Narratives of Pregnancy Loss” (*Knowledge and Society* 9 [1992]: 29–58) and “Motherhood Lost: Cultural Dimensions of Miscarriage and Stillbirth in America” (*Women & Health* 16.3/4 [1990]: 69–98).

stein, like the baby of Mary Shelley's dream, is cold and near death when he is discovered by Walton, who acts in a manner consistent with Shelley's reanimation dream. Walton brings the near frozen body of Frankenstein onto the deck and restores him to animation by rubbing him with brandy, and forcing him to swallow a small quantity. "As soon as he shewed signs of life," Walton writes to his sister, "we wrapped him up in blankets, and placed him near the chimney of the kitchen-stove. By slow degrees he recovered, and ate a little soup, which restored him wonderfully" (20). Though no physician himself, Walton is well acquainted enough with severe frostbite to take the appropriate steps to remedy it. His response, like the monster's reaction to the drowning girl, is immediate, focussed, and disciplined. Frankenstein's expression of gratitude to Walton for having "benevolently restored me to life" provides an instructive contrast for the remainder of his narrative, which shows no similar patterns of benevolence or, for that matter, restoration.

It is well worth remembering that while Mary Shelley was writing *Frankenstein* issues of childbirth and the medical treatment of mothers and infants assumed an unprecedented importance in the public mind. Several months after Clara was born, the English public was outraged when Princess Charlotte and her offspring—the long awaited heir—died during childbirth. The attending physician, Sir Richard Croft, committed suicide after a similar incident in the following year. The exact cause of Charlotte's death was not really understood and, according to Judith Schneid Lewis, continues to be the source of some debate.⁴¹ Lewis suggests that the complications were associated with Charlotte's prolonged labor (over 50 hours) and indicates that a trend ensued, in the medical profession, to hasten deliveries. The death of Princess Charlotte, who received "the best" medical attention, underscores both the severity of the problem shared by women throughout the nineteenth-century and the general concern about the inability of the medical sciences to improve the situation.⁴² "It is hard to comprehend," write Elaine and English Showalter, "how little even scientists and doctors knew about human reproduction in the nineteenth

41. See Lewis' *In the Family Way: Childbearing in the British Aristocracy, 1760–1860* (New Brunswick, NJ: Rutgers UP, 1986) 173.

42. Susan Lawrence also notes that in the nineteenth century "the whole condition of pregnancy was obscure" ("Desirous of Improvements in Medicine": Pupils and Practitioners in the Medical Societies at Guy's and St. Bartholomew's Hospitals, 1795–1815," *Bull. Hist. Med.* 59 [1985]: 99). William Arney's useful survey of obstetrics looks at some of the problems of the profession in Foucauldian terms of power and knowledge. Mary Poovey's *Uneven Developments* (Chicago: U of Chicago P, 1988) outlines the way in which early practices objectified the female body and appropriated it as a domain for male knowledge.

century" (38).⁴³ The national disappointment at the death of so young a princess, not to mention that of the potential heir to the throne was, as one account put it, "a blow which the nation appears to really feel acutely."⁴⁴

The months surrounding Charlotte's death were already hectic and stressful ones for Shelley, coming in the midst of her own pregnancy (with Clara), the publication of *Frankenstein*, a move to London, and preparations for a move to Italy. And though Italy had been recommended to the Shelleys for its recuperative powers, it had little to offer, from Shelley's perspective, in the way of good medical care. In a letter to Maria Gisborne she explains that they will be wintering in Pisa, "a place recomended [*sic*] particularly for Shelley's health":

We would like of all things to have a house near you by the seaside at Livorno but the heat would frighten me for William who is so very delicate—and we must take the greatest possible care of him this summer—We shall at least be within reach of a good english physician & we have the most rooted contempt & in any case of illness the greatest dread of Italian Medicos. (98)

The doctor to whom Mary is referring is John Bell, an eminent surgeon from Edinburgh, who also moved to Italy for reasons of health. Bell had also established himself as something of a radical by opposing the move, made by the more socially prestigious physicians, to limit the attendance of surgeons at the Royal Infirmary. Over the course of time Bell became more than simply the Shelleys' family doctor; both he and his wife were frequent guests at the Shelley household. Bell's attraction for the Shelleys, as an eminent man of science and a man of conscience, must have been irresistible. Having stood firm in support of the surgeons against the elitist physicians, Bell's opposition to the tyranny within his profession could not help but elevate him in Percy's estimation.

In his capacity as a doctor Bell had not only "been of service" to Shelley, but he also treated William, who was ill with malaria. "Fortunately," Mary wrote, "he is attended by Mr. Bell who is reckoned even in London one

43. See Elaine Showalter and English Showalter, "Victorian Women and Menstruation," in Martha Vicinus, ed., *Suffer and be Still: Women in the Victorian Age* (Bloomington: Indiana UP, 1972) 38–44.

44. The loss of Charlotte and her child meant that succession, once again, was back in the disagreeable hands of George's aging and unappealing brothers. See Alison Plowden's *Caroline and Charlotte* (London: Sidgwick and Jackson, 1989) for a description of the events surrounding Charlotte's death. For a contemporary response, see "On the Late National Calamity" in *Blackwood's Edinburgh Magazine*, December 1817.

of the first English Surgeons (99).” In spite of Bell’s efforts William died on June 7, though the doctor clearly worked hard at trying to keep him alive. On June 5th Mary wrote “Yesterday he [William] was in the convulsions of death and he was saved from them” (99).

The close relationship that both Mary and Percy Shelley had with physicians, on both a personal and professional level, is important for an understanding of their attitudes toward science. That some of the doctors, like Bell, appeared in their lives well after the writing of *Frankenstein* is less important than the qualities that must have attracted the Shelleys to them. The pattern of Percy Shelley’s illnesses left him constantly indebted to and on the lookout for good physicians, and Mary, always solicitous of Percy’s health, her own health, and that of her children, incorporated them into her life as well.

The question of Percy Shelley’s need for medical attention is less interesting here than the intellectual aspect of the doctor-patient relationship that was obviously very meaningful to him. One of the attractions for Percy was the fact that his physicians were men of science—people whom he could engage in scientific conversation. Another attraction was that many of the scientists, as Donald Reiman has pointed out, were liberal thinkers.⁴⁵ Shelley’s first exposure to a doctor of this sort was at Eton when he struck up an acquaintance with Dr. James Lind.⁴⁶ Lind introduced Shelley to many radical and liberal works—perhaps even Godwin, and inspired in him a penchant for letter-writing and pamphleteering.

When Shelley’s complaints grew serious many years later, he sought the advice of William Lawrence, whose medical reputation as one of London’s finest doctors was already well established. But Lawrence gained particular notoriety as the author of *Lectures on Physiology, Zoology and the Natural History of Man* (1819), a materialist tract that, for a period, was banned. Lawrence’s views, including the position that “vitality was a property of organized matter,” were ones with which Percy could easily sympathize. Among the implications of Lawrence’s immanentist position, as L. S. Jacyna has observed, is that moral and ethical responsibility “must arise from man’s organic needs and aptitudes” rather than from a supreme being.⁴⁷ Although

45. See Donald Reiman, *Shelley and His Circle: Manuscripts Vol. VI* (New York: The Carl H. Pforzheimer Library, 1973) 652. Elsewhere in *Shelley and his Circle*, Kenneth Cameron argues that Lawrence’s “antireligious views” may have attracted Shelley (Vol. III: 483–84).

46. See Desmond King-Hele’s “Shelley and Dr. Lind,” *Keats-Shelley Memorial Bulletin* 18 (1967): 1–6.

47. Lawrence’s controversial theories about the organization of life are examined by L. C. Jacyna (“Immanence or Transcendence. Theories of Life and Organization in Britain, 1790–1835,” *Isis* 74 [1983]: 311–29) and Kentwood Wells (“Sir William Lawrence [1783–1867]: A Study of Pre-Darwinian Ideas on Heredity and Variation,” *Journal of History of Biology* 4.2 [1971]: 319–61).

Shelley was already in Italy by the time the *Lectures* were published, it is certain that Shelley found as much of an ally in Lawrence as he did a physician. That Percy and Mary often found themselves in need of medical treatment is not unusual; what is striking is their knack for finding doctors who were not only accomplished in their fields, but scientifically curious, and—in some sense—radical or, at least, socially committed. These were people who viewed both practical and theoretical science in the context of social responsibility and who had a social and political agenda that Percy, at least, found admirable. Thus physicians had a substantially positive role in the lives of the Shelleys; in addition to attending to Mary, and to the Shelleys' children, they endeavored to learn more about the medical sciences and were willing, for the sake of that knowledge, to take positions that defied authority.

VII. Demonstrating Knowledge in Society

I have taken the time to discuss the doctors that the Shelleys knew because, as socially engaged physician/scientists, they helped elucidate Mary Shelley's conception of the moral obligations of the man of knowledge. Shelley is careful to make Frankenstein a master of many branches of knowledge, including medicine, and studiously avoids locating him in any one scientific tradition. The result is a "generic" scientist whose narrow obsession is expressed in the monster. Within the Christian tradition, such scientific "obsessions" were dangerous because they might either undermine the basis of faith, or simply distract the scientist from broader moral obligations. In a household permeated with Percy's atheism, cautionary religious proscriptions were nonsense. Shelley's enthusiasm for the radical ideas espoused by Percy was tempered and she adopted positions that suited her own inclination. Like Percy, she was interested in advocating and encouraging scientific inquiry, but where he was willing to trust the scientific community to participate in a "link'd chain of thought," she would have it answerable to a more familiar code of ethics. Thus her concern for the direction of science and for the moral responsibility of scientists does not stray too far from traditional Christian values, though it owes little to systems of belief. The hubris of Frankenstein's inquiry into the forces of life and death is secondary, in Mary's view, to the social hubris he commits by pursuing knowledge for the sake of no one but himself.

The familiar platitude, that Frankenstein is doomed because he transgresses into a realm of knowledge that is forbidden to humanity, needs to be put aside. Well before Frankenstein attempted to assume a God-like role, by creating a "new species," he broke faith with a tradition that was at once both moral and scientific. An alternative Frankenstein, cast in the mold of say, William Lawrence or John Bell would surely have directed

his skills toward the “improvement” of mankind. Another Frankenstein might, like Edward Jenner, have taken his hard won knowledge to the provinces. Yet another Frankenstein, more important still, might have been a woman.⁴⁸ “Women,” Wollstonecraft wrote in her *Vindication of the Rights of Woman*, “might certainly study the art of healing and be physicians as well as nurses” (261). Whatever the case, Frankenstein’s life as a scientist would have been complete because of the moral quality guiding his pursuit of knowledge.

The choices available to Frankenstein are not merely a matter of speculation. Shelley invokes her own experiences and those of women like her to underscore the very real need for the knowledge that Frankenstein’s science might have been able to offer. Her voice and her experience seem to inform Frankenstein’s only moment of real awareness of the potential uses of his knowledge:

Death snatches away many blooming children, the only hopes of their doating parents; how many brides and youthful lovers have been one day in the bloom of health and hope, and the next a prey for worms and the decay of the tomb! (174)

Shelley allows Frankenstein to recognize, if only briefly, the possibility that science might be able to have some connection with its “object” of study. This kind of approach, based on “respect rather than domination,” hints at what Evelyn Fox Keller sees, in *Reflections on Gender and Science*, as revisionary science.⁴⁹ Much of Keller’s critique emerges for the work of Barbara McClintock, who posits, in terms that are meaningful in *Frankenstein*, that the scientist must have a “feeling for the organism.” Keller’s critique of science is similar to Shelley’s in that it does not rely on a rejection of technology or of knowledge; nor does it invoke traditional stereotypes of women as somehow more sensitive or intuitive. Instead, it recognizes the scientific impulse to deny context and subjectivity in order to impose the fictions “of disinterest, of autonomy, [and] of alienation” (70). Knowledge produced under this system, as Mary Shelley makes clear in *Frankenstein*, bears the heavy burden of these fictions. Shelley’s monster, unlike Frankenstein, understands that there should be a way to situate himself in the discourse of relationships.

Science, however, is structured to resist shifts in sensibility and, like Frankenstein himself, is destined to generate knowledge without necessarily

48. Here again, Alan Bewell’s reading of the novel as “an assertion of [Shelley’s] imaginative authority” (124) is useful, situated as it is in the discourse of nineteenth-century obstetrics.

49. See Evelyn Fox Keller’s *Reflections on Gender and Science* (New Haven: Yale UP, 1985) and *A Feeling for the Organism* (New York: W. H. Freeman, 1983).

understanding it. The monster, as the self-conscious product of science, simply wants to change what counts as knowledge and in doing so, be counted. Shelley wants the reader to understand that if any constraints exist on Frankenstein's knowledge, they are social rather than supernatural. Because Frankenstein created the monster for his own benefit—to increase his own knowledge—rather than for the benefit of the community—to contribute knowledge—the creature is inevitably viewed by society as foreign and unacceptable. The rationale behind that rejection is, of course, that the monster represents a “species” of knowledge that has not been contextualized. The monstrous creature, dwelling apart from a society that misunderstands it, is thus the perfect embodiment of Frankenstein's knowledge and finally of the scientist himself.

Georgia Institute of Technology